

F-gas regulation and PFAS ban – A threat to many refrigeration systems

Current proposals for the revision of two European regulations – the amendment to the F-Gas Regulation and the PFAS restriction process as part of the REACH Regulation – have the potential to limit, either completely or partially, the use of fluorinated refrigerants (F-Gases) in refrigeration, air conditioning or heat pump systems in the very near future, both in new and in existing systems. Fluorinated refrigerants are still used in the majority of applications today.

Even if the proposed changes to these regulations are not all accepted, as an operator of a refrigeration, air conditioning or heat pump system, you should prepare for the possible new restrictions now!

Note: The organizations behind this letter fully support the goals of the current F-Gas Regulation, the further reduction of F-Gases and the use of natural refrigerants wherever technically possible and where sensible in terms of energy efficiency. However, this transition must be carried out with a sense of proportion, taking into account that it cannot be done instantly and also considering what the industry can do in reality.

What would we like you to do?

Use your contacts with politicians (state, federal and European) to urgently draw attention to the major problems that these proposals will cause for you. Only through our joint efforts can we succeed in influencing the crucial and upcoming decisions in the European Parliament and Council. Time is of the essence: The EU Parliament will vote on the F-Gas Regulation on 29 March – proposed amendments to the report of the Parliament Environment Committee must have been submitted seven days in advance.

A few concrete examples will help to clarify the impacts of the proposals for the two regulations:

- In 2023, a German **news broadcaster** is investing almost EUR 1 million in a new refrigeration system with F-gases for studio and server cooling, which is essential for its operations. The installation meets all the currently valid ordinances and regulations. The plant would normally have a lifespan of 15 to 20 years. From 2024, however, there is no longer any guarantee that its refrigerant can be refilled in the event of a refrigerant leak, which endangers continued operation. Up to and including 2029, servicing would still be permitted with reprocessed or recycled refrigerant. However, this is already in limited supply today and by 2024 it will be in short supply.
- A **manufacturer of veterinary products** who has installed six split air conditioners with 130 kW output to cool commission halls in 2022, a northern German **slaughterhouse** with a refrigeration system installed in 2022 for cooling slaughtered goods, as well as a Lower Saxony **district hospital** that installed water chillers to cool a new building with nine operating rooms, in the last two years, are facing the same problem.
- A similar scenario applies to the **tens of thousands of bakers, butchers and restaurateurs** who require refrigeration systems - most of these systems use F-gases and many of these still have a long service life. In the event of a loss of refrigerant, they could not be put back into operation. Systems with CO₂ as a refrigerant are many times more expensive in these performance ranges and are neither as economical nor as energy-efficient to operate. Until a replacement system could be installed, operations would have to be shut down, which could take weeks due to the delivery times and obtaining engineers or contractors to build or convert refrigeration systems.
- In 2018, a **large new Hamburg hotel** was awarded a prize for its energy efficiency due to its system concept which uses an F-gas system for cooling and heating. A replacement by a natural refrigerant is technically not possible, or, in fact, it would be the equivalent to

constructing a new building. In the event of a refrigerant loss in the system, the hotel would have to cease operations if the refrigerant required for maintenance is no longer available on the market.

- Tens of thousands of **air conditioning systems in hotels, medical practices, office buildings**, old people's homes, private apartments, etc. could no longer be operated in the longer term in the event of leaks from the systems if no refrigerant was available for servicing purposes.

Note: As a rule, refrigeration and air conditioning systems are hermetically sealed. Leaks can still occur due to the ageing of components, human error or accidental damage. After evaluating data from more than 200,000 systems with the industry software VDKF-LEC, the overall leakage rate is only 1.3%.

The above list could be expanded to include cases from countless other uses. Even if all the affected operators of refrigeration, air conditioning and heat pump systems were financially able to do so and if it were technically possible to convert the many systems to natural refrigerants, there is a **lack of capacity of engineers** to construct or convert these new and existing refrigeration and air conditioning replacement systems in the few years available to do so as allowed in the proposals.

Below you will find some of the currently known and possibly upcoming bans and restrictions as well as the current status of the dossiers:

Amendment of the F-Gas Regulation

The European Parliament's Environment Committee (ENVI) approved a proposal to amend the F-Gas Regulation on March 1st, despite concerns expressed by many industry organizations that the proposals are unrealistic, pose a risk to business and society and could jeopardize climate goals. This ENVI proposal will be voted on in the plenary session of the EU Parliament on 29 March 2023 and its approval can be expected. The European Council is still discussing the revision of the F-gas Regulation. If the EU Council agrees with the proposal expected to be passed by the EU Parliament, the new F-Gas Regulation is expected to come into force at the start of 2024.

Aside from a faster and larger reduction in the amount of refrigerant available in the EU, some of the proposed bans will have an immediate impact on operators of refrigeration, air conditioning and heat pump systems.

These include:

- A ban on new stationary refrigeration systems with F-gases from 2025
- A ban on monoblock and other self-contained air conditioning and heat pump units using F-Gases by 2026
- A ban on stationary split air conditioning systems and heat pumps with filling quantities of less than 3 kg of F-gas from 2027
- A prohibition of split air conditioners and heat pumps with F-gases with rated capacity below 12 kW from 2028
- A limitation of split systems with a nominal capacity between 12 kW and 200 kW to refrigerants with a GWP below 750 from 2028
- A prohibition of F-gases in split systems with a rated output of more than 200 kW from 2028
- A ban on the use of F-gases with a GWP > 150 for maintenance and service on stationary refrigeration systems (with the exception of chillers) from 2024
- A ban on the use of F-gases with a GWP > 2500 for maintenance and service on air conditioning systems, heat pumps and chillers from 2024
- Reprocessed or recycled F-Gases with a GWP < 2500 can be used for service purposes until the end of 2029

Proposed PFAS ban under the REACH regulation

In addition to the F-Gas Regulation, the EU chemicals regulation REACH could also make the future use of fluorine-containing refrigerants more difficult or even forbidden.

On February 7th, the European Chemicals Agency (ECHA) published the proposal to ban the manufacture, use and placing on the market of per- and polyfluoroalkyl substances (PFAS). According to the definition, most of the currently used F-gases also belong to the PFAS group of substances. Exceptions are R23, R32, R152a and R1132a. A decision by the European Commission on which parts of this proposal should be introduced into the REACH Regulation can be expected in 2025. According to the proposal submitted, after a transition period of 18 months, the PFAS ban would have the following effects:

- A ban on new systems (refrigeration, air conditioning and heat pump systems) with F-gases (i.e. around mid-2027). Exceptions are applications below -50 °C, car air conditioning systems, transport refrigeration (five years more time).
- The use of F-gases for maintenance and service of systems that were installed before the entry into force will still be permitted for a further twelve years.

Even if the full proposal does not become part of the REACH Regulation, you should prepare now for the possibility that in a few years or so, use of F-gases will be severely restricted or, in some cases, forbidden.

Contact

Christoph Brauneis

VDKF e.V., Kaiser Friedrich Straße 7, 53113 Bonn

phone: 01520 2006037, mail: @vdkf.de

VDKF – Association of German Refrigeration and Air Conditioning Specialists e.V.

Over 1,000 member companies from trade, industry and trade are organized in the VDKF and, with more than 20,000 employees, represent a sales volume of over 3.5 billion euros per year. Since 1962, the VDKF has been the leading German trade association for the refrigeration, air conditioning and heat pump industry and a partner of the refrigeration system construction trade.

www.vdkf.de

BIV – Federal Guild Association of the German Refrigeration Plant Builder Trade e.V.

The BIV takes care of the interests of the refrigeration plant engineering trade and supports its members in fulfilling their statutory duties. As a member of the ZDH, it helps shape the political framework for the trade and promotes the economic and social interests of the trade.

www.biv-kaelte.de

ZVKKW – Central Association for Cooling Air Conditioning Heat Pumps e.V.

The ZVKKW unites the entire value chain of the refrigeration, air conditioning and heat pump industry via its three pillars "Crafts", "Industry & Trade" and "Operators, Science & Education". www.zvkkw.de

Federal College of Refrigeration and Air Conditioning Technology

The Federal College for Refrigeration and Air-Conditioning Technology is the largest educational institution for the field of refrigeration and air-conditioning technology in Germany. For a good 50 years, master craftsmen, technicians, employees of specialist companies and trainees have been receiving training and further education at the Federal Technical College. The state guild of Hesse-Thuringia/Baden-Württemberg is responsible for the Federal Technical School.

www.bfs-kaelte.de