

Manual of European Environmental Policy

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This section is the text of the Manual as published in 2012. It is therefore important to note the following:

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Fluorinated greenhouse gases

Formal reference	
Regulation (EC) No 842/2006 (OJ L161/1 14.6.2006)	Regulation on certain fluorinated greenhouse gases
Proposed 11.08.2003 – COM(2003)492	
Directive 2006/40/EC (OJ L161/12 14.6.2006)	Directive relating to emissions from air-conditioning systems in motor vehicles and amending Council Directive 70/156/EEC
Proposed 11.08/2003 – COM(2003)492	
Legal base (Regulation)	Articles 192 and 114 TFEU (originally Article 175(1) and 95 TEC)
Legal base (Directive)	Article 114 TFEU (originally Article 95 TEC)
Binding dates (Regulation)	
Entry into force	6 July 2006
Applies with effect (most provisions)	4 July 2007
Applies with effect (Article 9 and Annex II)	4 July 2006
Commission report on application of the Regulation	31 December 2007
Commission Decision whether to amend the Regulation to include stationary air conditioning and mobile refrigeration	31 December 2008
Commission to publish a full report on the adequacy of the Regulation and any needed additional policy measures (Directive)	4 July 2011
Entry into force	6 June 2006
Member States to apply restricted type approval	1 January 2011
Member States to prohibit all sale of relevant systems	1 January 2017
Commission to adopt measures in Articles 4 and 5	4 July 2007
Commission review report	4 July 2011

Purpose of the Regulation and the Directive

These two pieces of legislation, originally proposed together, aim to curb emissions of fluorinated greenhouse gases (F-gases), which are included in the basket of gases covered by the Kyoto Protocol. Perfluorocarbons (PFCs), hydrofluorocarbons (HFCs) and sulphur hexafluoride (SF₆) are used as refrigerants, solvents, aerosol propellants and many other things. By far the main set of substances at issue are HFCs, used mainly in cooling equipment, including automobile air conditioning. HFCs were introduced as a replacement

for chlorofluorocarbons (CFCs) and to some extent for hydrochlorofluorocarbons (HCFCs), which are being phased out under the Montreal Protocol because they damage the ozone layer.

Summary of the Regulation and the Directive

The Regulation focuses on containment and improved handling of refrigerants, with limited marketing and use restrictions in other minor applications. The Directive phases out gases in mobile air conditioning (MAC) that have global warming potentials (GWPs) above 150, which eliminates the current substance used globally, HFC-134a (with a GWP of 1,300). The requirements under the Regulation include the following:

- Containment: an obligation to use all measures that are ‘technically feasible and do not entail disproportionate cost’ to prevent leakage and repair any detected leakage.
- Inspection: by certified personnel, annually for systems with 3 kg or more, more frequently for larger systems, less frequently for hermetically sealed systems.
- Leakage detection systems: for equipment with charges over 300 kg.
- Record keeping: of F-gases installed, added or recovered during maintenance, servicing and final disposal.
- Recovery: of F-gases at end of life ‘to the extent that it is technically feasible and does not entail disproportionate cost’.
- Labelling: F-gases containing equipment shall have the substance identified on the equipment.
- Training and certification: programmes are required, and personnel will have to be trained.
- Reporting: producers, importers and exporters who handle over 1 tonne/year have to report quantities handled.
- Control of use, that is bans: on the use of SF₆ in magnesium die-casting from 2008, except in small installations; on the filling of tyres with SF₆.
- Placing on the market, that is bans: on F-gases in non-refillable containers; directly emitting refrigeration (e.g. ‘self-chilling cans’); PFCs in fire protection; F-gases in windows, footwear, tyres, and gap-filling ‘one-component’ foams (except where required by safety standards); and HFCs in novelty aerosols (e.g. ‘fake snow’, ‘silly string’). All of these on different time scales.

Requirements under the Directive include the following:

- The Commission must agree a harmonized leak detection test.
- Within 12 months of adoption of a leak test or 1 January 2007, whichever is later, Member States may not grant type approval to vehicles containing refrigerants with GWP greater than 150, with leakage over 40 or 60 g/year for a double evaporator system.
- Member States must grant type approval to those vehicles using and passing that test.
- Within 24 months of the adoption of the leak test or 1 January 2008, whichever is later, all vehicles, not just new vehicle types, must meet the leakage limit.
- Starting 1 January 2007, Member States may not grant type approval for vehicles with refrigerants above 150 GWP.

- On 1 January 2011 all vehicles must not have refrigerants above 150 GWP.
- Retrofits are limited in a similar manner.

Development of the Regulation and the Directive

Limits on use of fluorinated gases have a long history, because CFCs and HCFCs are being phased out under the [Montreal Protocol](#). Regulation (EC) No [2037/2000](#) is the most recent EU legislation on the elimination of these substances, and is noteworthy for its accelerated HCFC phase-out. HFCs are largely replacements for CFCs and HCFCs, but are also included in the [Kyoto Protocol](#) basket of greenhouse gases, so the vigorous discussion between government, industry and environmental stakeholders moved from the ozone context to the climate context. Because so many different applications are touched by the issue, and because industry is having to digest the phase-out of ozone-depleting substances, there have been rancorous technical arguments for and against HFC use.

Among the many stakeholder consultation groups of the European Climate Change Programme ([ECCP](#)) in 2000, was a fluorinated gases sub-group of the Industry working group¹. This subgroup primarily included representatives of the many industries producing or using fluorinated gases. They recommended a framework Directive promoting ‘containment’ (e.g. avoiding leakage) of F-gases, with limited marketing and use restrictions, coupled with voluntary agreements and some form of support to alternative (non-F-gas) substances. This idea was originally transformed by the Commission to a plan to amend the ozone Regulation (EC) No 2037/2000, ostensibly as part of an initiative to reduce the proliferation of legislation. Industry balked at linking HFCs to any kind of phase-out, which is the goal of the ozone Regulation, and some Member States similarly found Regulation (EC) No 2037/2000 a less than ideal model due to its rather difficult implementation requirements. As a result, a freestanding Regulation emerged as the Commission proposal in August of 2003 (COM(2003)492).

Parallel but separate from the ECCP working group was a process focussed on limiting emissions of HFC-134a in MAC systems. Following expert consultations and a major stakeholder event, closely coordinated with the United States Environmental Protection Agency, the Commission moved quickly to propose a phase-out of HFC-134a from 2008, using a tradable quota scheme. Although this flexibility was considered by the Commission to be a clear benefit to industry, automobile manufacturers complained that they did not understand it. They were furthermore concerned that the main alternative to HFC-134a, trans-critical CO₂ systems, were not yet commercialized. A close alliance of the car industry, air conditioning manufacturers and the fluorocarbon industry worked to discredit CO₂ as an alternative due to supposed concerns about cost, efficiency, and potential availability on the market (contested by CO₂ proponents). Nevertheless, once proposed, the phase-out was not seriously contested as such, but the dates were delayed, and it was limited to substances with GWPs higher than 150, allowing a potential synthetic substitute with a GWP of 120, HFC-142a, to be permitted. The text of the MAC Directive was proposed together with the Regulation and considered in parallel.

Most discussion was reserved for the Regulation, however. The rapporteur for the first reading in the European Parliament (Robert Goodwill, EPP, United Kingdom) proposed a number of changes to the Commission's proposal, none of which were particularly consequential in the non-MAC sections. During the debate in Parliament's Environment

Committee, there were two major areas of discussion: first were amendments to introduce new restrictions under ‘Annex 2’ of the Regulation, which deals with phase-outs; although some votes were very close, no amendments were passed. Second was a significant objection to the use of an internal market legal base, Article 95 of the EC Treaty, instead of Article 175, environment. The impact of the former would be to eliminate the option of Member States to enact national regulations more stringent than the EU Regulation, which is what Denmark and Austria had already done; they would see their legislation overturned. The Environment Committee voted for a dual legal basis as a compromise, in April 2004. However, the plenary opted to continue with the internal market in its vote at the end of March. Subsequently, the Council legal service argued that a single environment legal base was appropriate, and environmental NGOs and the Member States Denmark, Austria and Sweden continued to argue for this option. In Council discussions in October of 2004, the dual legal basis was reintroduced as a compromise, and the MAC section was split into a separate legislative effort – an amendment to the vehicle type approval Directive [70/156/EEC](#), as amended by Directive [92/53/EEC](#).

Parliament began its second reading in the autumn of 2005, following a report by MEP Avril Doyle (EPP, Ireland). Her report and the subsequent Environment Committee vote were a surprise in particular to industry lobbyists who had seen their preferred version of the legislation put forward from conception through the first reading. A range of amendments now expanded marketing and use restrictions to foams, aerosols, refrigeration and air conditioning of different sizes, and shifted the legal basis to Article 175. Following a major lobbying effort, the Parliament plenary vote, in a highly unusual move, reversed all of the Committee's important amendments, returning the document largely to its previous form.

Conciliation was completed on 31 January 2006, and the Parliament approved the final version on 6 April 2006. The Regulation and Directive entered into force on 4 July 2006 and most provisions of the Regulation took effect on 4 July 2007.

Implementation of the Regulation and the Directive

Information on the measures taken by the Member States to transpose Directive 2006/40/EC can be found in their national [execution measures](#).

Pursuant to the terms of the Regulation, several subsequent Regulations were passed to enact some of the more detailed requirements:

- Commission Regulation (EC) No [1494/2007](#) of 17 December 2007 establishing, pursuant to Regulation (EC) No 842/2006 of the European Parliament and of the Council, the form of labels and additional labelling requirements as regards products and equipment containing certain fluorinated greenhouse gases.
- Commission Regulation (EC) No [1493/2007](#) of 17 December 2007 establishing, pursuant to Regulation (EC) No 842/2006 of the European Parliament and of the Council, the format for the report to be submitted by producers, importers and exporters of certain fluorinated greenhouse gases.
- Commission Regulation (EC) No [1497/2007](#) of 18 December 2007 establishing, pursuant to Regulation (EC) No 842/2006 of the European Parliament and of the Council, standard leakage checking requirements for stationary fire protection systems containing certain fluorinated greenhouse gases.

- Commission Regulation (EC) No [1516/2007](#) of 19 December 2007 establishing, pursuant to Regulation (EC) No 842/2006 of the European Parliament and of the Council, standard leakage checking requirements for stationary refrigeration, air conditioning and heat pump equipment containing certain fluorinated greenhouse gases.
- Commission Regulation (EC) No [303/2008](#) of 2 April 2008 establishing, pursuant to Regulation (EC) No 842/2006 of the European Parliament and of the Council, minimum requirements and the conditions for mutual recognition for the certification of companies and personnel as regards stationary refrigeration, air conditioning and heat pump equipment containing certain fluorinated greenhouse gases.
- Commission Regulation (EC) No [304/2008](#) of 2 April 2008 establishing, pursuant to Regulation (EC) No 842/2006 of the European Parliament and of the Council, minimum requirements and the conditions for mutual recognition for the certification of companies and personnel as regards stationary fire protection systems and fire extinguishers containing certain fluorinated greenhouse gases.
- Commission Regulation (EC) No [305/2008](#) of 2 April 2008 establishing, pursuant to Regulation (EC) No 842/2006 of the European Parliament and of the Council, minimum requirements and the conditions for mutual recognition for the certification of personnel recovering certain fluorinated greenhouse gases from high-voltage switchgear.
- Commission Regulation (EC) No [306/2008](#) of 2 April 2008 establishing, pursuant to Regulation (EC) No 842/2006 of the European Parliament and of the Council, minimum requirements and the conditions for mutual recognition for the certification of personnel recovering certain fluorinated greenhouse gas-based solvents from equipment.
- Commission Regulation (EC) No [307/2008](#) of 2 April 2008 establishing, pursuant to Regulation (EC) No 842/2006 of the European Parliament and of the Council, minimum requirements for training programmes and the conditions for mutual recognition of training attestations for personnel as regards air-conditioning systems in certain motor vehicles containing certain fluorinated greenhouse gases.
- Commission Regulation (EC) No [308/2008](#) of 2 April 2008 establishing, pursuant to Regulation (EC) No 842/2006 of the European Parliament and of the Council, the format for notification of the training and certification programmes of the Member States.

In September 2011, the Commission published a report ([COM\(2011\)581](#)) reviewing Regulation (EC) No 842/2006 as required under Article 10 of the Regulation. The review evaluated the application and effects of the current rules and assessed the need for further action to reduce emissions of fluorinated gases in the EU. The analysis identified some shortcomings in the current application of some of the key provisions of the Regulation, in particular training and certification, containment, and recovery provisions. The Commission concluded that the regulation has already helped the EU and its Member States to be on track with their commitments under the Kyoto Protocol and further than, if all the current provisions were to be fully applied in all Member States, the Regulation together with the MAC Directive, would make it possible to avoid almost half of projected emissions by 2015, stabilising the EU-27 emission reductions at today's levels of 110 million tonnes of CO₂ eq. The Commission therefore stressed the importance of the Member States rapidly intensifying their efforts to implement and enforce the Regulation properly. At the same time the

Commission concluded that in the context of the overall EU objective to cut emissions by 80-95 per cent by 2050, the stabilisation of F-gas emissions at today's levels is not adequate.

In consequence, the Commission opened a new consultation in October 2011, on the types of measures that would enable the EU to reduce fluorinated greenhouse gas (F-gases) emissions. The consultation closed in December 2011.

Enforcement and court cases

No cases concerning Directive 2006/40/EC or Regulation (EC) No 842/2006 have been concluded by the European Court of Justice.

Related legislation

There are a number of other EU Directives that have a strong interaction with the Regulation of fluorinated greenhouse gas:

- Decision [280/2004/EC](#) concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol.
- Regulation (EC) No [2037/2000](#) on substances that deplete the ozone layer.

Reference

1 CEC, European Climate Change Programme, Commission webpage, http://ec.europa.eu/clima/policies/eccp/index_en.htm