

Fit for the phase-down: the main facts and figures of the new F-Gas Regulation

The European Union's climate and energy strategy with its so-called "20-20-20 targets" has resulted in a legislative package which aims among others to bring about a 20% reduction in greenhouse gas emissions by the year 2020. This is an ambitious undertaking that encompasses various specific measures. One of these refers to the use of partly fluorinated hydrocarbons or so-called F-gases. To minimise their impact on global warming, in April 2014 the EU Council adopted Regulation (EU) No 517/2014 on fluorinated greenhouse gases as the long-awaited revision of the F-Gas Regulation. New regulations such as the ban on refrigerants that have a particularly strong impact on the climate should help the EU to achieve its climate targets and promote the use of technologies in the refrigeration and air-conditioning branch which significantly reduce the environmental impact. Europe is thus setting new global standards for reducing CO₂ emissions. The revised F-Gas Regulation will be applied from 1 January 2015 onwards. But what does it mean in specific terms for manufacturers, system planners and operators? eurammon has put together the most important facts and background data.

Core elements of the revised F-Gas Regulation in detail

The targets of the revised F-Gas Regulation will be implemented with the following package of measures:

- Phase-down: The F-gases available on the market will be gradually reduced.
- Restrictions on use: F-gases that are particularly harmful to the climate will be gradually prohibited completely.
- Quota system: F-gas quotas will be allocated to the manufacturers and importers in order to control the actual consumption of F-gases.
- Leak tests: To avoid leakages, stricter regulations will apply in future to leak tests on refrigeration and air-conditioning systems.
- Extended operator obligations: Operators are responsible for ensuring that installation, maintenance, servicing, repairs or decommissioning is performed only by certified personnel.

Phase-down – gradual reduction in the available quantity of F-gas

The EU will be gradually reducing the permitted total quantity of F-gases as from January 2015. The reference point (100%) consists of the mean available quantity of F-gases available on the market in the period 2009 to 2012. Working on this basis, the total quantity available in the EU will be reduced to 21% in six stages through to 2030. In order to take account of the differing climate impact of the various refrigerants, the quantity of F-gas is stated in tonnes of CO₂ equivalents rather than an absolute value in kg. The CO₂ equivalent is easily calculated with the following formula: quantity of refrigerant in kg multiplied by the corresponding global warming potential (GWP).

2015	2016-17	2018-20	2021-23	2024-26	2027-29	from 2030
100 %	93 % (-7%)	63 % (-30%), first drastic reduction	45 % (-18%)	31 % (-14%)	24 % (-7%)	21 % (-3%)

Restrictions on use – prohibition of certain F-gases with high GWP

From 2020 onwards, stationary systems may no longer use refrigerants with a GWP > 2,500. This also applies to the maintenance of plants with a new refrigerant having more than 40 t CO₂ equivalent – which corresponds approximately to about 10 kg filling of R404A and R507A. The only exemptions are systems in military use and systems that cool products to temperatures below -50 °C. Existing systems may still be operated through to 2030 and refilled, but only with recycled F-gases. In a second stage, from 2022 refrigerants in “multipack centralised refrigeration systems” (at least two compressors, a number of cooling devices and a refrigerating capacity of more than 40 kW) are permitted to have only a GWP < 150. Excluded from this is the primary refrigerant circuit in cascade systems in which F-gases may be used with a GWP <1500.

Quota system – allocated quotas for more control

In order to control refrigerant consumption, refrigerant manufacturers and importers will be allocated F-gas quotas on submitting a corresponding application. Quantities will be distributed according to the following key: altogether 89% of the total quantity will be shared out among existing market participants with the remaining 11% reserved for possible increased demand and new entrants. Also, pre-charged systems being imported into the EU will fall under the quota system from 2017. The quotas can be freely traded on the market in the same way as emission rights. The companies are obliged to submit reports on their actual F-gas consumption. The only exemptions from the quota system are production

outputs of manufacturers or importers with less than 100 tonnes of CO₂ equivalent, military systems or applications for which no demonstrably suitable technical alternatives are available up to now. In addition to these core elements the F-gas Regulation implies further details which need to be considered.

Leak tests – more frequent and more precise checks

The new F-Gas regulation stipulates stricter and more frequent leak checks to minimise leakage in the systems. Hitherto the cycle of checks was defined by the metric quantity of refrigerant in kg. In future, the checking frequency depends on the quantity in tonnes of CO₂ equivalent. Regular checks are prescribed already from a refrigerant charge of more than 5 tonnes of CO₂ equivalent. The plan is to halve the checking frequencies if the systems have a leak detection system that informs the operator automatically in the event of any leakage:

Charge in t CO ₂ equivalent	Frequency of checks	Frequency of checks with leak detection system
5 t to < 50 t	every 12 months	every 24 months
50 t to < 500 t	every 6 months	every 12 months
≥ 500 t	every 3 months	every 6 months

Extended operator obligations: more responsibility and mandatory certification

With effect from 1 January 2015, system operators face considerably more obligations. They bear full responsibility for ensuring that installation, maintenance, servicing, repairs or decommissioning are performed only by certified personnel or certified companies. However, up to now no pan-European standard system exists with clear guidelines for certification. Moreover, operators are responsible for heeding future prohibitions on use – such as the guidelines for charging their systems, and for complying with prohibitions on buying and selling.

In case of doubt, the German-language original should be consulted as the authoritative text.

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