Westfalen

Comments on the Annec XV Restriction Report
- Confidential -

Introduction

Westfalen Austria GmbH acknowledges the efforts of the ECHA to regulate chemicals from the PFAS group and supports the planned restrictions insofar as they are reasonable and feasible from a technical, legal and economic viewpoint. However, we oppose the blanket ban on F-gases. The planned restriction of PFAS in the current restriction proposal will certainly have a significant negative impact on the refrigeration and air conditioning industry.
We are calling for:

- An exemption for F-gases used as refrigerants
- A perpetual exemption for the maintenance of existing plants using F-gases

Westfalen Austria GmbH offers a range of F-gases that are primarily used in the refrigeration and air-conditioning industry, some of which generate TFA as a decomposition product. These F-gases are often referred to as safety refrigerants, due to their non-toxic and non-flammable or difficult-to-ignite properties. Although it is known that TFA is suspected of being persistent, there remains insufficient concrete data on its environmental impact.

F-gas Regulation and Leakage Rate

F-gases are an integral component of almost all refrigeration and air-conditioning applications and play a central role in system-critical areas such as food production, energy production and medical supply. F-gases are already regulated by the F-gas Regulation (EU No. 517/2014), the phase-down of which covers all F-gases containing PFAS. The regulation is currently being amended. As a result of the requirements, emissions of F-gases have continuously decreased.

Industry, trades and consumers need planning certainty to install refrigeration systems and air conditioning units using F-gases, along with the corresponding investments. To ensure this planning certainty for industry, trades and consumers, the possibility of the PFAS restriction procedure and F-gas Regulation leading to contradictory and uncoordinated rules must be excluded.

The VDKF LEC industry software serves plant operators as recording and reporting software for refrigeration systems. The software records all repair and maintenance work on a refrigeration system, in particular refrigerant filling and leaks. By using the software, an operator fulfils their obligations under the F-gas Regulation and the Chemical Climate Protection Regulation (ChemKlimaschutzV). The software calculated an average leakage rate of just 1.12% in 2022 across all areas of application. The value has therefore shown ongoing decrease, by 65% since 2017. The planned tightening of the F-gas Regulation is expected to further reduce direct emissions from leaks.

Recovery of used refrigerants

It is also important to emphasise what happens when a refrigeration system reaches its end of life: the refrigerants are **consistently recovered**. After recovery, the refrigerants are processed and made available again to the industry. This ensures that emissions are kept as low as possible and the need for new refrigerants is minimised. We call for emissions to be reassessed, taking into account the recovery of F-gases. In the current proposal for a ban, there is no indication that the recovery of F-gases used as refrigerants has been included.

Effects of a complete ban

A ban on F-gases as proposed will have far-reaching consequences.
Existing refrigeration systems are designed to be operated with F-gases and cannot be switched to natural refrigerants for technical reasons. This means a complete replacement of the system is required. The actual

service life of refrigeration systems often extends well beyond the planned transition period of 13.5 years for existing systems. As a result, many of these plants, which are still functional and efficient, will be replaced under the new regulations. In the event of a malfunction, the situation becomes even more critical. As switching to natural refrigerants is not possible, in the event of a malfunction the entire system must be replaced immediately. Not only does this entail high costs, but downtimes are also longer**.** The likely downtimes are unacceptable, particularly **for critical infrastructure** such as medicine, food production and transport. It is technically impossible to convert the systems to a natural refrigerant at short notice.

Another scenario to consider is the precautionary decision of many operators to replace their equipment before malfunction occurs. Premature decommissioning of a functional refrigeration system is **not compatible with sustainability goals** and **the goals of the circular economy**. An unnecessary new investment, including decommissioning and disposal of an existing (technically faultless) refrigeration system represents an unacceptable burden on the environment and circular economy. In addition to the consumption of resources, emissions from new construction and the disposal of a functioning refrigeration system, as a rule there are no benefits in terms of indirect emissions due to the energy consumption. In some cases, the efficiency of a refrigeration system when used with natural refrigerants may in fact be worse than when used with F-gases.

Maintenance and service

The proposed 13.5 year transition period does not correspond to the typical service life of a refrigeration or air conditioning system, or a heat pump. Therefore, these systems must be serviced and maintained indefinitely. Otherwise, this would drive the complete replacement of systems or equipment and so not contribute to sustainability.

Natural refrigerants

Natural refrigerants are often presented as an environmentally friendly alternative to F-gases. In fact they are already used, where possible, in many applications today. But, as with any technology, there are pros and cons.

Natural refrigerants sometimes entail particular technical challenges.

Hydrocarbons: Hydrocarbons are characterised by high energy efficiency. Unlike F-gases, however, they are highly flammable. The refrigerant filling volumes of refrigeration systems are therefore limited, so restricting the maximum size of the system. There are also special conditions for the installation site, particularly in populated areas. In practice, additional safety measures must also be implemented for their operation.

Ammonia: Besides being flammable, ammonia is toxic. Ammonia can only be used in refrigeration technology with special safety precautions. For this reason, ammonia is only found today in locations where these requirements are met, such as in industry. Accidents involving ammonia refrigeration systems often have serious consequences. One example is the ammonia accident in Straubingen in 2019, in which 14 people were injured.

Carbon dioxide (CO_2): CO_2 is already being used where possible. However, the thermodynamic limitations of CO_2 mean it cannot be used in many applications. Furthermore, higher acquisition, operating and maintenance costs must be expected when CO_2 refrigeration systems are employed. In particular, higher energy costs due to its low energy efficiency must be taken into account at the location.

Social and economic impact

A ban on F-gases would have a significant direct impact on the business activities of Westfalen Austria GmbH. This applies not only to the business itself, but also to the employment of some 150 staff associated with the trade, logistics and filling of F-gases.

The 2022 UNEP report reasons that a ban on F-gases based on TFA concerns is not scientifically sound. Regulations should be based on well-founded science and real-world environmental data, and not on hypotheses. The role of F-gases in critical infrastructures and their low environmental impact must be considered in context. A ban implemented in haste would adversely impact not only the economy, but also the environmental concerns it seeks to protect.