

New F-Gas Regulation

On April 14, the European Union (EU) adopted the revised F-Gas regulation that, by 2030, will reduce fluorinated greenhouse gas (F-gas) emissions by 79% from today's levels. The regulation will replace the older law with ambitious measures ensuring the EU's global leadership in phasing-down of HFCs. The new regulation foresees the introduction of HFC bans in certain sectors affecting air-conditioning and refrigeration products.

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New F-gas Regulation from 2015

The new F-gas Regulation No 517/2014 was adopted by the Council of the European Union mid-April as final step on a long way of policy development. The new regulation was published on 20th May in the Official Journal of the European Union, entered into force on 9th June and will apply from 2015 onwards, replacing the older, ineffective version with new and ambitious measures:

- **Limiting the total amount** of the most important F-gases that can be sold in the EU from 2015 onwards and phasing them down in steps to one-fifth on today's values by 2030. This will be the main driver of the move towards more climate-friendly technologies;
- **Banning the use of F-gases in many new types of equipment** where less harmful alternatives are widely available, such as air-conditioning, commercial and industrial refrigeration or windows;
- **Placing on the market bans** on HFCs of certain products and equipment;
- **Ban on servicing and maintaining refrigeration equipment** with HFCs with >2,500 Global Warming Potential (GWP) as of 2020 (the use of recycled and reclaimed gases will be allowed until 2030);
- **Preventing F-gas emissions** from existing equipment by requiring checks, proper servicing and recovery of the gases at the end of the equipment's life.

It is expected that thanks to the regulation, the EU's F-gas emissions will be cut by two-thirds by 2030 compared to 2014 levels. The European Commission estimates cumulative emissions savings of 1.5 billion tonnes of CO₂-equivalent by 2030 and five billion tonnes by 2050 – this latter figure representing more than the emissions from one billion return flights between Paris and New York.

EC preparatory studies showed that, though ambitious, this reduction is achievable at relatively low cost because climate friendly alternatives are available for many of the equipment in which F-gases are commonly used today.

Table 1. State of technology in some AC and refrigeration sectors.

Sector	Conventional F-gas technology	Established alternative technology
Stationary AC	<ul style="list-style-type: none"> • HCFC-22 • R410A, R407C • HFC-134a (chillers) • R404A (chillers) 	<ul style="list-style-type: none"> • R290 (room AC, chillers, heat pumps) • R717 (large chillers) • R744 (heat pumps)
Industrial refrigeration	<ul style="list-style-type: none"> • HCFC-22 • R404A, R407C 	<ul style="list-style-type: none"> • Ammonia (R717) • Ammonia and CO2 cascade
Commercial refrigeration		
Centralized systems	<ul style="list-style-type: none"> • HCFC-22 • R404A, R407C • HFC-134a 	<ul style="list-style-type: none"> • R744 in LT-cascade systems • R744 for MT and LT • R290, R1270 or R717 with secondary loop systems, sometimes R744 LT cascade systems
Condensing units	<ul style="list-style-type: none"> • HCFC-22 • R404A, R410A • HFC-134a 	
Stand alone units	<ul style="list-style-type: none"> • CFC-12 • HFC-134a • R404A 	<ul style="list-style-type: none"> • R744 for a ice cream freezers and beverage vending machines • HC (hydrocarbon, mainly R290, sometimes R600a) for bottle coolers and LT cabinets, etc.

Source: Preparatory study for a review of Regulation (EC) No 842/2006 on certain fluorinated greenhouse gases.

HFC bans in new equipment

HFC bans will likely to have the most direct and immediate effect on speeding up the transition to climate friendly alternatives and innovative products. Bans on HFCs in new equipment include the following air-conditioning, commercial and industrial refrigeration sectors and buildings related products:

- ✓ Non-refillable containers for HFCs for refrigeration, air-conditioning or heat-pump equipment – as of 2017;
- ✓ Movable room AC, hermetically sealed (GWP \geq 150) – as of 2020;
- ✓ Split AC containing $<$ 3 kg of HFCs (GWP \geq 750) – as of 2025;
- ✓ Refrigerators and freezers for commercial use, hermetically sealed – with GWP \geq 2,500 – as of 2020, with GWP \geq 150 – as of 2022;
- ✓ Stationary refrigeration equipment (expect that designed to cool below -50°C (GWP \geq 2,500) – as of 2020;
- ✓ Multipack centralised refrigeration systems for commercial use with capacity \geq 40 kW with GWP \geq 150 – as of 2022, except in the primary refrigerant circuit of cascade systems where f-gases with a GWP $<$ 1,500 may be used;
- ✓ Windows for domestic use that contain fluorinated greenhouse gases – as of 2007;
- ✓ Other windows that contain fluorinated greenhouse gases – as of 2008.

The bans don't apply to equipment which, during its life cycle, showed greater energy efficiency with lower CO₂ emissions than those in HFC-free systems, by applying the eco-design requirements contained in Directive 2009/125/EC.

Leak checking regime extended

The containment measures based on regular leak checking have been extended and now cover also stationary refrigeration, air-conditioning, heat pumps, and fire protection systems. To reinforce the climate impact the frequency of leak checks will be based on global warming potential in CO₂ equivalents rather than tonnes of F gas. This will potentially bring more equipment into the leak checking regime which is designed to encourage a switch to lower GWP alternatives.

EU leading role in global HFC phase-down

The new Regulation will also have a global impact by anticipating a global phase-down of the consumption and production of hydrofluorocarbons (HFCs) on the

basis of proposals currently being discussed under the Montreal Protocol on protecting the ozone layer.

“Increased EU demand for alternative technologies is likely to spur innovation and economies of scale in other markets too, hence reducing the costs of a global phase-down of HFCs.” – said EU Climate Commissioner Connie Hedegaard in the debate on F-Gas in the European Parliament. “This is crucial because, unless other major economies follow Europe's lead, global production and consumption of these extremely powerful greenhouse gases will continue to grow. The swift and effective implementation of the EU regulation as of 2015 will prove that ambitious measures on HFCs are feasible. With this domestic legislation, the EU has gained global leadership on this issue, and we are prepared to use this role in order to make progress at international level too.”

While confirming the EU's position as a global leader in taking strong measures on F-gases, the new legislation is also meant to inspire others to take action. A number of countries are already developing similar approaches. Tackling HFC emissions is a priority of the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC), of which the Commission is a member. Similarly, the G20 countries have recognised the need to act on HFCs.

Market effects and new requirements for producers

The Regulation will affect endogen and global markets, in particular countries exporting to the EU. Through increased demand for climate-friendly technologies, the new Regulation creates new business opportunities and will accelerate innovation and economies of scale in producing such technologies, thus lowering their costs.

Companies will be allocated quotas that limit future sales of HFCs, as first step in preparing a phase-down of HFCs in the EU. To clarify the procedure to be followed by new entrants to become eligible to receive quota, the European Commission published a ‘Notice to producers and importers of HFCs and to new undertakings intending to place HFCs in bulk on the market in the European Union’ on May 21. The complete notice is available in all EU languages in the Official Journal of the EU.

The formal notice describes the process for registering with the new HFC Registry. This is required both for companies that have legally reported production or imports in the period 2009–2012 (‘reporting companies’) as well as for ‘new entrants’ to the market that have not done so.

References:

REGULATION (EU) No 517/2014 on fluorinated greenhouse gases.

Notice to producers and importers of hydrofluorocarbons and to new undertakings intending to place hydrofluorocarbons in bulk on the market in the European Union in 2015 (2014/C 153/07).

Preparatory study for a review of Regulation (EC) No 842/2006 on certain fluorinated greenhouse gases.

EC F-gas website: http://ec.europa.eu/clima/policies/f-gas/legislation/index_en.htm.

European Parliament debate on Fluorinated greenhouse gases (debate), Tuesday, 11 March 2014, Strasbourg.

Reporting companies will be given reference values based on their historic data. New entrants will have to declare their need for quota to the European Commission, which will allocate quotas on a pro rata basis until no more quotas are available. For reporting companies and new entrants alike, 1 July 2014 is the deadline for registration and 2015 quota applications, using the appropriate forms.

Further legislative steps

While the new Regulation repeals the original Regulation from 2006, the 10 implementing Regulations adopted under the original Regulation remain in force and continue to apply until new acts are adopted.

Currently the necessary new implementing acts are being prepared to render the Regulation properly applicable by January 2015. Official information can be obtained through the European Commission's website: http://ec.europa.eu/clima/policies/f-gas/index_en.htm

The new F-gas Regulation No 517/2014 is available online in the Official Journal of the EU: <http://eur-lex.europa.eu> ■

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