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EC Regulation No 842/2006 on Certain Fluorinated Greenhouse Gases

UK Government, Scottish Executive, National Assembly for Wales Initial Guidance

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Llywodraeth Cynulliad Cymru
Welsh Assembly Government

dti

SCOTTISH EXECUTIVE

defra
Department for Environment Food and Rural Affairs

Department for Environment, Food and Rural Affairs
Nobel House
17 Smith Square
London SW1P 3JR
Telephone 020 7238 6000
Website: www.defra.gov.uk

Information about this publication and further copies are available from:

Andy Smith
Global Atmosphere Policy
Room 3/A3
Defra
Ashdown House
123 Victoria Street
London SW1E 3DE
Email address: fgas@defra.gsi.gov.uk

This document is also available on the Defra website.

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Website links

Defra climate change website:
http://www.defra.gov.uk/environment/climatechange/index.htm

Defra f gas website:
http://www.defra.gov.uk/environment/climatechange/internat/fluorinated.htm

DTI f gas website:
http://www.dti.gov.uk/innovation/sustainability/fgases/page28889.html

ISO 14520 standard for fire protection:
http://www.iso.org/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=23938

Contact page for European Commission's DG Environment's "Climate Change" Directorate
http://www.europa.eu.int/comm/environment/ozone/contact_us.htm

EC F gas Regulation text
http://europa.eu.int/eur-lex/lex/JOHtml.do?uri=OJ:L:2006:161:SOM:EN:HTML

The Scottish Executive Web site:
http://www.scotland.gov.uk/Topics/Environment/Climate-Change/16327/4825

The Welsh Assembly Government website:
http://new.wales.gov.uk/topics/environmentcountryside/epq/climate_change/?lang=en

1. INTRODUCTION

The objectives of the Regulation
The principal objective is to contain, prevent and thereby reduce emissions of F gases covered by the Kyoto Protocol. This Regulation will make a significant contribution towards the European Community's Kyoto Protocol target by introducing cost-effective mitigation measures and to prevent distortion of the internal market.

The main focus is on containment and recovery of F gases, together with harmonised restrictions on the marketing and use of F gases in applications where containment of F gases is difficult to achieve or the use of F gases is considered inappropriate and suitable alternatives exist.

This guidance
Key obligations in the Regulation will apply in the UK and the rest of the EU from 4 July 2007. The Government[1] is continuing to work with stakeholders to ensure that the F gas Regulation is successfully implemented and its environmental objectives achieved. This initial framework guidance is a key part of that work and has been developed in discussion with stakeholder groups. The guidance will be updated as necessary, including in the light of progress of the work of the F gas Regulatory Committee (see section on article 12).

The sectors affected
The containment and recovery articles in the Regulation will have an impact on the commercial refrigeration, air-conditioning and heat pump sectors and in the fire protection sector; and for the personnel involved in the installation, servicing and recovery of F gases from these systems as well as from equipment containing fluorinated greenhouse gas based solvents, high voltage switchgear and fire extinguishers. Operators of relevant systems will have a range of obligations including prompt leakage repair, leakage checking and record keeping and ensuring appropriately qualified personnel are used.

However, this Regulation will potentially also have an impact on a wider range of f gas uses due to the recovery obligation provided for in Article 4.3, (see section 5 on Recovery).

The Regulation will also impact on producers, importers and exporters of F gases if they produce, import or export more than 1 tonne of F gases per annum as they will have to report to the Commission and Member States' competent authorities on the amounts produced, imported or exported.

[1] For the purposes of this document, further references to Government should be taken to mean the UK Government, Scottish Executive and Welsh Assembly Government. Defra and DTI are the lead Government Departments in England.

In addition, specified products and equipment that contain F gases will be subject to labelling requirements and specific uses of F gases and products that contain F gases are controlled or banned by the Regulation. These cover certain uses of sulphur hexafluoride for magnesium die-casing, use of certain F gases in non-refillable containers, fire protection systems, tyres, one component foams, novelty aerosols, footwear and windows and self-chilling cans.

Structure and aim of this guidance
This document follows the same structure as the Regulation, and considers each article in turn, in the order in which they appear in the Regulation text.

It is intended to provide a summary of the obligations in the Regulation, including advice on where the responsibility may lie. This guidance is not intended to give detailed sector specific advice on the obligations that the Regulation introduces. Defra is however working with some industry organisations who intend to produce more detailed guidance for their members. This document does not constitute formal legal advice and it is for individuals to take their own advice regarding the legal effect of the Regulation and how best to meet its obligations. Only the courts can provide definitive interpretations of the provisions in the Regulation.

Climate Change
Our planet is surrounded by a blanket of gases that keeps its surface warm and able to sustain life. This blanket is getting thicker, trapping in heat as greenhouse gases are released by burning fossil fuels for energy, and as powerful man-made greenhouse gases like fluorinated greenhouse gases continue to be emitted. As a result, the climate is changing.

Climate change is the greatest environmental challenge facing the world today. Rising global temperatures will bring changes in weather patterns, rising sea levels and increased frequency and intensity of extreme weather events. The effects will be felt here in the UK and internationally there may be severe problems for people in regions that are particularly vulnerable to change.

Some changes to the climate are inevitable – even if emissions of gases stopped now, the gases already released will have an effect. However, it is important to do everything that can be done to avoid further changes and to adapt to the new situation that now exists.

The issue to be addressed – emissions of fluorinated greenhouse gases (F gases)

F gases are man-made gases that are used in a number of different sectors. The most commonly used fluorinated gases belong to a class of chemicals known as hydrofluorocarbons (HFCs). HFCs were virtually unused before 1990 but since then have been used to replace ozone-depleting substances, such as chlorofluorocarbons (CFCs) and (HCFCs) in, for example, refrigeration and air-conditioning equipment. Other fluorinated gases are

perfluorocarbons (PFCs), which are used in the fire fighting and electronics sectors, and sulphur hexafluoride (SF6), which has been used in diverse applications such as training shoes and as a cover-gas in magnesium casting operations.

Although F gases do not damage the ozone layer like the CFCs that they replace; they are powerful greenhouse gases, are generally long-lived and are included in the 'basket of gases' under the Kyoto Protocol.

There has been uncertainty regarding the use of HFCs since the adoption of the Kyoto Protocol. The Government recognises that the successful phase out of ozone-depleting substances under the Montreal Protocol is being achieved with a range of technologies, and accepts that HFCs are necessary to replace ozone-depleting substances in some applications. In view of this, the Government's position on HFCs is as follows:

- HFCs should only be used where other safe, technically feasible, cost-effective and more environmentally acceptable alternatives do not exist;
- HFCs are not sustainable in the long term – the Government believes that continued technological developments will mean the HFCs may eventually be able to be replaced in the applications where they are used;
- HFC emission reduction strategies should not undermine commitments to phase-out ozone depleting substances under the Montreal Protocol; and
- HFC emissions will not be allowed to rise unchecked.

Links with other relevant legislation:
<u>The Directive 2002/91/EC on Energy Performance of Buildings (EPBD)</u>
Both the EPBD and the f gas Regulation will have requirements **applying to the same types of air-conditioning equipment** and those responsible for such equipment should be aware that there are such requirements in relation

- to energy efficiency (the EPBD) and containment of refrigerants (f gas regulation) and;
- minimum qualifications for personnel carrying out energy assessments (the EPBD) and work on the refrigerants in the air-conditioning systems (the f gas Regulation).

Although the inspection, regularity and qualification requirements are quite different , servicing companies for such equipment may wish to consider ensuring some staff are qualified under both regimes so that they can offer to carry out work in relation to the EPBD directive and F gas regulation at the same time.

For the EPBD, a practical inspection and assessment method is currently being developed by a CIBSE/FETA working group, also including representation from ACRIB, with a view to producing a joint publication, likely to be a jointly badged CIBSE Technical Memorandum. The publication will describe a procedure clearly identifiable as that suggested to meet the

requirements of Article 9 of the EPBD. It is proposed that this publication could be referenced by the Approved Document as a way of specifying the required inspection.

Implementation
The Directive should have been implemented by Member States no later than thirty-six months after it came into come into force i.e. by 4 January 2006. There is an additional 3-year period to allow Member States to apply the provisions of Articles 7, *Energy Performance Certificates*, Article 8 *Inspection of Boilers* and Article 9 *Inspection of Air Conditioning Systems*. This will allow Member States to develop suitable energy rating systems and certification schemes for all buildings that fall within the scope of the Directive, as well as taking into account the amount of time needed for the accreditation and training of sufficient personnel to undertake the energy performance assessments.

The Department for Communities and Local Government (DCLG) will take the lead for implementing the measures contained within the Directive, as it has responsibility for most of the legislation that will be used to transpose the Directive into law; the technical provisions for calculating and setting energy performance standards have been dealt with via the Building Regulations, a major revision of which came into effect in April 2006. In Wales, the Welsh Assembly Government will be jointly responsible for implementing the measures contained within the Directive.

In Scotland, the Scottish Executive, will be responsible for implementing the measures contained within the Directive, as it has responsibility for most of the legislation that will be used to transpose the Directive into law in Scotland.

Contacts:
For more information on this directive please contact:
paul.decort@communities.gsi.gov.uk or climate.change@scotland.gsi.gov.uk or ruth.gow@wales.gsi.gov.uk

Or visit:: http://www.communities.gov.uk/ , http://www.scotland.gov.uk http://www.wales.gov.uk

2. ARTICLE 1 – THE SCOPE OF THE REGULATION

The objective of this Regulation is to contain, prevent and thereby reduce emissions of the F gases covered by the Kyoto Protocol, and it will apply to the fluorinated greenhouse gases listed in the table below. This table contains a list of the F gases covered by this Regulation, together with their Global Warming Potential (GWP), (this table can also be found attached to the Regulation text as Annex I). The Regulation also covers “preparations” containing F gases (see Article 2 definitions considered below).

Fluorinated greenhouse gas	**Chemical Formula**	**Global Warming Potential**
Sulphur hexafluoride	SF_6	22200
Hydrofluorocarbons (HFCs):		
HFC-23	CHF_3	12000
HFC-32	CH_2F_2	550
HFC-41	CH_3F	97
HFC-43-10mee	$C_5H_2F_{10}$	1500
HFC-125	C_2HF_5	3400
HFC-134	$C_2H_2F_4$	1100
HFC-134a	CH_2FCF_3	1300
HFC-152a	$C_2H_4F_2$	120
HFC-143	$C_2H_3F_3$	330
HFC-143a	$C_2H_3F_3$	4300
HFC-227ea	C_3HF_7	3500
HFC-236cb	$CH_2FCF_2CF_3$	1300
HFC-236ea	CHF_2CHFCF_3	1200
HFC-236fa	$C_3H_2F_6$	9400
HFC-245ca	$C_3H_3F_5$	640
HFC-245fa	$CHF_2CH_2CF_3$	950
HFC-365mfc	$CF_3CH_2CF_2CH_3$	890
Perfluorocarbons (PFCs):		
Perfluoromethane	CF_4	5700
Perfluoroethane	C_2F_6	11900
Perfluoropropane	C_3F_8	8600
Perfluorobutane	C_4F_{10}	8600
Perfluoropentane	C_5F_{12}	8900
Perfluorohexane	C_6F_{14}	9000
Perfluorocyclobutane	$c\text{-}C_4F_8$	10000

Additional to the list of pure HFCs e.g. HFC-134a or R-134a, HFC152a or R-152a listed in Annex I, the Regulation also applies to HFC preparations or blends. A number of commonly available proprietary blends are:

R-404A
R-407C
R-410A
R-413A
R-417A
R-419A
R-422D
R-423A
R-507
Some of these may be also be known by commercial names

Other less common proprietary blends are also available and future developments may lead to additional HFC blends being introduced.

"Global Warming Potential" expresses the climatic warming potential of a greenhouse gas relative to that of carbon dioxide. The standard Global Warming Potential (GWP) is calculated in terms of the 100 year warming potential of one kilogram of a gas relative to one kilogram of CO2. The GWP figures listed here are taken from the third assessment report (TAR) adopted by the Intergovernmental Panel on Climate Change ("2001 IPCC GWP values"[2]);

In the light of revisions provided for by Article 5(3) of the Kyoto Protocol and accepted by the European Community and its Member States, this list may be reviewed and if appropriate may then be updated.

The provisions in the Regulation cover:

- the containment, use, recovery and destruction of the F gases covered by this Regulation;
- the labelling and disposal of products and equipment containing those gases;
- the reporting of information on those gases, including imports, exports and production of these gases;
- the uses referred to in Article 8 and the placing on the market prohibitions of the products and equipment referred to in Article 9; and
- the training and certification of personnel involved in activities provided for by this Regulation, specifically in relation to the containment and recovery obligations.

[2] IPCC Third Assessment Climate Change 2001. A Report of the Intergovernmental Panel on Climate Change (http://www.ipcc.ch/pub/reports.htm).

3. ARTICLE 2 – DEFINITIONS

The definitions provided for in this Regulation are for the purposes of this Regulation only. They are listed below:

Fluorinated greenhouse gases means hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6) as listed in Annex 1 of the Regulation and preparations containing those substances, but excludes substances controlled under Regulation (EC) No 2037/2000 of the European Parliament and of the Council of 29 June 2000 on substances that deplete the ozone layer;
Hydrofluorocarbon means an organic compound consisting of carbon, hydrogen and fluorine, and where no more than six carbon atoms are contained in the molecule;
Perfluorocarbon means an organic compound consisting of carbon and fluorine only, and where no more than six carbon atoms are contained in the molecule;
Global Warming Potential expresses the climatic warming potential of a greenhouse gas relative to that of carbon dioxide. The standard Global Warming Potential (GWP) is calculated in terms of the 100 year warming potential of one kilogram of a gas relative to one kilogram of CO2. The GWP figures listed here are taken from the third assessment report (TAR) adopted by the Intergovernmental Panel on Climate Change ("2001 IPCC GWP values"[3]);
Preparation means for the purposes of the obligations in this Regulation, excluding destruction, a mixture composed of two or more substances at least one of which is a fluorinated greenhouse gas, except where the total global warming potential of the preparation is less than 150;
Operator means the natural or legal person exercising actual power over the technical functioning of the equipment and systems covered by this Regulation; a Member State may, in defined, specific situations designate the owner as being responsible for the operator's obligations;
Placing on the market means the supplying of or making available to a third party within the Community for the first time, against payment or free of charge, products and equipment containing or whose functioning relies upon fluorinated greenhouse gases, and includes import into the customs territory of the Community;
Use means the utilisation of fluorinated greenhouse gases in the production, refilling, servicing or maintenance of products and equipment covered by the Regulation;
Heat pump means a device or installation that extracts heat at low temperature from air, water or earth and supplies heat;
Leakage detection system means a calibrated mechanical, electrical or electronic device for detecting leakage of fluorinated greenhouse gases, which, on detection, alerts the operator;
Hermetically sealed system means a system in which all refrigerant containing parts are made tight by welding, brazing or a similar permanent

[3] *Ibid*

connection which may include capped valves and capped service ports that allow proper repair or disposal and which have a tested leakage rate of less than 3 grams per year under a pressure of at least a quarter of the maximum allowable pressure;"
Container means a product, which is designed primarily for transporting or storing fluorinated greenhouse gases;

"Container" does not therefore mean aerosols. The test of whether something is a "container" is whether it is used primarily for transporting or storing F gases.

A non-refillable container means a container that is designed not to be refilled and is used in the servicing, maintenance or filling of refrigeration, air-conditioning or heat pump equipment, fire protection systems or high-voltage switchgear; or to store or transport fluorinated greenhouse gas based solvents;
Recovery means the collection and storage of fluorinated greenhouse gases from, for example, machinery, equipment and containers;
Recycling means the reuse of a recovered fluorinated greenhouse gas following a basic cleaning process;
Reclamation means the reprocessing of a recovered fluorinated greenhouse gas in order to meet a specified standard of performance;
Destruction means the process by which all or most of a fluorinated greenhouse gas is permanently transformed or decomposed into one or more stable substances, which are not fluorinated greenhouse gases;
Stationary application or equipment means an application or equipment which is normally not in transit during operation;
Novelty aerosol means those aerosol generators marketed and intended for sale to the general public for entertainment and decorative purposes as listed in the Annex to Directive 94/48/EC.

4. ARTICLE 3 – CONTAINMENT

Obligations
Leakage checking/repairing
Article 3 introduces a requirement for operators to use all available measures which are technically feasible and that do not entail disproportionate cost in order to prevent leakage of F gases and to repair any detected leakage (as soon as possible) from the following list of stationary applications: refrigeration, air conditioning and heat pump equipment including their circuits, and fire protection systems. These applications must be checked for leakage within one month after a leak has been repaired to ensure that the repair has been effective.

The Regulation also provides a timetable for the checking for leakage of the following stationary applications: refrigeration, air conditioning and heat pump equipment and fire protection systems. The "operators" of these applications will have to ensure that they are checked for leakage in line with the timetable set out in the Regulation.

The checking for leakage timetable and details set out under Article 3 (below) does not apply to equipment with a charge of F gases below 3 kg.
The checking timetable is graduated in line with the amount of F gas contained in the application, as follows:

- At least once every twelve months for applications containing 3 kg or more of F gases (this shall not apply to equipment with hermetically sealed systems, which are labelled as such and contain less than 6 kg of fluorinated greenhouse gases)
- At least once every six months for applications containing 30 kg or more of F gases
- At least once every three months for applications containing 300 kg or more of F gases

The applications must be checked for leakage within one month after a leak has been repaired to ensure that the repair has been effective.

For the purposes of this requirement, “checked for leakage” means that the equipment or system is examined primarily for leakage using direct or indirect measuring methods, focusing on those parts of the equipment or system most likely to leak.

By 4 July 2007, the European Commission will need to have established the standard leakage checking requirements for each of the stationary applications referred to in Article 3(1) i.e. refrigeration, air conditioning and heat pump equipment and fire protection systems. The direct and indirect measuring methods of checking for leakage will need to be specified in the standard checking requirements.

It is not possible to say at present when the Commission will have developed their proposed requirements but we would expect them to develop through a consultative process. The proposals will have to be agreed by Member States in the “F gas Regulatory Committee”. The operation of this committee is described in the discussion of article 12 in this guidance document.

<u>Leakage detection systems</u>
By the date that the Regulation applies, “operators” of the stationary applications listed above which contain 300 kg or more of F gases, will have to have installed leakage detection systems i.e “a calibrated mechanical, electrical or electronic device for detecting leakage of F gases, which, on detection, alerts the operator.” (Article 2.10)

There is a 3-year derogation from the requirement to fit a leakage detection system for existing fire protection systems that contain 300kg or more of F gases. Existing fire protection systems are those installed before 4 July 2007. For some systems, leakage detection systems must be fitted by 4 July 2010.

The operator will have to ensure that leakage detection systems are inspected at least once every twelve months to ensure their proper functioning.

Where a properly functioning appropriate leakage detection system is in place, the frequency of the inspections required for those systems that have a 30kg or a 300kg charge, shall be halved e.g. the timetable for the inspections would be:

- At least once every twelve months for applications containing 30 kg or more of F gases
- At least once every six months for applications containing 300 kg or more of F gases

The word "calibrated", in the definition of "leakage detection system" quoted above is not defined in the Regulation but is intended to mean, for example, a leakage detection system that can tell the difference between a large leak and a small leak.

The proposal for a "leakage detection system" is not meant to be technology specific therefore this definition could include systems designed to detect refrigerant (e.g. a "sniffer" device) but also devices such as those which detect a drop in pressure from a system.

In the case of fire protection systems where there is an existing inspection regime in place to meet ISO 14520 standard, these checks may also fulfil the obligations of this Regulation as long as those checks are at least as frequent as those specified by the timetable above.

Record Keeping

Operators of the stationary applications referred to in article 3.1 containing 3kg or more of F gases will also have to maintain records on the quantity and type of F gases installed, any quantities added and the quantity recovered during maintenance, servicing and final disposal. They shall also maintain records of other relevant information, including the identification of the company or technician who performed the servicing or maintenance, as well as the dates and results of the leakage checks and relevant information specifically identifying the separate stationary equipment with more than 30kg of F gases. These records will have to be made available on request to the competent authority and the Commission.

Responsibilities

The "operator" is defined in Article 2. It is the natural or legal person who exercises actual power over the technical functioning of the equipment and systems. Therefore the key consideration when identifying the operator will be the way in which responsibilities for managing equipment are arranged, who exercises actual power over its functioning and what "actual power" means in practice. In most circumstances, it is likely to be that the person who has

actual power will be the person or legal person (typically a company) responsible for giving instructions to its employees as to the day to day technical functioning of the equipment.

It will be desirable for equipment servicing companies and their customers (who could be the owners or lessees of equipment) to have contractual arrangements that clearly delimit operator responsibilities in relation to the Regulation and for businesses using relevant equipment to ensure that operator tasks are clearly identified in employees' job descriptions.

There cannot be a hard and fast rule to identify the operator. It will depend on the circumstances of the particular case, the nature of the equipment, how it is used and who has actual power over its technical functioning. In some cases, unless it is clear from a contractual arrangement who has such power, then it may well be that operator responsibilities will rest with the end user.

On the other hand, a servicing company that looks after equipment on a routine basis may be captured by the definition rather than the end user. For example, the equipment may be so complex that the end user does nothing at all to interfere with its operation e.g. a large fire protection system, and leaves it to the servicing company under a contractual arrangement. However it should be made clear in the contract that the servicing company is the operator.

A servicing company may have a contractual agreement to service commercial refrigeration equipment at set intervals. But again, a servicing contract would need to state clearly that specific operator responsibilities rested with the servicing company. Otherwise, it is likely they would remain with the end user. Where such operator responsibilities are included in a contract with a servicing company, the servicing company may want to require the end user to be under a contractual obligation to inform the servicing company of any leaks. If the servicing company is monitoring leakage through remote sensing equipment, they would be responsible for acting to repair leakage immediately, assuming all this formed part of their contractual operator obligations.

It would be good practice for service companies and end users to have contact points to aid ease of communication. Operators will have to ensure that all leakage checking activities relating to this article are carried out by certified personnel who comply with the training and certification requirements specified in Article 5 of the Regulation.

It is also relevant to consider, where an operator does not comply with the Regulation's requirements, who would be responsible if there was a prosecution for an alleged offence. Where a company is the operator, the company would be liable to prosecution. It would be for the company to decide if there should be an internal disciplinary process for the alleged failure of an employee to discharge their duties according to their terms of employment. But that would be quite separate from the company's obligations under the Regulation as operator. If the operator is an individual or self-

employed, then they would be directly responsible for breaches of the Regulation's requirements. However, it will ultimately be up to a court to decide, in each case where there is any dispute, who is the operator.

There appears to be a slight disparity between the requirements of Article 3 and 4 on ensuring that the personnel carrying out leakage checks are qualified and the timescale of Article 5 for setting up training and certification requirements (details on this timing issue are provided in the section on training and certification on page 17).

5. ARTICLE 4 – RECOVERY

Obligations
From 4 July 2007, operators will be responsible for putting in place arrangements for the proper recovery of F gases by certified personnel to ensure their recycling, reclamation or destruction from the following stationary applications:

- the cooling circuits of refrigeration, air-conditioning and heat pump equipment;
- equipment containing fluorinated greenhouse gas based solvents;
- fire protection systems and fire extinguishers; and
- high-voltage switchgear.

In addition, Article 4.3 specifies that the F gases contained in other products and equipment, including mobile equipment unless it is serving military operations, shall, to the extent that it is technically feasible and does not entail disproportionate cost, be recovered by appropriately qualified personnel, to ensure their recycling, reclamation or destruction. The term "other products" will have a wide scope, but the recovery obligation will be subject to the technical feasibility/disproportionate cost tests referred to above.

When a refillable or non-refillable F gas container reaches the end of its life, the person utilising the container for transport or storage purposes shall be responsible for putting in place arrangements for the proper recovery of any residual gases it contains to ensure their recycling, reclamation or destruction.

The placing on the market of non-refillable containers will be prohibited under Article 9 and Annex II from 4 July 2007, although this placing on the market prohibition will not apply to containers shown to be manufactured before the prohibition comes into force. The recovery obligation will apply to all these non-refillable containers when they reach the end of their life.

Recovery, for the purpose of recycling, reclamation or destruction of the fluorinated greenhouse gases shall take place before the final disposal of that equipment and, when appropriate, during its servicing and maintenance.

Responsibilities
The "operator" will be responsible for ensuring that these recovery activities are carried out properly by certified personnel (i.e. certified personnel who comply with the training and certification requirements specified in Article 5 of

the Regulation), and will therefore be liable for any failure to comply with these requirements.

There may be a subtle distinction between the terms "certified" in 4.1 and "qualified" in 4.3; "appropriately qualified" may include "certified personnel" and also may include personnel who are not certified but have some relevant qualifications.

6. ARTICLE 5 – TRAINING AND CERTIFICATION

Obligations
Article 5 introduces minimum requirements and mutual recognition for both the companies and the relevant personnel involved in installation, maintenance or servicing of the equipment and systems covered by Article 3(1) as well as for the personnel involved in the activities provided for in Articles 3 and 4, (containment and recovery respectively).

The qualification requirements specify the activities carried out rather than the location/situation. If containment/recovery provisions are relevant to roles carried out by operators in a manufacturing plant then the qualification requirements are too.

The European Commission on the basis of information received from the UK and other Member States, and in consultation with the relevant sectors, will establish the minimum requirements and conditions for mutual recognition for the training programmes and certification at EU level by 4 July 2007.

Article 5.2 states that by 4 July 2008, Member States will have to establish or adapt their own training and certification requirements, on the basis of the minimum requirements specified by the Commission.

Once the requirements have been established at EU level therefore, regulations will be needed at UK level to prescribe them (just as regulations have been prepared prescribing qualifications for those carrying out work with ozone depleting substances). This will be the subject of a separate consultation exercise.

Article 5.4 specifies that companies involved in carrying out the activities provided for in Articles 3 and 4, containment and recovery respectively, shall only take delivery of fluorinated greenhouse gases where their relevant personnel hold the certificates referred to above. This obligation will come into force in the UK on 4 July 2009 and will need to be the subject of further discussions with those affected.

Responsibilities
Article 5.3 requires operators, from 4 July 2007, to ensure that the relevant personnel involved in the activities provided for in Articles 3 and 4 have obtained the necessary certification, as specified in Article 5.2.

There is an issue with the timing of the provisions introduced by 5.2 and 5.3. as the operators have to comply with 5.3 from the date that the Regulation applies e.g. ensuring that the personnel have the relevant certification specified in Article 5.2 by July 2007 even though Member States will have until July 2008 to establish their own minimum certification requirements as specified in 5.2.

The Commission have offered an informal preliminary view that they envisage Member States using current certification or qualification criteria in the interim.

7. ARTICLE 6 – REPORTING

Obligations
Article 6 introduces an obligation on producers, importers and exporters of fluorinated greenhouse gases, who produce, import, or export more than one tonne of fluorinated greenhouse gases per year, to report to the Commission on the quantities involved, sending the same information to the competent authority of the Member State.

These reports will have to be submitted by 31 March each year. The first deadline for this reporting requirement is 31 March 2008.

The Commission will have established the format of the report by the date that the Regulation applies and shall take appropriate steps to protect the confidentiality of the information submitted to it.

A producer will have to report: its total production of F gases in the Community, identifying the main categories of applications in which the substance is expected to be used; the quantity of each F gas placed on the market; and any quantities of each F gas recycled, reclaimed or destroyed.

An importer, including any producers who import will have to report: the quantity of each F gas it has imported on placed on the market in the Community, identifying the main categories of applications in which the substance is expected to be used; and the quantity of each used f gas imported for recycling, reclamation or destruction.

An exporter will have to report: the quantities of each F gas it has exported from the Community; and any quantities of each used F gas it has exported for recycling, reclamation or destruction.

The provisions apply only to producers, importers and exporters of the F gases themselves, rather than the producers, importers and exporters of the products containing these gases. However, estimates are required of the main categories of applications in which the substance is expected to be used.

The list of applications given in Article 6.1 (a) and (b) are indicative lists, not definitive ones.

Responsibilities
The responsibility for complying with these obligations lies with the producers, importers and exporters of more than one tonne of fluorinated greenhouse gases per annum.

8. ARTICLE 7 – LABELLING

Obligations
From 4 July 2007, products and equipment containing F gases (see below for scope of requirement) placed on the market will have to have a label that: states the chemical name of the F gas; provides a clear indication that the product contains F gases and their quantity. This information must be clearly and indelibly stated on the product or equipment, adjacent to the service points for charging or recovering the F gases or on that part of the product or equipment, which contains the F gas.

This labelling requirement does not apply to products and equipment shown to have been placed on the market before the date that this provision applies.

Hermetically sealed systems should be labelled as such. There is no exemption from this requirement for hermetically sealed systems and the definition of hermetically sealed system does not distinguish between systems sealed at manufacture or following installation.

This labelling requirement only applies to the following list of products and equipment:

- refrigeration equipment and products which contain perfluorocarbons or preparations containing perfluorocarbons;
- refrigeration and air conditioning equipment and products (other than those contained in motor vehicles), heat pumps, fire protection systems and fire extinguishers, if the respective type of equipment or product contains hydrofluorocarbons or preparations containing hydrofluorocarbons;
- switchgear which contains sulphur hexafluoride or preparations containing sulphur hexafluoride; and
- all fluorinated greenhouse gas containers as defined.

It is for the Commission to propose the type of label that is to be used and for the F gas Regulatory Committee to agree to it. This could include additional labelling information such as the global warming potential of the F gas.

Information on the F gases, including their global warming potential, will also have to be included in the instruction manuals provided for such products and equipment.

This requirement will cover equipment placed on the market after 4 July 2007. The form of the label will need to be agreed at EU level before 4 July 2007. It will be important to take account of practical issues e.g. where equipment is supplied pre-charged but then the installer tops up the charge and situations where equipment is placed on the market without an F gas charge.

Responsibilities
Manufacturers, wholesalers and installers of equipment will need to consider further who should label equipment bearing in mind that the obligation applies when equipment is placed on the market and that the label must be indelible, but the practical requirements of the labelling requirement could be met before this. Those responsible for preparing instruction manuals to accompany equipment will also need to ensure that information on the fluorinated gases, including their GWP, is included.

9. ARTICLE 8 – CONTROLS ON USE

Controls
This Article prohibits:

- The use of sulphur hexafluoride or preparations thereof in magnesium die-casting, except where the quantity used is less than 850 kg per year from 1 January 2008, and;
- The use of sulphur hexafluoride or preparations thereof for the filling of vehicle tyres from one year after the date of entry into force of the Regulation, i.e. from 4 July 2007

Responsibilities
It is the responsibility of whoever is in involved with these uses to ensure that they are operating in line with the controls on use specified by this Article.

10. ARTICLE 9 – PLACING ON THE MARKET PROHIBITIONS in the EU and EEA countries (Norway, Lichtenstein, Iceland)

The prohibitions
This Article prohibits the placing on the market of specific products and equipment containing, or whose functioning relies upon, F gases. These products are listed in the table below (which is Annex II in the Regulation), which also indicates the dates from which these prohibitions take effect.

Fluorinated greenhouse gases	Products and equipment	Date of prohibition
Fluorinated greenhouse gases	Non-refillable containers	4 July 2007
Hydrofluorocarbons and perfluorocarbons	Non-confined direct-evaporation systems containing refrigerants	4 July 2007
Perfluorocarbons	Fire protection systems and fire extinguishers	4 July 2007
Fluorinated greenhouse gases	Windows for domestic use	4 July 2007
Fluorinated greenhouse gases	Other windows	4 July 2008
Fluorinated greenhouse gases	Footwear	4 July 2006
Fluorinated greenhouse gases	Tyres	4 July 2007
Fluorinated greenhouse gases	One component foams, except when required to meet national safety standards	4 July 2008
Hydrofluorocarbons	Novelty aerosols	4 July 2009

Metered Dose Inhalers that use F gases are not prohibited by this Regulation

These prohibitions shall not apply to products and equipment shown to be manufactured before the date of entry into force of the relevant placing on the market prohibition. In addition, products that will be subject to a placing on the market ban, but were placed on the market before the ban, can continue to be traded on the second hand market because the definition of “placing on the market” refers to placing products on the market “for the first time”.

The Regulation does not prohibit the export of new products and equipment outside the EU as the prohibition relates to “placing on the market” in the Community.

Responsibilities
Fall to any person placing on the market for the first time in the European Community the products and equipment prohibited by the Regulation (from the dates set out in Annex II of the Regulation).

11. ARTICLE 10 – REVIEW

There are two distinct aspects to the Commission review, and two dates to be aware of:

Firstly, by 31st December 2007 the Commission will review the Regulation, publish a report and, if appropriate, present legislative proposals with respect to applying the provisions of Article 3 (containment) to air conditioning systems, other than those fitted to motor vehicles, and refrigeration systems contained in modes of transport.

Within 5 years of the Regulation coming into force, the Commission will produce a report based on experience of the application of the Regulation and where necessary the Commission will present appropriate proposals for the revision of the relevant provisions of the Regulation.

This review of the experience of the application of the Regulation will include an assessment of possible additions to the products and equipment prohibited by this Regulation (as listed in Annex II). Any proposed additions would follow from a study into technical feasibility, energy-efficiency and cost-effectiveness. The review will also include an assessment of whether maximum leakage rates can be established.

12. ARTICLE 11 - PROMOTION OF ALTERNATIVES

Without prejudice to relevant Community law, including rules on State aid, under this Article Member States may promote the placing on the market of products and equipment which use alternatives to gases with a high global warming potential and which are efficient, innovative and further reduce the climate impact.

13. ARTICLE 12 – COMMITTEE

This Article establishes the Regulatory Committee for this Regulation. The Commission has to complete important pieces of work in order to give effect to the provisions in the Regulation e.g.

- Standard leakage checking requirements (Article 3.7).
- Minimum requirements and mutual recognition for training programmes and certification for relevant personnel and for companies and personnel involved with containment and recovery (Article 5.1).
- Format for notifying to the Commission Member States' training and certification programmes (Article 5.5).
- Format for reporting information to the Commission (Article 6.2).
- Form of label to be used for certain products and equipment containing F gases (Article 7.3).

The role of the Committee is to assist the Commission in this process.

The Committee was set up under EC Regulation 2037/2000 on substances that deplete the ozone layer. This avoids creating a completely separate and new Committee to deal with F gases and provides the opportunity for one committee to deal with equipment that might contain either F gases or ozone depleting substances as refrigerants/fire protection agents.

The Commission chairs the Committee and each of the 25 Member States is entitled to send a representative. The Committee enables the Commission to adopt measures, provided the Committee is in favour of them. Such measures would then have binding effect on the Member States affected by the measures.

It is important that stakeholders are ready to assist the Commission while proposals are being drafted, for example in drawing up minimum qualification requirements.

The Committee decides whether to support Commission proposals by voting on a qualified majority basis e.g. for a Commission proposal to be supported by the Committee there must be a qualified majority of Member States voting in favour.

If there is a qualified majority against the draft measure, or no opinion is delivered, the Commission must submit the proposal to the Council of Ministers. The Council then has three months to either adopt or block the Commission's proposal by qualified majority or amend it by unanimity. If there is a qualified majority against the proposal then the Commission must reconsider it. If the Council does not act, the Commission adopts the measures.

These are not the same arrangements as in the EC Regulation on substances that deplete the ozone layer, where unless there is a qualified majority <u>against</u> a Commission proposal, the Commission adopts the proposal.

14. ARTICLE 13 – PENALTIES

It is for each Member State to define its own sanctions for offences and infringements of the provisions of this Regulation but the Regulation does specify that the penalties shall be effective, proportionate and dissuasive.

The Government will aim to consult stakeholders on proposed draft domestic offences and penalties regulations in early 2007.

15. ARTICLE 14 – MORE STRINGENT PROTECTIVE MEASURES

Under this Article, Member States may maintain or introduce more stringent protective measures in relation to other Articles in the Regulation in accordance with the procedures laid down in Article 95 of the Treaty in relation to Articles 7, 8 and 9 of the Regulation, or Article 176 of the Treaty in relation to other Articles in the Regulation. This is without prejudice to Article 9.3, which deals with the situation of those Member States that had by 31 December 2005 adopted stricter national measures relevant to the Regulation.

16. ARTICLE 15 – ENTRY INTO FORCE

The Regulation entered into force twenty days after the date of its' publication in the *Official Journal of the European Union (14 June 2006).* It will apply with effect from 4 July 2007 with the exception of Article 9 and Annex II, which will apply from 4 July 2006. However, it is the dates specified in Annex II that still determine the placing on the market prohibitions.

The changes to the coming into force date of the Regulation were introduced at the Conciliation stage of the negotiations with the European Parliament in January 2006. Essentially however, the various dates applicable in the 2004 Common Position text have not changed. It is the terminology ("apply"/come into force") that has changed.

Taking these factors into consideration the majority of the provisions in the Regulation will come into force by 4 July 2007. Further requirements in the Regulation will come into force one or two years after that date.

As this is a Regulation of the European Community, it will apply directly to those to whom it is addressed without any national transposing legislation by Member States, including the UK. The UK will however need to introduce some domestic Regulations e.g. in relation to Article 13 (penalties) and Article 5 (minimum qualification requirements).

17. SUMMARY OF TIMINGS

This table provides a guide as to when the provisions come into force and information on further work required by Member States and the Commission (Government F gas Regulation "Route Map")

Date	Provision/ Member State action	Provisions
4 July 2006	**Article 5**	The Regulation entered into force twenty days after the date of its publication (14 June 2006) in the Official Journal of the European Union. It applies with effect from 4 July 2007, with the exception of Article 9 and Annex II, which applies from 4 July 2006.

		The Regulation is binding in its entirety and directly applicable in all Member States.
4 July 2006	**Article 9 and Annex II**	Footwear – placing on the market prohibition.
4 July 2007	**MS action Article 3.1**	Put in place sanctions and penalties for failure to comply with the Regulation. Government will aim to consult stakeholders on the sanctions and penalties in early 2007.
By 4 July 2007	**MS action**	Commission to establish standard leakage checking requirements.
By 4 July 2007	**Article 7. 3**	The Commission to establish the form of the label to be used.
4 July 2007	**Article 3.1**	Operators of stationary equipment (subject to technical/cost caveat): - prevent leakage of fluorinated greenhouse gases; and as soon as possible repair any detected leakage .
4 July 2007	**Article 3.2**	Operators to ensure inspection for leakage of stationary equipment by certified personnel (Art 5).
4 July 2007	**Article 3.3**	Installation of leakage detection systems for large stationary equipment (containing 300 kg or more). (Also see 2010 action below for existing equipment.)
4 July 2007	**Article 3.4**	Frequency of the inspections required under paragraph 2 (b) and (c) shall be halved if leakage detection system is in place.
4 July 2007	**Article 3.5**	In the case of fire protection systems ISO 14520 standard, these inspections may fulfil obligations of this Regulation as long as those inspections are at least as frequent.
4 July 2007	**Article 3.6**	Operators of the stationary applications (para 1), containing 3 kg or more F gases, shall maintain records on the quantity/ type of F gas installed, any quantities added and the quantity recovered during maintenance, servicing and final disposal.
4 July 2007	**Article 4.1**	Operators (specified stationary equipment) shall be responsible for putting in place arrangements for the proper recovery by certified personnel, to ensure their recycling, reclamation or destruction:
4 July 2007	**Article 4.2**	Refillable or non-refillable F gas containers - end of life recovery for recycling, reclamation or destruction.
4 July 2007	**Article 4.3**	F Gas recovery from other products and equipment, (technically feasible and

		disproportionate cost caveat) for recycling, reclamation or destruction.
4 July 2007	**Article 4.4**	Recovery, for the purpose of recycling, reclamation or destruction of the F gases, to take place before final disposal and during servicing and maintenance.
By 4 July 2007	**Article 5.1**	The Commission to establish minimum requirements and mutual recognition for training programmes and certification.
4 July 2007	**Article 6.2**	The Commission to establish the format of the report referred to in 6.1.
4 July 2007	**Article 6.4**	Member States establish reporting systems for relevant sectors referred to in this Regulation, with the objective of aquiring, to the extent possible, emission data.
4 July 2007	**Article 7.1**	The products and equipment containing F gases shall not be placed on the market unless labelled.
4 July 2007	**Article 8.2**	Sf6 vehicle tyre filling prohibited.
4 July 2007	**Annex II**	Non-refillable containers- placing on the market prohibition.
4 July 2007	**Annex II**	Placing on market prohibition for equipment containing HFCs & PFCs in a non-confined direct- evaporation system .
4 July 2007	**Annex II**	Placing on the market prohibition of equipment used new fire protection systems and fire extinguishers which contain PFCs
4 July 2007	**Annex II**	on the market prohibition for domestic use windows, containing F gases.
4 July 2007	**Annex II**	Placing on the market prohibition for tyres which contain F gases.
31st Dec 2007 at the latest	**Article 10**	Report to be published by Commission of review, containing proposals if appropriate, of refrigeration in mobile transport and air conditioning systems in vehicles other than motor vehicles, with a view to applying containment measures.
1st January 2008	**Article 8.1**	Magnesium die-casting – sulphur hexafluoride (SF6) use of 850 kilograms and over per year prohibited.
Before 4 July 2008	**MS Action**	Government will consult stakeholders regarding the minimum qualification requirements under Article 5. The UK will begin to plan ahead for this work, but will have to wait until the Commission establishes its minimum requirements before formally consulting on and establishing its own requirements.

By 4 July 2008	**Article 5.2**	Member States establish or adapt their own training and certification programmes, on the basis of the minimum requirements referred to in paragraph 1. Member States shall notify the Commission of information on their annual training and certification programmes.
31st March 2008	**Article 6.1**	Reporting requirements apply for producers/importer/exporters.
4 July 2008	**Article 5.3**	The operator to ensure that personnel have obtained the necessary training for F gas certification.
4 July 2008	**Annex II**	Other windows - Placing on the market prohibition
4 July 2008	**Annex II**	One component foams, except when required to meet national safety standards- Placing on the market prohibition
4 July 2008	**Article 12.2**	Member States notify Commission about sanctions
4 July 2009	**Article 5.4**	Companies involved in carrying out the activities provided for in Articles 3 and 4, shall only take delivery of fluorinated greenhouse gases where their relevant personnel hold the certificates referred to in Article 5(2).
4 July 2009	**Annex II**	Placing on the market prohibition for novelty aerosols containing HFCs.
By 4 July 2011	**Article 10.2**	Within 5 years after the entry into force of this Regulation, the Commission shall publish a report based on the experience of the application of this Regulation
4 July 2011	**Article 10.3**	Where necessary, the Commission shall present appropriate proposals for revision of the relevant provisions of this Regulation.
4 July 2010	**Article 3.3**	In the case of fire protection systems with an F gas charge of 300kg or more installed before 4 July 2007, leakage detection systems shall be fitted by 4 July 2010.

Defra/DTI/Scottish Executive/Welsh Assembly Government 2006