



European Commission
Directorate-General for Climate Action,
Avenue de Beaulieu 24,
1160 Auderghem,
Belgium

30 March 2018, Brussels

RE: Comments to the third EU F-Gas Consultation Forum

Following the third EU F-Gas Consultation Forum, shecco would like to submit input that reflects some of the major concerns of the natural refrigerant industry in relation to the EU F-Gas Regulation. The information provided in the present letter was collected through exclusive interviews with individual companies and shecco's continuous market research on the uptake of natural refrigerants-based equipment in Europe.

This document is split in two parts, the first presenting key messages and the second addressing individual topics of concern for the natural refrigerants industry.

KEY MESSAGES

HFC bans: While the HFC phase-down is gradually having a more significant impact on the prices of high-GWP HFCs, ambitious bans on HFCs in new equipment such as the one for commercial refrigeration, give much clearer signal to the industry where they need to channel their investments. There is an opportunity to introduce or strengthen additional bans. Member States should take action to provide the necessary guidance for industry especially in split air-conditioning and heat pump sectors to avoid adoption of intermediary solutions based on medium-GWP solutions.

At the EU level, a ban on HFCs with GWP over 750 in split AC should be revised to GWP limit of 150. In addition, the EU should consider introducing additional HFC bans for new equipment in the head pump sector to avoid locking-in of HFCs in systems that are currently experiencing strong growth.

Standards and national codes: Safety standards on flammable refrigerants need to be updated urgently to allow a higher charge limit while ensuring safe use of hydrocarbons. The limits currently set do not reflect the potential of hydrocarbons-based equipment to contribute to the HFC phase-down. Member States should also update their national legislation impeding the adoption of hydrocarbons-based technology in public-access buildings.

Training on flammable refrigerants: Member States should set minimum training requirements on flammable refrigerants across the European Union. More refrigerants in use in Europe will be flammable due to the HFC phase-down. Minimum

training requirements on these refrigerants will both protect European citizens' safety, and boost the adoption of climate-friendly flammable refrigerants such as hydrocarbons.

1. Bans provide clear signal to industry to move away from high GWP HFCs

The HFC phase-down is the over-arching measure that will reduce HFCs placed on the market by 79% by 2030 (compared to average 2009-2012 levels). In 2017 it started having an impact on prices of HFCs, which are further increasing as a result of reduced HFC quotas in 2018. Nevertheless the phase-down alone does not give clarity to the industry which alternatives to adopt. A large number of HFC-based technologies, with lower global warming potential (GWP) are being tested and introduced in the market. These technologies are adopted as intermediary solution as in the long-term their GWP is still rather high. This is proving to be costly for manufacturers of equipment and components who are developing and testing products for a large array of refrigerants.

As it has been proven in case of commercial refrigeration, ambitious placing on the market prohibitions on high GWP HFCs are the most effective measure to drive the industry towards long-term technologies, avoiding intermediary and costly steps. Provided the **GWP targets are ambitious enough (lower than 150)**, HFC bans noticeably push the market away from HFCs. With a clear deadline and indication of what kind of technology will not be allowed in the market, companies can make timely investment decisions.

Before a possible introduction of such measures at the EU level, Member States should provide guidance to industry and consumers by introducing additional sector-specific bans and incentives.

- **Split air conditioning**

The ban on HFCs with a GWP higher than 750 for small split air conditioning is not sufficient to reach the HFC phase-down and does not create incentives for the industry to go towards the long-term HFC-free solutions. The market for R290-based portable air conditioning is already moving as a result of the ban. The split air conditioning subsector is, however, largely adopting R32.

A number of industry representatives that shecco interviewed stated that R32 is an intermediary solution, but there is currently lack of legislative push or other incentives to adopt a long-term HFC-free technology.

The Chinese industry is rapidly moving to R290-based split air conditioning technology. 20 room air conditioning (RAC) production lines have already been converted to R290 with production capacities of 6 million RAC units per year. Chinese manufacturer Midea Group announced on 14 March its All Easy Series R-290 residential single-split air conditioner received the German ecolabel "Blue Angel". The certification, owned by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, represents the highest standards for energy efficiency, health and environment-friendliness of home appliances. The group will conduct training programmes for European installers on R290 air conditioning technology and plans to start selling the products in the EU in the next year.

shecco believes that revising the GWP limit for small split AC to 150 (instead of current 750) would create the necessary legislative push to accelerate the transition of this sector to energy-efficient and future-proof solutions. This would help reach the objectives of the HFC phase-down and avoid locking in medium-GWP HFCs.

- **Heat pumps**

The heat pump sector in the European Union is growing quickly. There is a **risk HFC-based heat pumps will be adopted on a large scale** if no legislative pressure is set to adopt alternative refrigerants. Yet, HFC-free based heat pumps, such as units using R290, are already readily available on the European market.

While the HFCs used in heat pumps and, from 2017, also HFCs contained in imported pre-charged heat pumps must be accounted under the HFC quota system, there are no placing on the market restrictions.

In addition, **demand for heat pumps is largely driven by cost**. With no support from the regulatory side for HFC-free heat pumps, there is a risk consumers will go back to gas boilers due to the increasing refrigerant prices.

The European Union can step in with HFC bans to support the adoption of natural refrigerants-based heat pumps only. The reduction of high GWP refrigerants and energy emissions should be addressed in a complementary way. Supporting a wider uptake of natural refrigerants-based heat pumps would help achieve both the EU HFC phase-down as well as the EU's action towards climate targets.

Member states should provide financial incentives to support the adoption of natural refrigerants-based heat pumps and maximise their environmental benefit. Some EU countries such as France¹ already provide financial subsidies for domestic heat pumps. Nevertheless it is important to understand that supporting HFC-based heat pumps jeopardises the HFC phase down and any incentives for heat pumps should also consider the GWP level of refrigerants.

2. Update standards and codes to allow use of flammable refrigerants

- **Flammable refrigerants charge limit in the European Union**

The European Commission and Member States should closely monitor the progress of the standardisation request to the European Committee for Standardisation (CEN) and the European Committee for Electrotechnical Standardisation (CENELEC) to update technical specifications in standards that unnecessarily restrict the use of flammable refrigerants². The current standards assume worst-case scenarios in case of refrigerant leakage, and do not take mitigation measures into account.

At the international level, the International Electrotechnical Committee (IEC)'s subcommittee SC61C is revising the standard IEC 60335-2-89 for commercial refrigeration, to increase the charge limit for flammable refrigerants, including

¹ (In French) <https://www.quelleenergie.fr/economies-energie/pompe-chaleur-air-eau/credit-impot>

² European Commission, Commission Implementing Decision on a Standardisation Request to the European Committee for Standardisation and to the European Committee for Electrotechnical Standardisation as Regards Use of Flammable Refrigerants in Refrigeration, Air-Conditioning and Heat Pump Equipment (14 November 2017), C(2017) 7284 final, available at <http://ec.europa.eu/growth/tools-databases/mandates/index.cfm?fuseaction=search.detail&id=578>.

hydrocarbons. The draft amendment proposes to increase charge limit for propane to 500g (13 times lower flammability limit), from the current 150g level. In order to ensure safety, the draft amendment requires a minimum room area where the system can be placed and would have to pass the leakage test that will show the relative absence of flammable concentrations around the system, besides other construction requirements.

The European standardisation bodies should follow the international move to give clear guidance to the European industry and allow wider uptake of energy efficient HFC-free technologies.

The EU and national governments should closely monitor the process concerning the standardisation request as well as revision of relevant standards through participation in relevant committees and exchange with experts.

- **Restrictive national codes in public-access buildings**

In addition, **Member States need to urgently review their national codes** and standards to allow wider uptake of hydrocarbons. France, Italy and Spain are currently restricting the use of flammable refrigerants in public-access buildings. These Member States should reconsider the safety requirements set for hydrocarbons-based equipment in their national legislation.

These updates are also vital to bring HFC-free technology faster to market, as it will create confidence about the technology. Revising standards for flammable refrigerants would send a positive message to the industry that hydrocarbons-based equipment are safe to use.

A number of companies are considering introducing hydrocarbon-based technology in the EU, but the restrictions in some Member States, especially for air-conditioning applications, are delaying the progress.

3. Training on flammable refrigerants is key to achieve a safe and effective HFC phase-down

There are a number of initiatives to train technicians on natural refrigerant technology. However, industry representatives believe there is still lack of trained personnel, which is holding back a wider and accelerated uptake of natural refrigerants, especially hydrocarbons due to their flammability. **A way to solve this would be to set minimum training requirements for flammable refrigerants and centralise certification at the national level.**

Industry representatives also point out that some installers have a conservative attitude towards new technologies. This illustrates the **need to have a top-down approach, to make sure all technicians working with natural refrigerants are respecting the necessary safety measures.**

Standardising training for natural refrigerants across the EU, and monitoring effectively the number of trained technicians for safe handling of flammable refrigerants is also key to achieving the objectives of the F-Gas Regulation. Most companies train their own technicians only. Some provide training specific to their products, others provide more general training that is not specific to the company's equipment. The European Union should have a clear picture

of the current state of trained technicians on flammable refrigerants. This is even more important as more flammable refrigerants will be used due to the HFC phase-down.

To solve this issue, Member States could set **minimum training requirements for flammable refrigerants-based technology**. Training on flammable refrigerants, whether natural or not, is vital for an effective HFC phase-down, as more and more refrigerants in use will be flammable in the future.

In addition, **Member States should incorporate natural refrigerants trainings in national training schemes**. Natural refrigerants are key to achieve the HFC phase-down, and their safe handling should be addressed as a priority.

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