

Information Paper

# **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, relating to the the phase-down and restricted use of refrigerants that have a particularly strong impact on global warming should help the EU to achieve its climate targets. They also help promote the use of technologies in the refrigeration and air-conditioning sectors which significantly reduce the environmental impact, ensuring Europe is setting new global standards for reducing  $CO_2$  emissions. The revised F-Gas Regulation has been in operation since 1 January 2015. What does this mean 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:

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



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

The EU started reducing the permitted total quantity of F-gases sold within the member states 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  $CO_2$  equivalents rather than an absolute value in kg. The CO<sub>2</sub> 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	ab 2030
100 %	93 % 7% reduction	63 % (-44% reduction)* first drastic reduction	45 % (60%)*	31 % (72%)*	24 % (79%)*	21 % (81%)*

\* Percentage values in brackets show the effective consumption reduction (CO<sub>2</sub> equivalent) including the refrigerant consumption to be considered from 2017 on for pre-charged equipment imported into the EU (determined with 12% on basis of the quantity of 2015).

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

From 2020 onwards, refrigerants with a GWP > 2,500 will no longer be permitted in stationary systems. This also applies to the maintenance of plants with virgin refrigerant having more than 40 t CO<sub>2</sub> equivalent – which corresponds approximately to about 10 kg charge of R404A and R507A. The only exemptions are systems in military use and systems that cool products to a temperature below -50 °C. Existing systems may still be operated through to 2030 and refilled, but only with processed or recycled F-gases. In a second stage, from 2022 refrigerants in multiple centralised refrigeration systems (at least two compressors, several cooling points and a refrigerating capacity of more than 40 kW) must use refrigerants with 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 as follows:89% of the total quantity will be shared out among existing market participants and the remaining 11% reserved for new market entrants. Also, pre-charged equipment 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  $CO_2$  equivalent, military systems or applications for which it can be demonstrated that no 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 tests to minimise leakage in the systems. The previous testing requirements were based on a system's metric quantity of refrigerant in kg. The new regulation stipulates test frequency based on the quantity of refrigerant in tonnes of  $CO_2$  equivalent. Regular tests are already prescribed from a refrigerant charge of more than 5 tonnes of  $CO_2$  equivalent. The plan is to halve the test frequency if the systems have a leak detection system that informs the operator automatically in the event of any leakage:

Charge in t CO <sub>2</sub> equivalent	Control cycle	Control cycle with leak detection system
5 t to < 50 t	every 12 months	every 24 months
50 t to < 500 t	every six months	every 12 months
≥ 500 t	every three months	every six 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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