

EPEE Position – Recommendations for improvement of the F-Gas Regulation

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This paper does not cover EPEE's position on a potential international agreement on HFCs but is meant to identify opportunities to improve the current EU F-Gas Regulation.

Introduction

Two years after the entering into force of the F-Gas Regulation, countries that have implemented its measures such as France, Germany, Hungary, Sweden and the UK report a general reduction of leakage rates and thus of direct emissions due to more frequent leakage checks and service as well as improved technicians' skills.

The Netherlands, where a similar system (STEK) was already put in place in 1992, i.e. 15 years before the F-Gas Regulation entered into force, confirm the effectiveness of containment measures and report a reduction from an over 20% average annual leakage rate to a 3.5% annual leakage rate over the past years. Further benefits of the Netherlands' STEK system are reported to be:

- High awareness of installers and operators about the environmental impact of RAC & heat pump equipment
- Improved quality of RAC & heat pump equipment: Equipment manufacturers and installers increased the quality of both equipment and services
- Operators benefit from a higher reliability of their systems in terms of cost and energy savings as leak tight equipment and optimal refrigerant charge also result in higher energy efficiency
- Lower operational costs due to periodical professional checks including leak findings which require minor changes in the operating conditions but result in the prevention of major problems with the refrigeration system and thereby significantly reduce maintenance costs and direct refrigerant emissions as well as spare part use
- Higher quality education and training due to examination standard
- Real figures (refrigerant quantities used, emission figures) reported by STEK certified companies for the Government as a basis for further regulative measures.

It is important to note that approximately 5 years were required until the STEK system was fully understood by all actors and implemented. To achieve this, frequent controls (and penalties, when required) were applied by independent bodies and governmental authorities.

The Dutch STEK experience shows the difficulties of collecting reliable and representative data at an early stage of implementation. This applies as well to the F-Gas Regulation, especially because it has not been fully implemented yet in a number of Member States.

As a first step, and to create a solid basis to measure the impact of the F-Gas Regulation on emission reduction, EPEE therefore highlights the importance of Article 3 (6) of the F-Gas Regulation which enables the Commission **to request the records on the use of HFCs in the Member States**. These records could then be used to establish a solid basis for the analysis and review of the F-Gas Regulation. Given that this basis currently has to be

established, EPEE believes that it is too early to consider revisions to the Regulation in this respect.

Nonetheless, taking into account the current revision of the F-Gas Regulation, EPEE would recommend tackling the following issues in order to improve the effectiveness of the provisions of the existing F-Gas Regulation:

- **Improving awareness, surveillance and control to guarantee enforcement**
- **Broadening of the F-Gas Regulation's scope**
- **Recovery and reuse of HFCs**
- **Harmonization of certification**
- **Leakage rate targets**

Please find the key arguments for each of these points in the following paper. EPEE remains at your disposal for any further information.

Best regards,

Andrea Voigt
Director General

1. Awareness, surveillance and control to guarantee enforcement

As a priority, EPEE members call for better surveillance and control in the Member States, possibly with penalties in the case of non-compliance. EPEE would recommend that the Member States take a risk-based approach: i.e. focus efforts on awareness raising, compliance and log-book information on large users first (i.e. supermarkets and large buildings). Taking into account the current budget restrictions across the EU, EPEE believes that this would also be the most cost-effective approach.

According to the F-Gas Regulation, it is the operators' responsibility to ensure that logbooks are kept, that regular leakage checks are carried out and that companies working on their installation are certified. However, operators are often not aware of their obligations leading to a less stringent implementation of the Regulation. Installers, on the other hand, are generally well aware of the Regulation's requirements but might have difficulties in enforcing them due to the operators' lack of information.

EPEE therefore strongly recommends controls at operator level to raise awareness about the requirements of the F-Gas Regulation. This implies, among others, that:

- Control bodies with sufficient resources need to be assigned per Member State;
- Such supervisory bodies need to be trained in view of refrigeration and a/c equipment leakage control;
- Information campaigns are conducted on the operators' obligations, on controls of leakage and on potential fines in case of non-compliance to alert operators;
- EPEE welcomes initiatives such as those of the UK who have created "F-Gas Support" to promote compliance.

If, however, such controls are not possible on a wider basis – for example due to a lack of resources – an additional control mechanism based on the Dutch STEK system and targeting the installer level may help enforcing the requirements:

- Installer companies are controlled regularly (e.g. once every 18/24 months) related to their personnel (qualifications) and equipment to obtain the certification

- Installer companies are obliged to register the type, quantities and purpose (new filling, service, disposal) of refrigerants used.
- ⇒ Information campaigns will be required as well with this approach. However, the target group is reduced compared to end-users and easier to approach as there is already a higher level of awareness in the refrigeration and a/c sector.

2. Broadening of the F-Gas Regulation's scope

2.1. The retail channel

Currently, equipment is sometimes sold through retailers who do not always provide guarantees that the equipment is properly installed, whilst proper installation by certified installers is required under the F-Gas Regulation for all equipment which requires refrigerant piping connections

EPEE therefore recommends:

- To introduce adequate measures to ensure that equipment requiring interference with the refrigeration circuit for installations will only be installed by certified installers. Examples for such measures include:
 - Information duties: warnings "this product must be installed by a certified installer only"
 - Controls on retailers or other routes who subcontract installers: to keep a register of the installers they work with, and to prove that these installers obtained their certificates. Invoices to customers are also useful sources to go and check the installation etc.
 - Penalties at installer level to make sure that "non certified" installers are no longer operating on the market.

2.2 Mobile refrigeration equipment

Mobile refrigeration equipment is at the moment not covered by the F-Gas Regulation, although mobile refrigeration equipment generally contains more than 3 kg of HFCs.

EPEE therefore recommends:

- To expand the scope of the provisions under article 3, 4, 5 and 7 of the F-Gas Regulation in order to cover mobile refrigeration equipment used in refrigerated trucks (as already the case in France, the Netherlands and Spain), and urges the Commission to take the issue of mobile refrigeration in reefer containers, vessels and boats forward for discussions at the international level under UNFCCC and/or IMO.

The reasons:

- Generally, mobile refrigeration equipment contains more than 3 kg of HFCs. Nonetheless it is not covered by the F-Gas Regulation. However, leakages might occur as well in that type of equipment – even more so, as operating conditions are sometimes very difficult (vibrations, difficult to access, etc.). It seems therefore logical to apply the same requirements as in stationary equipment.

3. Recovery and re-use of HFCs

The requirement to recover, reclaim and re-use HFCs are not coherent with the current EU waste legislation, which makes it very complicated and costly for users to effectively do so.

EPEE therefore wants to highlight the following issues:

- If a user recovers HFC refrigerants, they are sometimes regarded as dangerous waste, thereby falling under numerous restrictions for cross border treatment and transport.

- The end of life of certain equipment containing F-gases could be better organized if it would be regulated under similar principles as the WEEE directive.

Possible solutions

- ⇒ EPEE believes that it would be highly beneficial to incentivize installers and operators to properly recover HFCs, for example by a deposit or fee system (for example to support the cost of destruction, as is the case in some Member States such as Poland).
- ⇒ The recovery, reclaim and re-use obligations of HFCs should be better enforced.
- ⇒ To revise the hazardous waste regulations to exempt the recovery and transportation of HFCs by certified operators and companies.

4. Harmonization

The current lack of harmonization and information on certification requirements and training of technicians and operators between the Member States is making it very complicated to operate (and employ) across borders.

EPEE therefore recommends:

- To make sure that the certification requirements of technicians and operators are harmonized in the EU-27 Member States. The cross border deployment of certified technicians would secure better employment and career opportunities, especially in periods of economic downturn. Currently, however, there are substantial differences between Member States and even on regional levels, which makes it difficult to compare and evaluate the certifications. We would like to point out that CEN TC182WG4 has developed a standard for qualification and certification of personnel handling refrigerants (HFCs and others) which can serve as a basis for mutual recognition. This standard is EN13313 and currently in final voting stage.

Possible solutions

- The EU to provide guidance to the Member States to set up training and certification programs, i.e. by harmonizing the CEN standard EN13313.
- The EU to publish – in a centralized way – information on the training and certification programs established in the Member States (the Member States already need to notify the Commission of their training and certification programs according to Art. 5.2 of the Regulation). EPEE believes that the data, know-how and practices from the Dutch STEK system on for example how to distinguish good installers would be very valuable for all Member States and that sharing this information through appropriate platforms and means would benefit the acceleration of the F-Gas Implementation.
- The compulsory registration, possibly in a central EU-wide database, of installers and contracting companies will make it easier for national inspection authorities to enforce the Regulation.

5. Leakage rates

EPEE strongly advocates a progressive reduced leakage rate. We have carefully considered different policy options to address the issue of leakage in a more stringent way under the revision of the F-Gas Regulation and feel that the most cost-effective and environmental beneficial option would be to focus leakage control efforts on systems which have the highest leakage risks.

Possible options to effectively reduce emission rates:

- To improve tightness of systems by harmonization of the standard EN378 and tightness of components and connections via harmonization of the standard EN15834 which is currently under preparation.

- To further improve monitoring and containment, the number of leakage incidents as well % quantity of charge lost should be measured. Also, an RCA (Root Cause Analysis) procedure should be a mandatory requirement if leakage rates exceed agreed guidelines.
- In order to have comparable data between Member States, EPEE recommends the development of a common EU methodology to determine “relative refrigerant loss” (average leakage rates) from systems with a refrigerant circuit. EPEE proposes the following methodology to be used:
 1. The calculation of “relative refrigerant losses” shall be based on the quantities charged & removed from the system – as noted down in the logbooks.
 2. Relative refrigerant loss” shall be based on “normal” operation conditions.
 3. Definitions:
 - “relative refrigerant loss” : the portion of the nominal refrigerant charge which was lost during normal operation conditions due to emissions over a period converted to 1 year, in proportion to the nominal refrigerant charge. The calculation of the relative refrigerant loss is based on the quantity of refrigerant which has been added to or removed from the system and which are noted in the logbook (record). For the purpose of the calculation, the quantities which were added or removed from the system in the previous 2 years can be taken into account, if they are known.
 - “nominal refrigerant charge” : the amount of refrigerant charged in a system for its functioning under the conditions for which is was designed; normally this is the amount which was charged at the first time of putting it into service.
 4. Proposed formula:

$$\left(\frac{\text{Kg of refrigerant added or removed (year "n")}}{\text{Kg of nominal charge}} + \frac{\text{Kg of refrigerant added or removed (year "n-1")}}{\text{Kg of nominal charge}} + \frac{\text{Kg of refrigerant added or removed (year "n-2")}}{\text{Kg of nominal charge}} \right)$$

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Note : quantities removed = negative value

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