Environment and Climate Regional Accession Network ECRAN

Environment and Climate Regional Accession Network (ECRAN)

ECRAN Multi-country Workshop on Ozone-Depleting Substances (ODS) and Fluorinated Gases (F-Gases)

ANNEX IV

Background materials

Task 1.2: Regional Training programme of the Selected Climate *Acquis*

Sub Task 1.2.A WORKSHOP ON ODS AND F GASES

Tirana. Albania

27-28 May 2014

Regulations on certain fluorinated gases

Regulations on ozone depleting substances

The Regulations on Certain Fluorinated Greenhouse Gases

F-gas Regulation - Basic Act

Regulation (EC) No. 842/2006 of the European Parliament and of the Council of *17 May 2006* on certain fluorinated gases (OJ L 161/1, 14.6.2006)

F-gas Regulation – Ten Implementing Acts

1) **Leak checking – Stationary refrigeration & air conditioning**

Commission Regulation (EC) No. 1516/2007 of 19 December 2007 establishing standard leakage checking requirements for stationary refrigeration, air-conditioning and heat-pump equipment containing certain fluorinated greenhouse gases (OJ L 335/10, 20.12.2007).

2) **Leak checking – Fire protection**

Commission Regulation (EC) No. 1497/2007 of 18 December 2007 establishing standard leakage checking requirements for stationary fire protection systems containing certain fluorinated greenhouse gases (OJ L 333/4, 19.12.2007).

3) **Labelling**

Commission Regulation (EC) No. 1494/2007 of 17 December 2007 establishing the form of labels and additional labelling requirements as regards products and equipment containing certain fluorinated greenhouse gases (OJ 335/25. 18.12.2007).

4) **Producer reporting**

Commission Regulation (EC) No. 1493/2007 of 17 December 2007 establishing the format for the report to be submitted by producers, importers and exporters of certain fluorinated gases (OJ L 332/7, 18 December 2007).

5) **Qualifications/Certification – Stationary refrigeration and air conditioning**

Commission Regulation (EC) No 303/2008 of 2 April 2008 establishing 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 (OJ L 92, 3.4.2008, p. 3–11).

6) **Qualifications/Certification – Fire protection systems and fire extinguishers**

Commission Regulation (EC) No 304/2008 of 2 April 2008 establishing 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 (OJ L 92, 3.4.2008, p. 12–16).

7) **Qualifications/Certification – High voltage switchgear**

Commission Regulation (EC) No 305/2008 of 2 April 2008 establishing minimum requirements and the conditions for mutual recognition for the certification of personnel recovering certain fluorinated greenhouse gases from high-voltage switchgear (OJ L 92, 3.4.2008, p. 17–20).

8) **Qualifications/Certification – Gas-based Solvents from equipment**

Commission Regulation (EC) No 306/2008 of 2 April 2008 establishing minimum requirements and the conditions for mutual recognition for the certification of personnel recovering certain fluorinated greenhouse gas-based solvents from equipment (OJ L 92, 3.4.2008, p. 21–24).

9) **Qualifications/Training and training attestations – Mobile air conditioning**

Commission Regulation (EC) No 307/2008 of 2 April 2008 establishing 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 (OJ L 92, 3.4.2008).

10) **Format for notification of training programmes**

Commission Regulation (EC) No 308/2008 of 2 April 2008 establishing the format for notification of the training and certification programmes of the Member States (OJ L 92, 3.4.2008, p. 28–34).

1. Summary of Main Aims and Provisions

Fluorinated greenhouse gases (F-gases) are powerful greenhouse gases that contribute to global warming if released into the atmosphere. Their effect can be much greater than carbon dioxide (CO_2). To further reduce emissions of greenhouse gases, Regulation No. 842/2006 and 10 pieces of implementing Regulations were adopted. These Regulations mainly target certain industrial applications of fluorinated gases (F-gases). The Regulation covers the use of Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs) and Sulphur Hexafluoride (SF6) in all their applications with the exception of the prohibition of the use of F-gases in new types of cars and vans introduced from 2011, which is covered by the MAC Directive (2006/40/EC). Furthermore, reporting provisions have been introduced to facilitate monitoring of the Regulation's measures and ensure that its objectives are being met.

The F-gas Regulation aims at:

- Improving the **prevention of leaks** from equipment containing F-gases. Measures comprise: containment of gases and proper recovery of equipment; training and certification of personnel and of companies handling these gases; labelling of equipment containing F-gases; reporting on imports, exports and production of F-gases;
- **Avoiding F-gases in some applications** where environmentally superior alternatives are cost-effective. Measures include restrictions on the marketing and use of certain products and equipment containing F-gases.

The fluorinated gases they regulate are used for a wide range of applications, e.g.: Hydrofluorocarbons (HFCs) are used as refrigerants, cleaning solvents and foam blowing agents; Perfluorocarbons (PFCs) are used in semi-conductor manufacture, as cleaning solvents and as foam blowing agents; Sulphur hexafluorides (SF6) are used in high-voltage switch gear and magnesium production. As many of the earlier generation of cooling agents were phased out by the Montreal Protocol, industry substituted many of these gases with HFCs and PFCs as these do not deplete the ozone layer.

However, these gases are contributing to climate change, thus the EU decided to regulate their marketing and use. Industry is increasingly developing alternatives to fluorinated gases, but some of these gases are less safe for consumers than the fluorinated gases. Hence, a gradual approach and the gradual substitution of these gases will be necessary. During this transitional period until all uses of F-gases can be phased out, it is necessary to regulate the applications using F-gases also regarding checking, filling and disposal operations to minimise leakage. For this purpose, a certification scheme is established for certain companies that staff involved in handling applications with F-gases have the necessary qualifications and training.

Although Regulation (EC) No. 842/2006 mainly aims at environmental protection, it also seeks to ensure that the requirements on the use of fluorinated greenhouse gases and the marketing and labelling of products and equipment containing such gases are harmonised in the EU. For instance, restrictions are justified where alternative gases are available and the further improvement of containment is not possible. Annex 1 lists fluorinated gases falling under the scope of the Regulation and also sets out the method for calculating the total global warming potential for a preparation. Annex II sets out a schedule the placing on the market prohibitions of fluorinated gases in certain products and equipment.

Regulation No. 842/2006 has been supplemented with ten implementing Regulations (see above) laying down more specific requirements concerning:

- Standard **leak checking requirements** for stationary refrigeration, air conditioning equipment, heat pump equipment and stationary fire protection systems containing certain fluorinated greenhouse gases;

- **Labelling** requirements for products and equipment containing certain fluorinated greenhouse gases;
- Format for the **report** to be submitted by producers, importers and exporters of certain fluorinated greenhouse gases;
- **Certification** of companies and technical staff handling applications with fluorinated greenhouse gases and the mutual recognition of the certificates of other Member States. These concern the following applications containing certain fluorinated greenhouse gases:
  - Stationary refrigeration
  - Stationary air conditioning equipment
  - Stationary heat pump equipment
  - Stationary fire protection systems and fire extinguishers
  - High-voltage switchgear
- **Certification** of companies and technical staff **recovering** certain fluorinated greenhouse gas based solvents from equipment
- Minimum requirements for **training** programmes and the conditions for mutual recognition of training attestations for personnel as regards mobile air conditioning systems containing certain fluorinated greenhouse gases
- The **format** for **notification of the training and certification programmes** of the Member States

There are also links with the WEEE Directive in terms of recovery and disposal operations involving electrical equipment with F-gases.

New F-gas Regulation

A new F-gases Regulation is expected to come into force in May 2014. The new Regulation will reduce F-gas emissions by two-thirds of today's levels by 2030 and ban the use of F-gases in some new equipment where viable climate-friendly alternatives are readily available.

The main novelty and driver for moving towards climate-friendly technologies is the introduction of a phase-down measure which from 2015 will limit the total amount of hydrofluorocarbons (HFCs) – the most significant group of F-gases - sold in the EU and reduce their quantities in steps to one-fifth of today's sales by 2030.

This measure is accompanied by a number of new restrictions on the use and sale of F-gases in equipment. These ambitious measures will build on and benefit from the successful phase-out of ozone-depleting substances which was achieved in the EU 10 years ahead of the internationally agreed schedule.

2. Principal Obligations of Member States

2.1 Planning and Preparation

Firstly, Member States and candidate countries are advised to **assess which sectors and activities would be affected** by these Regulations. They affect a relatively wide range of stakeholders, including manufacturers, importers and service companies of air-conditioning installations, refrigeration systems, fire protection equipment, high voltage switch gears, air-conditioning systems fitted in certain motor vehicles as well as companies recovering certain F-gas based solvents from equipment. In particular, the five main industry sectors affected by the F-gas Regulation are:

- Stationary refrigeration, air conditioning and heat pumps;
- Fire protection systems and fire extinguishers;
- Mobile air conditioning;
- High voltage switchgear;
- Solvents.

End users and contractors may both have obligations, as may equipment manufacturers and distributors. There are legal obligations for companies and qualification requirements for personnel working in the five industry sectors as well as other requirements relating to:

- Leakage checking of equipment;
- Recovery of F gas from equipment during maintenance, servicing and at end of life;
- Reporting of annual F gas import, export and production figures;
- Labelling of equipment containing F gas (and inclusion of information in instruction manuals);
- Prohibition of SF6 use in magnesium die casting and in vehicle tyres;
- Placing on the market prohibitions for F gases in various products and equipment.

In order to ensure cost-efficient implementation and enforcement, above sectors need to **receive sufficient information about the legal and administrative requirements** and that awareness of the workings of these Regulations is enhanced. In this context, also the workers in installations performing certain activities have to be informed about the **obligation to acquire the necessary qualifications and training** to obtain a certificate and the competent authority has to put into place certification, interim certification and verification schemes to ensure that all affected workers are certified within a reasonable time period.

Plans could also be developed to engage and create incentives for the affected industrial sectors (e.g. foam applications and manufacturers of windows, footwear, car components including air-conditioning units fitted in motor vehicles, refrigerators, high voltage switch gears, fire protection systems and air-conditioning units) in the design and development of alternative gases, products or methods that have a reduced impact on the environment.

On the basis of Regulation No. 842/2006 and the ancillary Regulations, Member States mainly have obligations to administer, monitor and ensure the compliance of industry with the requirements. The tasks include the following:

- The Competent Authority has to **designate** the following bodies for **certification and verification schemes**:
  - **Certification Body**: for the issuing of certificates to personnel or companies involved in one or more of the controlled activities. The certification body shall establish and apply

procedures for the issuance, suspending and withdrawing of certificates. The certification body shall maintain records verifying the status of a certified person or company for a minimum period of five years. (Art 10, Regulation (EC) No 303/2008, Art 10, No 304/2008, Art 5, No 305/2008, and Art 4 No. 306/2008);

- **Evaluation Body**: for organising the examinations for the personnel involved in the controlled activities. The Evaluation Body and the Certification Body could be the same, provided that it is independent and impartial in carrying out its activities. Examinations have to cover the minimum skills and knowledge set out in the Annex to Regulations 303/2008, 304/2008, 305/2008 and 306/2008. (Art 11, Regulation (EC) No 303/2008, Art 11, No 304/2008, Art 6, No 305/2008, and Art 5 No. 306/2008) (In case fluorinated greenhouse gas-based solvents are not used in a Member State, a Member State can choose not to designate the certification or the evaluation body);
- **Attestation Body** (enshrined in national law to give it proper legal status) for issuing a training attestation to personnel who have completed a training course, covering the minimum skills and knowledge set out in the Annex. (Art. 3, Regulation 307/2008).

- Establishing a **system and procedures**, based on the minimum criteria and requirements set out by the Commission, for:
  - **Training programmes** and **certification schemes** for companies and personnel involved in the installation, maintenance and servicing of equipment and systems referred to in Article 3(1) of Regulation No. 842/2006 as well as those referred to in Regulation (EC) No 303/2008, Regulation (EC) No 304/2008, Regulation (EC) No 305/2008 and Regulation (EC) No 306/2008 (e.g. refrigeration, air-conditioning, heat-pump equipment, including their circuits, high voltage switch gears and fire protection systems containing fluorinated greenhouse gases as well as equipment containing certain F-gas based solvents). Member States had to have these training and certification requirements in place by 4 July 2008 at the latest and must inform the Commission of these (Art. 5(2), Regulation No. 842/2006). For Accession countries the provisional date is the date of accession. Four Regulations were adopted in 2008 laying down provisions: Regulation (EC) No 303/2008 and Regulation (EC) No 304/2008 on minimum requirements and the conditions for mutual recognition for the certification of companies and personnel as regards stationary refrigeration, air conditioning, heat pump equipment, stationary fire protection systems and fire extinguishers containing certain fluorinated greenhouse gases as well as Regulation (EC) No 305/2008 and Regulation (EC) No 306/2008 laying down minimum requirements and conditions for mutual recognition of certification of personnel recovering certain fluorinated greenhouse gases from high-voltage switchgear and certain fluorinated greenhouse gas-based solvents from equipment;
  - **Training programmes** of personnel recovering certain fluorinated greenhouse gases from air-conditioning systems in motor vehicles falling within the scope of Directive 2006/40/EC. The training attestation shall contain at least a) the name of the attestation body, the full name of the holder and a registration number; b) the activity which the holder of the training attestation is entitled to perform; c) issuing date and issuer's signature. Note that the training programme and the training attestation can be subject to a temporary transitional arrangement whereby exiting training programmes can be applied provided that they meet the minimum requirements in Annex of Regulation (EC) No 307/2008;
  - **Mutual recognition of certificates and training attestation** issued in other Member States (Art. 5(2), Regulation No. 842/2006) with detailed provisions set out in Regulation (EC) No 303/2008 and Regulation (EC) No 304/2008, Regulation (EC) No 305/2008, Regulation (EC)

No 306/2008 and Art. 5, Regulation 307/2008;

- Ensuring that, as from 4 July 2009, companies dealing with stationary applications such as refrigeration, air-conditioning and heat-pump equipment and fire protection systems containing fluorinated greenhouse gases listed in Annex I, including operators carrying out the recovery or destruction of such gases, do not take delivery of these gases unless the relevant personnel hold certificates and are sufficiently trained (Art. 5(4), Regulation No. 842/2006).

- Establishing appropriate design criteria and specific requirements relating to the form and language of the **labels** affixed to products or equipment containing or intended to contain fluorinated greenhouse gases in accordance with Regulation No. 1494/2007;
- Establishing a system to ensure the **monitoring and compliance** of labelling requirements. The labelling used must be consistent and harmonised to ensure transparency and consumer safety. Overseeing the compliance and efficiency of containment measures by operators in the various sectors and ensuring that leakage checks and repairs are only carried out by certified personnel;
- Considering whether to **introduce more stringent requirements** relating to the labelling of products or equipment containing fluorinated greenhouse gases, and a restriction/ban on the use of sulphur hexafluoride or preparations thereof for certain applications and gases in Annex II (Art. 14, Regulation No. 842/2006).

2.2 Regulation

The commercial, industrial and public sector organisations, (as indicated in paragraph 2.1 above) are responsible for taking several measures under the Regulations. The most important include:

- Ensuring compliance with marketing bans applying to gases listed in Annex II, regarding products and equipment manufactured after the date of entry into force of the ban (Art. 9, Regulation No. 842/2006):
  - Fluorinated greenhouse gases in footwear (by 4 July 2006);
  - Fluorinated greenhouse gases in non-refillable containers, in windows for domestic use and in tyres; hydrofluorocarbons and perfluorocarbons in non-confined direct-evaporation systems containing refrigerants, and perfluorocarbons in fire protection systems and fire extinguishers (by 4 July 2007);
  - Fluorinated greenhouses gases in other windows and one-component foams (by 4 July 2008);
  - Hydrofluorocarbons in novelty aerosols (4 July 2009).

For accession countries the provisional date for compliance is the date of accession.

- Ensuring compliance with the use restrictions on sulphur hexafluoride or preparations thereof (Art. 8, Regulation No. 842/2006):
  - The use in magnesium die-casting is banned as of 1 January 2008 unless the annual quantity is less than 850 kg;
  - The use for the filling of vehicle tyres is banned as of 4 July 2007)

For accession countries the provisional date for compliance is the date of accession.

- Ensuring that companies involved in installation, maintenance or servicing of stationary refrigeration, air conditioning, heat pump equipment, stationary fire protection systems and fire extinguishers containing certain fluorinated greenhouse gases hold a certificate. A certificate can be obtained from the Certification Body in case it has duly certified personnel certified for all the

relevant activities and in a sufficient number to cover the expected volume of activities. The company to be certified also has to provide evidence that the necessary tools and procedures are available to the personnel engaged in the regulated activities. Companies may apply for interim certificates in case Member States apply an interim certification system for companies and personnel.

- Ensuring that the personnel installing, maintaining, servicing and operating equipment containing fluorinated greenhouse gases have obtained the necessary certification and training and have sufficient knowledge of the applicable legal requirements to ensure emission prevention, the recovery of gases and the safe handling of equipment. The certification has to be issued by the designated Certificate Body and the training has to cover the items set out in the Annex to Regulations 303/2008, 304/2008, 305/2008 and 306/2008. Interim certificates are accepted for staff as regards as regards stationary refrigeration, air conditioning heat pump equipment, stationary fire protection systems and fire extinguishers, under conditions laid down. Staff not yet having received a certificate may carry out one of the listed activities to obtain practical experience, provided this work is monitored by a supervisor (Art. 5(3), Regulation No. 842/2006, Arts. 4-6, Regulation (EC) No 303/2008, Arts 4-6, No 304/2008, Arts 3-4, No 305/2008, and Arts 2-3, No. 306/2008.
- Ensuring that personnel recovering certain fluorinated greenhouse gases from air-conditioning systems in motor vehicles falling within the scope of Directive 2006/40/EC are duly qualified and have received the training attestation, from the Attestation Body, with the minimum requirements set out in the Annex of Regulation (EC) 307/2008. The personnel should have obtained the necessary certification and training and have sufficient knowledge of the applicable legal requirements to ensure emission prevention, the recovery of gases and the safe handling of equipment. However, staff participating in training to acquire the training attestation is allowed to carry out operations with F-gases provided that this work is supervised. Staff not yet having received a certificate may carry out one of the listed activities to obtain practical experience, provided this work is monitored by a supervisor. Furthermore, persons with professional experience acquired before 4 July 2008 and those already having received training attestation under another national certification scheme had until 4 July 2010 to acquire the Training Attestation. (Art. 2, Regulation No. 307/2008).
- Ensuring the efficient containment of refrigeration, air-conditioning and heat-pump equipment, including their circuits, and fire protection systems containing fluorinated greenhouse gases listed in Annex I by taking all possible technical measures to prevent leakage and to repair leakages. These containment measures should include:
  - Regular checking of such equipment by certified personnel (e.g. for larger applications containing 300 kg or more of gases this check has to be carried out every three months, whereas applications containing 30 kg or more have to be checked twice a year and smaller applications only once a year). Where a leakage has been detected and repaired, a check must be carried out within one month of the repair;
  - Ensuring that a leakage detection system is installed for large applications (300 kg or more of gases) and that such systems are inspected annually. For fire protection systems installed prior to 4 July 2007, such a system must be installed by 4 July 2010. Where operators have installed efficient leakage detection systems, the frequency of checks for leakages can be halved (Art. 3(3), (4), Regulation No. 842/2006);
  - The obligation to establish and maintain records on the quantity and type of fluorinated greenhouse gases installed, quantities added, quantities recovered during servicing, maintenance and final disposal, and the identity of the company or technician carrying out servicing or maintenance, including the dates and results of checks. These records must

be disclosed to the national competent authority and the Commission upon request (Art. 3(6), Regulation No. 842/2006);

- Checks for leakages, which must be in accordance with the procedure and standard leakage checking equipment set out in Regulations No. 1497/2007 and No. 1516/2007, including compliance with requirements relating to system records, equipment records, systematic checks, visual and manual checks, the choice of direct and indirect measuring methods, repairs and follow-up checks.

- Ensuring the proper recovery, by properly trained, qualified and certified personnel, of fluorinated greenhouse gases for 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 switch gear in order to ensure that they are recycled, reclaimed or destroyed (Art. 4(1), Regulation No. 842/2006). In addition, Article 4 (2-3) contains specific requirements relating to the recovery, recycling, reclamation and destruction of empty fluorinated greenhouse gas containers, and gases contained in mobile or other equipment. Recovery should take place where appropriate, mainly during the servicing and maintenance of equipment.
- Ensuring the proper labelling of refrigeration products and equipment which contains perfluorocarbons, refrigeration and air-conditioning products and equipment, heat pumps, fire protection systems and fire extinguishers containing hydrofluorocarbons or preparations containing such, switch gear containing sulphur hexafluoride or preparations thereof, and all fluorinated greenhouse gas containers (Art. 7, Regulation No. 842/2006).
- Producers, importers and exporters must comply with the following, more specific, labelling requirements:
  - Products or equipment must bear a label with the text "Contains fluorinated greenhouse gases covered by the Kyoto Protocol" and the abbreviated chemical names for the gases contained or designed to be contained in the equipment using accepted industry nomenclature standards. The quantity of the gases must be expressed in kilograms and bear the text "hermetically sealed" where applicable (Art. 2(1), Regulation No. 1494/2007);
  - Equipment insulated with foam blown with fluorinated gases must not be placed on the EU market unless labelled with the text "Foam blown with fluorinated greenhouse gases" (Art. 2(2), Regulation No. 1494/2007);
  - With respect to equipment that may be filled with gases outside the manufacturing site, the label shall specify the quantity filled by the manufacturer and provide space to add quantities added by those other than the manufacturer (Art. 2(3), Regulation No. 1494/2007);
  - Instructions issued by the competent authorities in the relevant Member State regarding the language(s) to be used on the label must be followed (Art. 2(4), Regulation No. 1494/2007);
  - The above information must be included on a label that is affixed to the product or equipment and the information must stand out clearly from the background of the label and must be sufficiently large to be clearly legible (Art. 3, Regulation No. 1494/2007);
  - In addition to placing labels directly on the product or equipment, labels may also be placed on, or close to, existing nameplates or production information labels, or close to servicing access locations. Air-conditioning products/equipment and heat pumps with separate indoor and outdoor sections connected with refrigerant piping shall be labelled where the refrigerant is initially charged (Art. 4, Regulation No. 1494/2007).

Member States mainly have to provide systems and procedures for labelling, containment measures, the certification and training of technical personnel, and for monitoring compliance with the above requirements. Member States also have to establish effective penalties for infringements and ensure that rules are implemented (Art. 13, Regulation No. 842/2006).

Member States also have to ensure that company and personnel certificates issued in another Member State are fully recognised. (Art 13, Regulation (EC) No 303/2008, Art 13, No 304/2008, Art 8, No 305/2008, and Art 7 No. 306/2008)

2.3 Reporting

Reporting obligations of Producers, importers and exporters:

- Each producer, importer and exporter of fluorinated greenhouse gases producing, importing and exporting gases in larger quantities, has to submit, by 31 March each year (from 31 March 2008), an annual report to the Commission and to the competent authority of the Member State concerned regarding the amounts produced, imported and exported in the preceding year (Art. 6(1), Regulation No. 842/2007):
  - **producers** producing more than one tonne of fluorinated greenhouse gases per year have to report on their total production of each fluorinated gas in the EU, specifying the main categories of applications (e.g. mobile air-conditioning, refrigeration, air-conditioning, foams, aerosols, electrical equipment, solvents and fire protection equipment) in which the substance is to be used, the quantities of each gas it has placed on the EU market, and the quantities of each gas recycled, reclaimed or destroyed;
  - **importers** importing more than one tonne of fluorinated greenhouse gases per year and producers who also import have to report on the quantity of each gas they have imported or placed on the EU market, specifying the main categories of applications (e.g. mobile air-conditioning, refrigeration, air-conditioning, foams, aerosols, electrical equipment, solvents and fire protection equipment) in which the substance is to be used, as well as the quantities of each used gas imported for recycling, reclamation or destruction;
  - **exporters** exporting more than one tonne of fluorinated greenhouse gases per year including any producers who also export have to report on the quantities of each gas exported from the EU as well as quantities of each used gas exported for recycling, reclamation or destruction.
- **Each producer, importer and exporter** to which the reporting obligations apply has to ensure that the format and content of the report is in accordance with the requirements set out in Commission Regulation (EC) No. 1493/2007. This Regulation contains useful instructions, definitions and sections setting out the relevant information to be submitted.

Reporting obligations:

- Member States must **establish reporting systems** applicable to the relevant sectors (producers, importers, exporters, users, recyclers etc.) and ensure that emission data are obtained. Member States should also take the necessary measures to ensure that data submitted by industry in the annual report are considered confidential and that company specific information is not communicated to the public (Art. 6(3), Regulation No. 842/2006);
- The competent authorities in the Member States should also ensure that the relevant sectors have been adequately informed about the reporting format and content for annual reports to the Commission and to the competent national authority, which should be in conformity with Commission Regulation (EC) No. 1493/2007;
- Member States have to, by 4 January 2009, notify the Commission of the names and contact details

of certification bodies and attestation bodies for personnel covered by Regulations 303/2008, 304/2008/, 305/2008 and 306/2008, 307/2008 and of the titles of certificates or training attestations for personnel complying with the requirements set out, using the reporting format set out in Annexes 1-5 of Regulation (EC) No 308/2008. Also Member State have to by 4 January 2009 notify to the Commission the intention to use the derogation from the duty to establish certification and evaluation body in the case fluorinated greenhouse gas-based solvents are not used in a Member State and instead introduce other simplified arrangements that will ensure efficient and fast certification if need be. The notification must be re-submitted in case of new information. (Art. 12(3) (4), Art. 12 (3) (4), Regulation 304/2008, Art. 7, Regulation 305/2008, Art. 6, Regulation 306/2008, Art. 4(3), Regulation 307/2008. The above date for Accession Countries is set provisionally **at the date of accession**.

- Where a Member State has decided to apply an interim certification system for companies and personnel according to Articles 6 or 9, the Commission had to be notified by 4 July 2008 (Art. 12(1), Regulation 303/2008, Art, 12(1), Regulation 304/2008, In that case, Member States had to, by 4 January 2009, notify the Commission of the designated entities entitled to issue interim certificates and the national provisions according to which documents issued by existing certification systems are deemed as interim certificates. (Art. 12(2), Regulation 303/2008, Art. 12(2), Regulation 304/2008). The above dates for Accession Countries are set provisionally **at the date of accession**;
- By 4 July 2008, Member States shall notify the Commission of their intention to apply the temporary derogation for immediate application of the Training Attestation for people with practical experience and those having received other training certificates. This notification should include details on existing qualification systems or conditions based on professional experience on the basis of which personnel are deemed appropriately qualified. The above date for Accession Countries is set provisionally **at the date of accession**.

Note that all the notifications above shall be carried out using the forms in Annex 1-5 set out in Regulation 308/2008.

2.4 Additional legal instruments

The implementation of these Regulations should be considered in conjunction with legislation agreements. Key examples are given below:

- Commission Decision 2010/2/EU of 24 December 2009 determining, pursuant to Directive 2003/87/EC of the European Parliament and of the Council, a list of sectors and subsectors which are deemed to be exposed to a significant risk of carbon leakage as amended by Commission Decision 2011/745/EU of 11 November 2011;
- Commission Decision No. 280/2004/EC of the European Parliament and of the Council of 11 February 2004 concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol (OJ L 49, 19.2.2004);
- Commission Decision 2005/166/EC of 10 February 2005 laying down rules implementing Decision No 280/2004/EC of the European Parliament and of the Council concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol;
- Commission Decision 2007/589/EC of 18 July 2007 establishing guidelines for the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council amended by Commission Decision 2009/73/EC and Commission Decision 2009/339/EC;
- Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020;

- Decision 94/69/EC: concerning the conclusion of the United Nations Framework Convention on Climate Change (UNFCCC);
- Council Decision 2002/358/EC of 25 April 2002 (as last amended by Decision 2010/778/EU) concerning approval on behalf of the EU of the Kyoto Protocol and the UNFCCC and the joint fulfilment of their commitments;
- Directive 2006/40/EC relating to emissions from air-conditioning systems in motor vehicles and amending Council Directive 70/156/EEC (provides for the mandatory introduction of air-conditioning systems with low global warming potential to motor vehicles as of 2011) – also referred to as the EU MAC Directive;
- REACH Regulation (No. 1907/2006) concerning the registration, evaluation, authorisation and restriction of chemicals;
- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste;
- Directive 2008/1/EC on integrated pollution prevention and control (to be repealed as of 07.01.2014 by Directive 2010/75/EU);
- Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control, Recast – transposition deadline 7 January 2013);
- Directive 2000/53/EC on end-of-life vehicles;
- Directive 2002/96/EC on waste electrical and electronic equipment;
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) 1907/2006;
- Directive 94/48/EC (listing certain aerosol generators marketed in the EU);
- Regulation (EC) 443/2009 of the European Parliament and of the Council of 23 April 2009 setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO_2 emissions from light-duty vehicles;
- Commission Implementing Regulation (EU) No 725/2011 of 25 July 2011 establishing a procedure for the approval and certification of innovative technologies for reducing CO_2 emissions from passenger cars pursuant to Regulation (EC) No 443/2009.

3. Implementation

3.1 Key tasks

The key tasks involved in implementing the Regulation is summarised in the checklist below.

Table 17: Regulations on Fluorinated Greenhouse Gases – Key implementation tasks

1	Planning and preparation
1.1	Identify any logistical, administrative and regulatory requirements so that the Regulations can be effectively applied.
1.2	Identify which sectors and activities in the country are affected, including manufacturers, importers and service companies of air-conditioning installations, refrigeration systems, fire protection equipment, high voltage switch gears, air-conditioning systems fitted in certain motor vehicles as well as companies recovering certain F-gas based solvents from equipment, exporters and end-users.
1.3	Undertake cost assessment and plan how implementation costs will be covered and divided between private and public sector.
1.4	Organise meetings with stakeholders (main industrial sectors affected) and public authorities to delineate duties, facilitate compliance and discuss the legal obligations involved.
1.5	Devise information campaigns on the implications of the Regulations amongst directly affected parties, stakeholders and the public.
1.6	Competent authorities should assess capacity-building requirements to process information received, carry out the necessary reporting requirements, ensure regular monitoring of the implementation of the obligations, and ensure that information compiled and submitted to the Commission is accurate and complete.
1.7	Plan the establishment of the required Certification Body, Verification Body and Attestation Body and consider combining the certification and verification body if it makes institutional and financial sense. Introduce mechanisms to ensure that these are independent bodies with appropriate coordination to effectively undertake their tasks.
1.8	Establish a system and procedures for: ▪ Training programmes, certification and training attestation for companies and personnel involved in the installation, maintenance and servicing of equipment and systems referred to in Article 3(1) of Regulation No. 842/2007 as well as to equipment and processes referred to in Regulations 303/2008, 304/2008, 305/2008, 306/2008 and 307/2008 (e.g. refrigeration, air-conditioning, heat-pump equipment, fire protection systems and equipment, high voltage switchgears). The training programmes, certificates and attestations should be in line with minimum requirements set out in the Annexes to the above regions; ▪ The mutual recognition of certificates issued in other Member States; ▪ Ensuring that, as of 4 July 2009, companies dealing with stationary applications such as refrigeration, air-conditioning and heat-pump equipment and fire protection systems containing fluorinated greenhouse gases listed in Annex I do not take delivery of these gases unless the relevant personnel hold certificates and are sufficiently trained. (For accession countries the provisional date is set at the date of accession); ▪ Ensuring appropriate design criteria and specific requirements relating to the form and language of labels affixed to products or equipment containing or intended to contain

	fluorinated greenhouse gases as well as ensuring monitoring of compliance with labelling requirements; ▪ Overseeing the compliance and efficiency of containment measures put in place by operators in the various sectors and ensuring that leakage checks and repairs are only carried out by certified personnel.
2	**Regulation**
2.1	Ensure that **commercial, industrial and public sector organisations** comply with key requirements: ▪ Ensure that no products listed in Annex II are placed on the market after the relevant prohibition dates: – Fluorinated greenhouse gases in footwear; – Fluorinated greenhouse gases in non-refillable containers, in windows for domestic use and in tyres; hydrofluorocarbons and perfluorocarbons in non-confined direct-evaporation systems containing refrigerants, and perfluorocarbons in fire protection systems and fire extinguishers; – Fluorinated greenhouses gases in other windows and one-component foams; – Hydrofluorocarbons in novelty aerosols. For accession countries the provisional date for compliance is the date of accession. ▪ Ensuring compliance with the use restrictions on sulphur hexafluoride or preparations thereof (Art. 8, Regulation No. 842/2006): – The use in magnesium die-casting is banned unless the annual quantity is less than 850 kg; – The use for the filling of vehicle tyres is banned. For accession countries the provisional date for compliance is the date of accession. ▪ Ensure that only officially certified and trained personnel install, maintain, service and operate equipment containing fluorinated greenhouse gases and that they have sufficient knowledge of emission prevention, the recovery of gases and the safe handling of equipment. ▪ Ensure the efficient containment of refrigeration, air-conditioning and heat-pump equipment, including their circuits, and fire protection systems containing fluorinated greenhouse gases, by means of regular checks and the installation of leakage detection systems for larger applications. ▪ Maintain records on the quantity and type of fluorinated greenhouse gases installed, the quantities recovered during servicing, maintenance and final disposal, and the identity of the company or technician carrying out the servicing or maintenance including the dates and results of the checks. These records must be disclosed to the national competent authority and the Commission upon request. ▪ Ensure proper recovery, by properly trained, qualified and certified personnel, of fluorinated greenhouse gases in the cooling circuits of refrigeration, air- conditioning and heat-pump equipment to ensure their recycling, reclamation and destruction. ▪ Ensure the proper labelling of refrigeration products and equipment which contains perfluorocarbons, refrigeration and air-conditioning products and equipment, heat pumps, fire protection systems and fire extinguishers containing hydrofluorocarbons or preparations, switch gear containing sulphur hexafluoride or preparations thereof, and all fluorinated greenhouse gas containers.

2.2	Member States mainly have to provide systems and procedures for labelling, containment measures, the certification and training of technical personnel, and monitoring compliance with the requirements.
2.3	Member States have to ensure that company and personnel certificates issued in another Member State are fully recognised.
2.4	Member States also have to put into place some monitoring and supervisory arrangements to oversee compliance. They should also establish effective penalties for infringements.
3	**Training and Capacity Building**
3.1	Establish a system and procedures for training programmes and for the certification of companies and personnel involved in the installation, maintenance and servicing of equipment and systems and ensure that the staff in the certification body, attestation body and verification body have sufficiently qualified and trained staff to be able to evaluate the trained personnel handling equipment with F-gases.
3.2	Prepare and publish guidelines explaining the duties of the national entity, various certification, verification bodies, the affected industrial sectors and stakeholders.
3.3	Provide technical training for officers in public authorities involved in: ▪ Collecting information and submitting data in accordance with the Regulations; ▪ Monitoring compliance so as to facilitate compliance and a good organisational set-up; ▪ Ensuring the quality control of data submitted from the sectors involved. Also provide training in communication skills for officers who will handle claims, requests for more information and queries.
4	**Reporting**
4.1	Establish reporting systems applicable to the relevant sectors (producers, importers, exporters, users, recyclers etc.) and ensure that emissions data are obtained. The necessary measures should also be taken to ensure that the data submitted by industry in the annual report are considered confidential.
4.2	Ensure that the relevant sectors have been adequately informed about the reporting format and content of its annual report to the Commission and to the competent national authority, in conformity with Commission Regulation (EC) No. 1493/2007.
4.3	Ensure that each producer, importer and exporter of fluorinated greenhouse gases producing, importing and exporting gases in larger quantities submits, by 31 March of each year, an annual report to the Commission and to the competent authority of the Member State containing data on the amounts produced, imported and exported for the preceding year.
4.4	Ensure that producers producing more than one tonne of fluorinated greenhouse gases per year report on their total production of each fluorinated gas in the EU, specifying the main categories of applications (e.g. mobile air-conditioning, refrigeration, air-conditioning, foams, aerosols, electrical equipment, solvents and fire protection equipment) in which the substance is to be used, the quantities of each gas it has placed on the EU market and the quantities of each gas recycled, reclaimed or destroyed.
4.5	Ensure that importers importing more than one tonne of fluorinated greenhouse gases per year, and producers who also import, report on the quantity of each gas imported or placed on the EU

	market, specifying the main categories of applications (e.g. mobile air- conditioning, refrigeration, air-conditioning, foams, aerosols, electrical equipment, solvents and fire protection equipment) in which the substance is to be used as well as the quantities of each used gas imported for recycling, reclamation or destruction.
4.6	Exporters exporting more than one tonne of fluorinated greenhouse gases per year, including any producers who also export, must report on the quantities of each gas exported from the EU as well as the quantities of each used gas exported for recycling, reclamation or destruction.
4.7	Ensure that the reporting is in accordance with the requirements set out in Commission Regulation (EC) No. 1493/2007.
4.8	On the basis of the formats set out in Annex 1-5 of Regulation 308/2008 notify the Commission on: ▪ Names and contact details of certification bodies and attestation bodies for personnel covered by Regulations 303/2008, 304/2008/, 305/2008 and 306/2008, 307/2008 and of the titles of certificates or training attestations for personnel complying with the requirements set out; ▪ Use of temporary derogation from the duty to establish certification and evaluation body in the case fluorinated greenhouse gas-based solvents are not used and instead introduce other simplified arrangements that will ensure efficient and fast certification if need be. The notification must be re-submitted in case of new information; ▪ Application of interim certification system for companies and personnel with information about the designated entities entitled to issue interim certificates and the national provisions according to which documents issued by existing certification systems are deemed as interim certificates; ▪ Intention to apply the temporary derogation for immediate application of the Training Attestation for people with practical experience and those having received other training certificates. This notification should include details on existing qualification systems or conditions based on professional experience on the basis of which personnel are deemed appropriately qualified.

3.2 Phasing Consideration

Once they are parties to the UNFCCC and the Kyoto Protocol, candidate countries should already have a national mechanism for implementing them. They will have formulated a national plan and a national inventory and will have carried out the national communications required by the UNFCCC. The national plan should include action related to fluorinated greenhouse gases, which could include economic instruments.

Before this can be done, national authorities need to ensure the necessary capacity building; institutionally, logistically and in terms of human resources. Considerable time and resources need to be spent to ensure that stakeholders are well aware of the legal implications of the Regulations. The authorities involved should agree on a plan to ensure that the time-frames for the implementation of the obligations stipulated in the Regulations themselves will be respected, whilst guaranteeing the accuracy, transparency and comparability of the information submitted.

In general it is useful to start implement the framework Regulation involving phase out deadlines, preventive measures, reporting obligations. After this, candidate countries could focus on putting into place the certification and verification scheme which involves extensive consultation with the affected companies to ensure that they are full aware of their responsibilities and tasks vis-a-vis the national competent authorities, the Commission and its personnel handling applications with F-gases. The task to inform the workers about the obligation to receive certification and the reason why this is needed should be shared between the competent authority and the industry.

4. Implementation Guidance

At the earliest stage of implementation it is necessary to identify key actors and stakeholders who will be involved in the implementation of the Regulations and arrange discussions between them and/or set up working and coordinating groups. The identification of, and initial discussion with all potential stakeholders will help to achieve the most efficient path to implement the Regulations, to avoid costly errors and to encourage the co-operation of stakeholders in complying with the requirements of the implementation of the Decision.

Since the Regulations require close co-operation with, as well as information from, various sectors, it is recommended that an entity be specifically set up to monitor the implementation of the obligations of these Regulations. Such an entity may be established under the ministry for environment or the environment agency but should have a regulatory cross-sectoral role to ensure that all public and private authorities required to submit information report to one focal point and that information received from various sources is quality controlled and verified by one entity in order to avoid gaps, duplication and fragmentation as well as to ensure accuracy, comparability and transparency.

A monitoring system must be put into place to ensure compliance with the Regulations in terms of ensuring that non-conforming products are not put on the market and that all marketed products containing fluorinated gases are adequately labelled and that containment of the gases is maximised. Plans should also be developed to engage, and to create incentives for, the affected industrial sectors (e.g. foam applications and manufacturers of windows, footwear, car components, refrigerators, and air-conditioning units) in the design and development of alternative gases, products or methods that have a reduced impact on the environment.

Box 17

Example of implementation measures from the United Kingdom

In the UK compliance with the F-Gas Regulations has been continuously increasing much due to the introduction of three separate mechanisms, which mutually enforce each other and greatly contributed to better implementation of and compliance with the F-Gas Regulation. Thanks to these initiatives, out of all known businesses in the contracting chain affected by the Regulation, 80% is estimated to be compliant.

The UK F-Gas Support Team: awareness raising, training and support

The „F-Gas Support" was established by the UK Government in 2008. It oversees the implementation of the Regulation across the different industry sectors and provides help, guidance, legal interpretations and support to end-users, contractors and equipment suppliers and staff working for regulators. It also maintains a central database of contacts covering the relevant industrial sectors. This initiative facilitates implementation and increases compliance. Even though the F-Gas Support team does not have any enforcement powers, it successfully works to raise awareness on requirements under the F-Gas Regulation through several activities:

- General Awareness for the sector: F-Gas Support provides information, writes articles, speaks at conference, etc. It also has a Telephone Help Line, which provides advice about qualifications and company certification, and regularly publishes information sheets (available on www.defra.gov.uk/fgas). F-Gas Support also has an on-going programme of visits and information gathering with those organisations that may pose the greatest risk of causing emissions (e.g. supermarkets, large building operators) and the contractors that carry out installation and maintenance work at their sites;
- Supporting Regulators: the F-Gas Support Team works to educate and support the regulator through specialised "e-training" material on the F gas and Ozone Regulations and by providing F gas expertise to support any regulatory activity;
- Other support: the team provides personnel training, the raising of awareness to hold a valid qualification, specialised technical support and giving of information on company certification.

Company Certification: a key element of the F-Gas Regulation implementation

Example of implementation measures from the United Kingdom

Company Certification requirements are a key element of the implementation of the EC F-Gas Regulations in Great Britain for the stationary fire protection and refrigeration & air-conditioning sectors. Company certification is therefore actively supported by the Governments of the UK and North Ireland and by the F-Gas Support Team specifically. DEFRA (Department for Environment, Food and Rural Affairs) has designated 4 certification bodies (REFCOM, Quidos, Bureau Veritas and Stroma) for the stationary refrigeration & air-conditioning and 1 for the stationary fire protection sector. Between them they have more than 4,700 companies (of which REFCOM has 4,323) registered and this figure continues to rise. The certification bodies are required to audit a percentage of the organisations with a full Company Certificate. The REFCOM Voluntary Scheme is the most common certification schemes in Great Britain and Northern Ireland. Already in 1994, the Register of Companies Competent to Handle Refrigerants (REFCOM) started providing this type of certification by creating a voluntary scheme. Its specificity is that it relies on a web-based information and application system, therefore reaching out to all stakeholders that install, maintain or service stationary refrigeration, air-conditioning and/or heat pump equipment containing or designed to contain F-gas refrigerants. The UK Government has taken most of the main components of the REFCOM voluntary scheme and used this as a model to set the criteria for meeting the F-gas Regulation's requirements for company and operative certification. It expressively is a „light touch and low cost" scheme. These schemes distinguish between businesses wanting interim certification and full certification and ask for different requirements.

Voluntary industry initiatives to promote certification

The Air Conditioning and Refrigeration Industry Board (ACRIB) is working with the UK national sector skills to help encourage employers make the most of the F-Gas individual certification requirements.

In 2010 a leaflet was produced to explain the various types of individual certification and outline the benefits for the employer and the individual. The leaflet was endorsed by the two certification bodies approved to offer qualifications in the UK, City & Guilds of London Institute and CITB Construction Skills. It has been distributed to employers via the delivery network of colleges and independent training providers as well as being made available to individuals joining a voluntary register of certified individuals run by ACRIB. The company certification bodies appointed in the UK have used the leaflet to encourage compliance with the 4th July 2011 deadline. Copies of the leaflet are available at: http://www.acrib.org.uk/.

Source:

http://www.epeeglobal.org/epeedocs/internet/docs/Case_study_F-as_Regulation_in_the_UK_5224.pdf

Box 18

Example of a Dutch model to reduce F-Gas emissions

The Dutch model for certification

"STEK" is the abbreviation of the Dutch system of F-gases Regulation. The Dutch STEK programme has existed since 1992 and is based on emission reduction through containment and regular maintenance. It took 5 years for the STEK system to be fully understood and implemented by all actors in the Netherlands.

Under the STEK programme, some 2,000 companies were certified for stationary cooling systems. These companies were visited and assessed once every 18 months by independent bodies and inspected by government authorities. All STEK certified companies are obliged to keep a Refrigerant Registration at company level and a logbook at the installation indicating the type and quantities of refrigerants used as well as their purpose, i.e. new filling for new cooling circuits, maintenance or recovery. Since 1999 figures have been presented on an aggregated level.

The cost for a STEK certification is approx. € 0.33 per hour per service engineer for 80 to 90% of all companies. This estimation is based on an average cost of € 500 per year (fee and internal administration) per service engineer.

HFC leakage rate

Example of a Dutch model to reduce F-Gas emissions

Before the entering into force of the STEK system in 1992, the average leakage rate in the Netherlands was estimated to be around 20 to 25%. Since the introduction of the STEK system it decreased to an average rate of 3.5%, based on aggregated figures since 1999. This average rate takes into account tailor made installations as well as pre-charged equipment.

Benefits of the STEK system

High awareness about the environmental impact of cooling & heat pump equipment by the industry sector, including certified companies, their personnel and operators, equipment manufacturers and installers increased the quality of both equipment and services. Operators benefit from a higher reliability of their systems and thus higher productivity. There are lower operational costs for operators due to professional leak checks resulting in direct refrigerant and spare part savings. Leak-tight equipment, ensuring optimal refrigerant charge, also results in higher energy performance

For further information please contact: STEK, POSTBUS 12, 3740 AA BAARN, The Netherlands, TEL: +31 35 542 75 20, info@stek.nl; http://www.stek.nl

Box 19

Example of Site Surveys and Practical Guidance for Refrigeration Leakage Reduction – United Kingdom

The Institute of Refrigeration, together with the Carbon Trust, has launched the project „REAL Zero – Refrigerant Emission and Loss Zero". The aim of this project is to achieve zero refrigerant loss. The project offers practical assistance to everyone involved in purchasing, designing, installing, servicing, maintaining and owning refrigeration equipment to help them reduce leaks.

Below two examples of outputs of this project:

REAL Zero site surveys

These surveys are undertaken by advisers who are trained and duly qualified in refrigeration leakage reduction skills. They are RAC professionals who are members of the UK Institute of Refrigeration. A site survey comprises:

- A visual examination of the RAC plant;
- A leak test of readily accessible joints using a hand held electronic leak detector;
- An examination of the F Gas log and other service records;
- Discussions with site personnel who have day to day experience of the operation and service of the RAC equipment.

At the end of the survey, the client is provided with a comprehensive report that includes:

- Executive summary and analysis of the carbon and financial impact of refrigerant leakage, based on site records;
- Benchmarking of refrigerant leakage;
- A review of site compliance with F Gas Regulations, including logs and record keeping, with recommendations for improvements where appropriate;
- Identification of leaks and potential leakage points found during the survey, together with design or installation issues that may affect leakage;
- Recommendations for resolving leaks and other problems identified during the survey;
- A review of the site service and maintenance strategy.

REAL Zero illustrated pocket guide

Example of Site Surveys and Practical Guidance for Refrigeration Leakage Reduction – United Kingdom

REAL Zero has also produced an illustrated pocket guide for easy advice regarding 13 common leakages. This guide gives summarised guidance on:

- Shut-off and ball valves;
- Schrader valves;
- Flare joints;
- Mechanical joints and flanges;
- Pressure relief valves and fusible plugs;
- Shaft seals;
- Condensers;
- Line tap valves;
- Pressure switches;
- O rings;
- Capillary tubes;
- Return bends on evaporators and condensers;
- Condensate tray pipework.

Source: ***http://www.epa.gov/greenchill/downloads/RealZeroIllustratedGuideto13CommonLeaks.pdf***

Box 20

Example of Policy Measures for F-Gas Emission Reductions - Germany

On 24 August 2007, the Federal Cabinet adopted an integrated energy and climate protection programme, with one area focusing on the reduction of fluorinated greenhouse gas emissions recommending the following action measures:

- Issuance of a climate protection Regulation on chemicals;
- Measures that would lead to an early switch from f-gas-operated mobile air conditioning equipment to that with a GWP of considerably less than 150 in new passenger cars;
- Support of development and market launch of particularly energy efficient and ecological refrigeration systems using natural refrigerants;
- Renewal of EC Regulations on F-gases.

On 26 June 2008 the German Bundestag adopted the Ordinance on Climate Protection Against Changes Caused by Release of Certain Fluorinated Greenhouse Gases (*Chemikalien-Klimaschutzverordnung – ChemKlimaschutzV*). It entered into force on 1 August 2008 and aimed to implement the EU F-Gas Regulations. In order to advance development and market launch of particularly energy efficient and ecological refrigeration systems using natural refrigerants, the German Federal Ministry for Environment instituted a Climate Protection Incentive Programme for Commercial Refrigeration Plants as part of the Climate Protection Initiative. Funding is as follows for especially climate-friendly and energy-efficient new systems using natural refrigerants: 25% of net investment costs + bonus. For improvement of energy performance in existing systems, 15-25% of net investment costs are funded. In 2007 the Federal Environment Ministry and Federal Environment Agency discussed matters of practical implementation of EC Regulation Nr. 842/2006 with industry experts which have followed by more rounds of discussions (e.g. with representatives from magnesium foundries, which focused on substitution of SF6 for high pressure die casting and other casting processes. More information:

- Integrated Energy and Climate Protection

Example of Policy Measures for F-Gas Emission Reductions - Germany

Programme: http://www.bmu.de/english/climate/downloads/doc/40589.php

- Climate Protection Incentive Programme for Commercial Refrigeration Plants: http://www.bmu.de/klimaschutzinitiative/doc/41744.php (in German)
- Climate Protective Initiative: http://www.bmu.de/english/climate_initiative/general_information/doc/42000.php

Box 21

Example of Practice from a Member State – Sweden

In Sweden, Regulation No. 842/2006 was implemented through Ordinance SFS 2007:846 on fluorinated greenhouse gases and substances that deplete the ozone layer, which entered into force on 1 January 2008. It supplements the so-called F-Gas Ordinance to ensure that the same conditions apply to fluorinated greenhouse gases as to ozone-depleting substances such as CFCs and HCFCs.

To ensure an adequate reading of the EC Regulation on fluorinated greenhouse gases a table is provided of the situation prior to the Regulations and afterwards, in line with the model provided by the Swedish Environmental Protection Agency.

Prior to 4 July 2007	After entry into force of 2007 Ordinance
Only HFCs were regulated.	HFCs, PFCs and SF6 are now covered.
The owner is responsible for complying with the Regulations on fluorinated gases.	The operator, the person bearing the main responsibility for the equipment, is mainly responsible for complying with the Regulations.
Only professional activities were covered.	All activities, including private activities, are covered by the new Regulations.
Annual controls of equipment regardless of size	Equipment containing less than 3 kg of fluorinated greenhouse gases is exempted from periodic controls.
No requirement to install leakage detection systems.	Leakage detection systems are required for equipment containing more than 30 kg of fluorinated greenhouse gases.
No requirement to recover fluorinated greenhouse gases from high voltage circuits and equipment containing solvents.	Obligation to recover fluorinated greenhouse gases from high voltage circuits and equipment containing solvents.
Control, installation and maintenance must be carried out by accredited companies where at least the work leader is certified.	Control, maintenance and recovery/recycling must only be carried out by certified personnel.
No ban on the marketing of products containing fluorinated greenhouse gases.	Phased-in ban on the marketing of products containing fluorinated greenhouse gases.
No limitation on or bans of SF6.	Restrictions and bans on the use of SF6 in sand casting, permanent mould casting and high-

Example of Practice from a Member State – Sweden	
	pressure die casting of magnesium and the refilling of SF6 for shoes.

Box 22

Example of the Implementation of the ODS and F-Gas Regulations - Hungary

Training and certification systems exist in Hungary since 1994, when the Hungarian Association HRACA was founded. With the implementation of the ODS Regulation (2037/2000), new certification categories (A-F) for personnel and companies were introduced, as well as refrigeration circuits registration, labelling and leakage checking methods. This system took already into consideration existing Member States solutions such as STEK (Netherlands).

The Hungarian Monitoring and Certification Body for Refrigeration (HMCB) was established by the Hungarian Refrigeration and Air-Conditioning Association (HRACA) in 2009 and appointed by the Hungarian Ministry of Environment and Water in June, 2009. HMCB is responsible for implementing and managing the certification and monitoring tasks of ODS and F-Gas Regulations in Hungary. HMCB reaches out to all stakeholders of the stationary and mobile refrigeration and air conditioning sector, through a web-based information system and database, satisfying the administrative and reporting requirements of the Regulations and environmental authorities. When implementing the F-Gas Regulation, Hungary decided to adopt a holistic approach, taking into consideration the following elements:

ODS and F-Gas Regulations merged into one global registration and certification system

- This system covers all stakeholders of the stationary and mobile refrigeration, air conditioning and heat pump sector and allows tracking the entire lifecycle of refrigerants.

Creation of a web-based registration and certification system

- Certification of personnel based on 303/, 307/2008, 1005/2009/EC and EN13313, EN378 using e-learning + test-exams and theoretical + practical assessment methods. Creation of additional personnel categories (Category V-VI-VII) for MAC sector;
- Certification of companies based on 303/2008/EK and integrating already existing information such as refrigerant inventories, databases etc.;
- Creation of a new registration system based on 303/2008/EK for companies handling refrigerants but not being required to interfere with the refrigeration circuit or having their own certification system;
- Mandatory operator and refrigeration circuit registration to monitor the refrigeration circuit, leakage checking, service and maintenance and to control whether operators are respecting their obligations

Creation of an online database:

- IT system with barcode-ID and labelling of all the circuits;
- Online track-keeping of all services (leakage checks, maintenance);
- Refrigerant management system for the entire lifecycle of refrigerants from placing on the Hungarian market, through containment up to recovery, reclaim or disposal;
- Collection and evaluation of data (of the refrigeration circuit database, operators, etc.);
- Access to the database by authorities.

Currently, the HMCB database includes approx. 7600 certified persons, more than 1200 certified and registered companies, over 2000 registered operators and more than 22.000 registered refrigeration circuits.

Further planned developments:

- New, pre-charged equipment and container labelling, tracking;

Example of the Implementation of the ODS and F-Gas Regulations - Hungary

- Fully IT-based refrigerant management system;
- New personnel and/or company categories, as heat-pump installers, gas-equipment installers, energetic inspectors;
- New operator categories such as owners of transport AC&R, installed AC and heating equipment, -systems;
- Registration and administration of different entities, as MAC refrigeration circuits (leakage checking), AC- and heating devices and systems (EPBD energetic inspections).

More information: ***www.hlhmonitoring.hu***

Box 23

Example of Institutional Arrangements and Sanctions – Sweden

The two main authorities involved in monitoring and supervising compliance with EC Regulations are the Swedish Environmental Protection Agency and the Swedish Chemicals Inspectorate. For example, all imports of HFCs to be installed in fire extinguishers are registered at the Swedish Chemicals Inspectorate. Regarding sanctions, the Swedish Environmental Code contains two chapters dealing with sanctions that include penalties (fines and imprisonment) as well as the administrative environmental sanction fee ("miljösanktionsavgifter"). The latter fee can be charged in case of non- compliance with leakage checks or with the reporting duty for the year 2008 or later. The environmental sanction fee is an administrative fee that has as its main objective the confiscation of any possible financial advantage from not complying with environmental Regulations. It supplements the more conventional sanctions and represents a greater financial incentive for industrial operators to comply with environmental Regulations.

5. Costs

Since most of the requirements stemming from the Regulations apply to industrial sectors and other users of fluorinated greenhouse gases, industry is also expected to bear a large share of the costs. The competent authorities in the candidate countries mainly face administrative costs associated with:

- Overall consultation and wide awareness raising regarding the impact of the Regulations on the sector, e.g. manufacturers, retailers, users;
- Establishing overall competent authority, certification body, verification body and the necessary institutional, coordinating structures;
- Devising a training programme and certification system (interim and full) for service personnel and operators maintaining equipment and applications containing F-Gases including leakage checking, repairs, refilling, recovering or destroying greenhouse gases;
- Devising the form, size and language of the labels to be affixed to products and equipment containing or intended to contain fluorinated greenhouse gases;
- Monitoring and enforcing compliance with use restrictions and bans on the placing on the national market of equipment containing fluorinated greenhouse gases that are listed in Annex I to Regulation No. 842/2006;
- Ensuring compliance with the reporting obligations;
- Linking non-compliance with enforcement and sanctions.

Some of these costs can be covered from various administrative fees, such as certificate and training fees. It may also be possible to involve economic instruments that provide incentives for the affected sectors of industry to step up the phasing out of the use of fluorinated greenhouse gases in favour of gases with less or no climate change potential.

As mentioned above, industry will bear the main costs for complying with the Regulations. These costs include the hiring and/or training of personnel in charge of handling equipment and products containing fluorinated greenhouse gases, including charging, maintenance, servicing and end-of-life treatment. These costs apply not only to the manufacturing industry but also to affected waste operators and private users of containers with greenhouse gases. Some of the sectors concerned include:

- Manufacturers and users of stationary fire protection system and fire protection equipment;
- Manufacturers and commercial users of high-voltage switchgears;
- Manufacturers and commercial users (retailers) of refrigerators;
- Manufacturers of windows, tyres, footwear, foams and aerosols;
- Manufacturers and suppliers of air-conditioning units in vehicles;
- Activities recovering certain fluorinated greenhouse gas-based solvents from equipment.

Box 25

Example of Introducing a Charge on Fluorinated Gases – Sweden
On the basis of the experience in Denmark, the Swedish EPA has introduced an environmental charge on these gases on a par with the current carbon dioxide tax for the manufacturing industry. The size of the fee is approximately SEK 190 per kg of carbon dioxide equivalent, and it will be charged on the import of a fluorinated gas or a product containing a fluorinated gas. The charge should be repaid on the export of products containing fluorinated gases and on destruction. Exemptions from the charge should be considered for mobile cooling systems/refrigerated containers, for gases in air-conditioning units in motor vehicles and

for medical aerosols. A charge in line with the carbon dioxide tax relief rate for the manufacturing industry (SEK 190 per kg of carbon dioxide) would bring about a decrease in these emissions at a cost that is on a par with that of reducing carbon dioxide emissions in sectors that pay the reduced level of carbon dioxide tax. It is estimated that the new charge proposed on fluorinated gases will provide revenue of around SEK 75 million per year.

The Regulations on Ozone Depleting Substances

Official Title:

Regulation (EC) No. 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer. (*OJ L 286, 31.10.2009*).

Commission Regulation (EU) No 744/2010 of 18 August 2010 amending Regulation (EC) No 1005/2009 of the European Parliament and of the Council on substances that deplete the ozone layer, with regard to the critical uses of halons (*OJ L 218, 19.8.2010*).

Commission Regulation (EU) No 291/2011 of 24 March 2011 on essential uses of controlled substances other than hydrochlorofluorocarbons for laboratory and analytical purposes in the Union under Regulation (EC) No 1005/2009 of the European Parliament and of the Council on substances that deplete the ozone layer (*OJ L 79, 25.3.2011*).

Commission Regulation (EU) No 537/2011 of 1 June 2011 on the mechanism for the allocation of quantities of controlled substances allowed for laboratory and analytical uses in the Union under Regulation (EC) No 1005/2009 (*OJ L 147, 2.6.2011*).

Commission Decision 2010/372/EU on the use of controlled substances as process agents under Article 8(4) of Regulation (EC) No. 1005/2009 (*OJ L 169, 3.7.2010*).

1. Summary of Main Aims and Provisions

The European Union has a strong commitment to protect the ozone layer. To facilitate its recovery the EU has implemented legislation that goes beyond its obligations under international agreements. The consumption of ozone depleting substances, as far as controlled under the Montreal Protocol, has already been reduced to zero since 2010, ten years before the international target of 2020.

To protect the ozone layer the international community has established the Vienna Convention and the Montreal Protocol on substances that deplete the ozone layer in 1987. The European Union and its Member States are at the forefront of ozone layer protection with a policy that often goes beyond the requirements of the Montreal Protocol.

Furthermore, EU has put in controls for any use of ozone depleting substances that are not considered as consumption under the Montreal Protocol, such as uses of ODS as feedstock in the chemical industry. In particular the EU has banned the use of the toxic methyl bromide for any kind of fumigation.

The EU legislation acted as a driver for the development of innovative technologies such as alternatives for methyl bromide alternatives, new blowing agents for insulation foam, CFC-free metered dose inhalers for the treatment of asthma, and the creation of innovative fire fighting systems on board ships and airplanes which do not use halons.

Internationally consumption of ozone depleting substances has reduced by 95%. Much remains to be done on international level to ensure the continuous recovery of the ozone layer and to reduce the impact of ODS on climate change such as:

- The recovery of ODS existing in equipment and buildings;
- Ensuring that climate friendly alternatives are used to replace ODS;
- The continuous use of ODS worldwide is further reduced and that the existing measures are properly implemented;
- The prevention of illegal trade.

Regulation (EC) No 2037/2000 the production and placing on the market of chlorofluorocarbons (CFCs), other fully halogenated chlorofluorocarbons, halons, carbon tetrachloride, 1,1,1-trichloroethane, hydrobromofluorocarbons, bromochloromethane and methyl bromide have been phased out and the placing on the market of those substances and of products and equipment containing those substances is thus prohibited. Until 1 January 2010 it was permitted to use virgin as well as recycled and reclaimed (H)CFCs in existing RAC systems[1]. It is now also appropriate to progressively generalise the ban on the use of those substances for the maintenance or servicing of such equipment.

A major review was undertaken of 2037/2000 Regulation, which amongst other resulted in a study in 2007 (Review of the implementation of Regulation (EC) No 2037/2000 on substances that deplete the ozone layer)[2] on its implementation. Due to the numerous amendments of Regulation (EC) No

[1] 'RAC-systems' cover three different types of stationary systems:

- Refrigeration systems: Equipment to cool products or storage spaces below ambient temperature, e.g. retail refrigerated displays, cold stores, etc.
- Air-conditioning systems: Equipment to cool buildings to a comfortable ambient temperature, ranging from small units to cool a single room to large chillers that cool whole building
- Heat pumps: Heating devices that use a refrigeration machine to extract energy from a waste heat source and deliver useful heat.

[2] Review of the implementation of Regulation (EC) No 2037/2000 on substances that deplete the ozone layer, summary report prepared for the European Commission by Milieu Ltd. and Ecosphere Lda development, December 2007. Available at:

2037/2000, it was recast in Regulation (EC) No. 1005/2009 in the interests of clarity. Hence the 2009 Regulation repealed and replaced Regulation 2037/2000 and its many amendments[3] with effect from 1 January 2010.

Regulation (EC) 1005/2009 on substances that deplete the ozone layer came into force on 1 January 2010 and replaced the previous Ozone Regulation EC 2037/2000 which has now been repealed. This Regulation lays down rules on the production, import, export, placing on the market, use, recovery, recycling, reclamation and destruction of substances that deplete the ozone layer, on the reporting of information related to those substances and on the import, export, placing on the market and use of products and equipment containing or relying on those substances.

In view of the responsibilities of the Union under Decision X/14 of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, Article 8(4) of Regulation (EC) No 1005/2009 limits the use of controlled substances as process agents to 1,083 metric tonnes per year within the EU and limits the emissions from process agent uses to 17 metric tonnes per year within the EU.

Under the Regulation the production, import and export of ozone depleting substances is subject to licensing. These activities, as well as the destruction of ODS, feedstock uses and process agent uses, are also subject to annual reporting. Furthermore, the use of ODS for laboratory and analytical uses (including the placing on the market for such uses) is subject to registration. For these purposes the European Commission operates electronic databases.

Furthermore, the Regulation addresses:

- The phase out of CFCs (chlorofluorocarbons) and virgin HCFCs (Hyrdochlorofluorocarbons) and – Article 5 and Article 11.5

After 1 January 2010 all CFCs and virgin HCFCs cannot be used for all sizes of RAC systems. By way of derogation from Article 5, until 31 December 2019, hydrochlorofluorocarbons may be placed on the market for repackaging and subsequent export. Any undertaking carrying out the repackaging and subsequent export of HFCFs shall register with the Commission, indicating the controlled substances concerned, their estimated annual demand and the suppliers of those substances, and shall update this information when changes occur.

- The phase out of recycled and reclaimed HCFCs – Article 11.4 and 11.5

After 31 December 2014 the use of recycled and reclaimed HCFCs cannot be used for maintenance and servicing for all sizes of RAC systems. The ban on the "use" of HCFCs specifically means use for servicing and maintenance. It will remain legal to continue using RAC equipment containing HCFCs beyond the phase-out dates providing they do not require maintenance that involves the servicing and maintenance of the HCFCs in the system.

- The **licensing and authorisation of production of certain controlled substances**: The Regulation prohibits production, import, export, placing on the market and use of the ozone depleting substances listed in Annex I to the Regulation. There are certain exemptions to the prohibitions. Most of them are subject to licensing, authorisation or registration. They include:

http://ec.europa.eu/dgs/environment/pdf/summary_report.pdf. The Summary Report of the review is based on two more detailed reports: the Regulatory Options Report and the Impact Assessment Report

[3] Regulation (EC) No. 2038/2000 of the European Parliament and of the Council of 28 September 2000 (OJ L 244 25 29.9.2000), Commission Decision 2003/160/EC of 7 March 2003 (OJ L 65 29 8.3.2003), Regulation (EC) No. 1804/2003 of the European Parliament and of the Council of 22 September 2003 (OJ L 265 1 16.10.2003), Commission Decision 2004/232/EC of 3 March 2004 (OJ L 71 28 10.3.2004), Commission Regulation (EC) No. 2077/2004 of 3 December 2004 (OJ L 359 28 4.12.2004), Commission Regulation (EC) No. 29/2006 of 10 January 2006 (OJ L 6 27 11.1.2006), Regulation (EC) No. 1366/2006 of the European Parliament and of the Council of 6 September 2006 (OJ L 264 12 25.9.2006), Commission Regulation (EC) No. 1784/2006 of 4 December 2006 (OJ L 337 3 5.12.2006), Council Regulation (EC) No. 1791/2006 of 20 November 2006 (OJ L 363 1 20.12.2006), Commission Regulation (EC) No. 899/2007 of 27 July 2007 (OJ L 196 24 28.7.2007)

- production of controlled substances other than HCFCs for essential laboratory and analytical uses (Art 10.6);
- use of controlled substances other than HCFCs for essential laboratory and analytical uses (Art 10.6);
- placing on the market of HCFC for re-packaging (Art 11.5);
- import of controlled substances and of products and equipment containing or relying on those substances (Art 15);
- Export of controlled substances and of products and equipment containing or relying on those substances (Art 17).

Please note that it is the **Commission** that issues the above licenses of controlled substances or products and equipment containing or relying on controlled substances and informs the Competent Authority of the Member State on that license (Art 18).

The **competent authority** (or authorities) implement the requirements of the Regulation, particularly on particular authorisations, the **control** of imports and exports of controlled substances to and from Member States, third countries, states not party to the protocol and the candidate countries, submissions of notifications and requests for temporary derogations for certain uses to the Commission. (Regulation (EC) No 1005/2009, Articles 10(7) and 10(8), 11(6), 11(8), 12(3), 13(4), 14(2), 17(3), 22(5), 23(3), 23(4), Art 26, Art 28 and Art 29). Reference on the detailed obligations of Member States are mentioned in paragraph 2.2

- The prevention/minimisation of (H)CFC leakage (Article 23.1 and 23.2)

Undertakings should take all practical precautionary measures to prevent and minimise any emissions of (H)CFCs. The leak checking requirements for stationary RAC systems now mirror those for F-gases.

- **Record keeping** (Articles 11.7 and 23.3)

The record keeping requirements will depend on whether mobile or stationary equipment is operated and on the controlled substance (refrigerant) charge in that equipment.

- Article 11.7 (first paragraph): Applicable from 2010 for stationary and mobile systems with 3 kg or more. When recycled or reclaimed HCFC refrigerants are added to either a mobile or a stationary system containing 3 kg or more a record needs to be kept to show what refrigerant has been added, in what quantity and who (name of person or company) did this servicing or maintenance;
- Article 11.7 (second paragraph): Applicable from 2010 for all stationary and mobile systems, irrespective of refrigerant charge. When recycled or reclaimed HCFC refrigerants are added to a system a record needs to be kept which should show who supplied the reclaimed HCFCs and of the source of recycled HCFCs;
- Article 23.3: Applicable from 2010 for all stationary systems with 3 kg or more. For all stationary systems containing 3 kg or more a record needs to be kept. This record should show the quantity and type of controlled substance added and the quantity recovered during maintenance, servicing and final disposal of the equipment. Records also need to show other relevant information including the identification of the company or technician performing the maintenance or servicing, as well as the dates and results of the leakage checks carried out.

- **Labelling** – Article 11.6: Applicable from 2010 for all systems containing HCFC refrigerant. When recycled or reclaimed HCFCs are added to RAC equipment it should then be labelled.
- **Gas recovery** – Article 22.1: Applicable from 2010 for all sizes of RAC systems containing ODS

refrigerant (controlled substances). If an ODS refrigerant needs to be removed from a system (e.g. to gain access to part of a system for maintenance or during system decommissioning at the end of life) it must be properly recovered by certified personnel. After recovery the refrigerant can be reused or sent for reclamation, recycling or destruction.

- **Use of appropriate trained personnel** (Articles 22.5 and 23.4): Applicable from 2010 for all sizes of RAC systems containing ODS refrigerant (controlled substances). Personnel carrying out leak checking, gas recovery or other refrigerant handling activities, such as plant maintenance, must have a suitable refrigerant handling qualification.
- **The ban of non-refillable containers (**Article 5.2): Applicable from 2010. The use of non-refillable containers for transporting or storing ODS refrigerants (controlled substances) is banned.
- The Competent Authority is advised to keep track of and record all above licenses in order to be able to perform its obligatory tasks in relation to **reporting, inspection and enforcement** (Art 26, Art 28 and Art 29).

Commission Regulation (EU) No 744/2010 of 18 August 2010 is amending Regulation (EC) No 1005/2009 with regard to the critical uses of halons. Regulation 744/2010 concerns Halon 1301, halon 1211 and halon 2402 (listed as controlled substances in Group III of Annex I to Regulation (EC) No 1005/2009), whose production in the EU is banned since 1994 but their use is permitted for certain critical uses as set out in Annex VI to Regulation (EC) No 1005/2009. Pursuant to scientific and technical studies increasingly there are technically and financially feasible alternatives to halons in fire extinguishing equipment and thus the Annex of Regulation 744/2010 (replaces Annex VI to Regulation 1005/2009) and establishes more ambitious, for each application, cut-off dates after which the use of halons for new equipment and new facilities would not be a critical use and the installation of a halon extinguisher or fire protection system would therefore not be permitted.

In addition, three implementing Regulations were adopted:

- **Commission Regulation (EU) No 291/2011** of 24 March 2011 on essential uses of controlled substances other than hydrochlorofluorocarbons for laboratory and analytical purposes in the Union under Regulation (EC) No 1005/2009: This Regulation sets out an annex with permitted and non-permitted essential uses of controlled substances (except for HCFCs). The Regulation extends the list of non-permitted uses;
- **Commission Regulation (EU) No 537/2011** of 1 June 2011 on the mechanism for the allocation of quantities of controlled substances allowed for laboratory and analytical uses in the Union under Regulation (EC) No 1005/2009: This Regulation sets out a 3 phase mechanism for determining the quantity for allocation for „new" companies (i.e. had no production or import in years 2007-2009. The allocation mechanism ensures that all undertakings requesting a new quota receives an appropriate share of the quantities to be allocated;
- **Commission Decision 2010/372/EU** on the use of controlled substances as process agents under Article 8(4) of Regulation (EC) No. 1005/2009: This Decision implements Article 8(4) of Regulation 1005/2009 in terms of setting out a list of eight companies and associated quantities of substances. This list is based upon reports submitted by Member States and adjusted to ensure that the Union stays within the total limits of using controlled substances. The allocation of the make-up quota should be based on the average needs in the years 2005 to 2008. The Decision allows for the transfer of quota between undertakings listed in the Annex to increase the flexibility for undertakings to respond to changing market needs but must cease with the decommissioning of the installation for which it was granted.

2. Principal Obligations of Member States

2.1 Planning

Firstly, Member States and candidate countries are advised to **assess which sectors and activities would be affected** by these Regulations. The Regulations are of particular interest to all organisations, which produce, recover, recycle, reclaim, use, destroy or trade in ozone-depleting substances (ODS) or which operate refrigeration, air-conditioning or heat pump equipment, or fire protection systems, which contain ODS.

The Regulations will also be of interest to associations and members of associations which manufacture, install, service or recover ODS from commercial or domestic equipment which contain or rely on ODS, to producers of ODS, to those responsible for offshore oil and gas installations, and to enforcement authorities.

Companies in the stationary refrigerant and air conditioning sectors should be aware that the EC Regulations include a provision covering the phase out of hydrochlorofluorocarbons (HCFCs) usage. The use of virgin HCFC to service and maintain existing refrigeration and air conditioning has been banned since 1 January 2010.

Companies involved in the fire protection systems and fire extinguisher sector should be aware that Halons are strictly monitored. The critical uses for halons are set out in Commission Regulation (EC) 744/2010, outlined above.

There are legal obligations for companies and qualification requirements for personnel working in the industry sectors as well as other requirements relating to:

- Recovery of ODS from equipment during maintenance, servicing and at end of life;
- Leakage checking of equipment;
- Reporting of annual ODS import, export, production and destruction figures;
- Provide information on annual critical uses of halons figures and illegal trade for monitoring and annual reporting by the Competent Authority;
- Labelling of ODS and equipment containing ODS (and inclusion of information in instruction manuals);
- Placing on the market prohibitions for ODS in various products and equipment.

In order to ensure cost-efficient implementation and enforcement, above sectors need to **receive sufficient information about the legal and administrative requirements** and that awareness of the workings of these Regulations is enhanced. In this context, also the workers in installations performing certain activities have to be informed about the **obligation to acquire the necessary qualifications.**

On the basis of Regulation No. 1005/2009 and the ancillary Regulations, Member States mainly have obligations to administer, monitor and ensure the compliance of industry with the requirements. The planning tasks include the following:

- Appoint a **competent authority** (or authorities) to implement the requirements of the Regulation, particularly on particular authorisations, the control of imports and exports of controlled substances to and from Member States, third countries, states not party to the protocol and the candidate countries, submissions of notifications and requests for temporary derogations for certain uses to the Commission. (Regulation (EC) No 1005/2009, Articles 10(7) and 10(8), 11(6), 11(8), 12(3), 13(4), 14(2), 17(3), 22(5), 23(3), 23(4), Art 26, Art 28 and Art 29);
- Establish **penalties** for non-compliance with the requirements of the Regulation, which had to be notified to the Commission by 30 June 2011 at the latest as well as any amendments affecting the

penalties. Also note that the illegal import, export of ODS or products containing these are considered a criminal offence pursuant to the Environmental Crimes Directive (Art. 29, Regulation (EC) No 1005/2009, Art. 3(f), Directive 2008/99/EC);

- Take measures to **promote recovery, recycling, reclamation and destruction of controlled substances**. (Art. 22(5), Reg. (EC) No 1005/2009);
- Lay down the **minimum training requirements for personnel** involved in recovery, recycling, reclamation and destruction of controlled substance (Art. 22(5) Reg. (EC) No 1005/2009), as well as leakage control of RAC equipment (Art. 23(4) Reg. (EC) No 1005/2009). Note also the training and qualification requirements for personnel responsible for maintaining equipment containing those substances in order to prevent leakage of regulated substances stemming from the F-Gas Regulations);
- Establish **inspection systems** which targets compliance of undertakings following a risk-based approach, including inspections on imports and exports of controlled substances as well as of products and equipment containing or relying on those substances. In addition monitoring and inspection systems are to be set up for recovering, for the purposes of recycling, reclamation or ecologically acceptable destruction of controlled substances contained in (Art. 22, Reg. (EC) No 1005/2009):
  - Refrigeration and air-conditioning equipment and heat pumps;
  - Equipment containing solvents;
  - Fire protection equipment and fire extinguishers.

Note that it is also important to take into account the certification and training requirements for personnel handling recycling, reclamation and destruction of F-Gases under F-Gas Regulations and the WEEE Directive regarding electrical and electronic equipment containing controlled substances.

The guidance set out in Recommendation 2001/331/EC on environmental inspections should also be taken into account[4] (Art. 28, Reg. (EC) No 1005/2009).

- Establish systems to allow for companies having received annual use quotas to **transfer quotas** amongst the companies after prior notification to the Commission (Decision 2010/372);
- The Commission has established a system to ensure that **new quotas for the production and use** of controlled substances for laboratory and analytical purposes comply with the allocation mechanism set out in Regulation 537/2011;
- Put into place **safety mechanisms** to ensure that the list of non-essential uses of controlled substances (other than HCFCs) are not allowed (Regulation 291/2011);
- Set up a system to ensure that halons may only be placed on the market by undertakings authorised by the competent authority **to store halons** for critical uses as set out in Annex VI. (Art 13(1)).

[4] Recommendation 2001/331/EC of the European Parliament and of the Council of 4 April 2001 providing for minimum criteria for environmental inspections in the Member States.

2.2 Regulation

2.2.1 Obligations of the commercial, industrial and public sector organisations (undertakings)

The commercial, industrial and public sector organisations, which produce, recover, recycle, reclaim, use, destroy or trade in ozone-depleting substances (ODS) or which operate refrigeration, air-conditioning or heat pump equipment, or fire protection systems, which contain ODS (as indicated in paragraph 2.1 above) are responsible for taking several measures under the Regulations.

There are legal obligations for above sectors and qualification requirements for personnel working in these sectors. Hereunder the most important provisions applicable to the sectors are outlined:

- Ensure compliance with the prohibition of the production, placing on the market and use of controlled substances, **with the following exemptions, most of which are subject to licensing:**
  - controlled substances may be produced, placed on the market and used as feedstock, provided that the labelling clearly indicates that the substance may only be used as feedstock also taking into account possible labelling requirements under Directive 67/548/EEC, Directive 1999/45/EC and Regulation No 1272/2008 and further labelling requirements of the Commission (Arts. 5, 7, Reg. 1005/2009);
  - production, placing on the market, and use of controlled substances for essential laboratory and analytical uses where Commission allows production and import for certain uses set out in the annex to Regulation 291/2011 within regulated quantities, within a certain time period and for certain listed users. Such uses provide that registration and licensing is ensured in accordance with Article 10 and Article 11.2.
  - Regulation 537/2011 sets out the allocation mechanism applying to producers or importers who have not received a production or import licence for 2007-2009. The marketing and distribution must be in accordance with the requirements of Annex V.
  - containers with controlled substances to be used for these uses must be labelled clearly indicating that the substance may only be used for laboratory and analytical uses also taking into account possible labelling requirements under Directive 67/548/EEC, Directive 1999/45/EC and Regulation No 1272/2008 and further future labelling requirements of the Commission. Such labels must be in accordance with the form and content to be decided by the Commission.
  - in accordance with Article 11(1), virgin HCFCs may be produced provided that:
    1) the calculated level of its production of HCFCs in each 12-month period until 31 December 2013 does not exceed 35 % of the calculated level of its production of HCFCs in 1997;
    2) the calculated level of its production of HCFCs in the period from 1 January 2014 to 31 December 2014 and in each 12-month period thereafter until 31 December 2016 does not exceed 14 % of the calculated level of its production of HCFCs in 1997;
    3) the calculated level of its production of HCFCs in the period from 1 January 2017 to 31 December 2017 and in each 12-month period thereafter until 31 December 2019 does not exceed 7 % of the calculated level of its production of HCFCs in 1997;
    4) it produces no HCFCs after 31 December 2019.
  - **reclaimed HCFCs** may be placed on the market and used for the maintenance or servicing of existing refrigeration, air-conditioning and heat pump equipment **until 31 December 2014**, provided that the container is labelled with an indication that the substance has

been reclaimed and with information on the batch number and name and address of the reclamation facility. (Article 11(3))

- **recycled HCFCs** may be used for the maintenance or servicing of existing refrigeration, air-conditioning and heat pump equipment until **31 December 2014,** provided that the they have been recovered from such equipment and may only be used by the undertaking which carried out the recovery as part of maintenance or servicing or for which the recovery as part of maintenance or servicing was carried out. (Article 11(4)), If the equipment has a fluid charge of 3 kgs or more, the undertaking has to keep a record of the type of substance recovered and added, and of the company and technician which performed the maintenance and servicing. (Article 11(7))
- HCFCs may be placed on the **market for repackaging and subsequent export until 31 December 2019**. Any undertaking carrying out the repackaging and subsequent export of HCFCs shall register with the Commission, indicating the controlled substances concerned, their estimated annual demand and the suppliers of those substances, and shall update this information when changes occur (Article 11(5));
- when reclaimed or recycled HCFCs are used for maintenance or servicing, the refrigeration, air-conditioning and heat pump equipment concerned shall be adequately **labelled** according to the requirements set in Article 11(6);
- controlled substances may be produced, placed on the market and used as **process agent** in installations existing on 1 September 1997, and where emissions are insignificant. The Commission has set out in Decision 2010/372 (which implements Art. 8(4) of Regulation 1005/2009) a list of eight companies that, from 1 January 2010, were permitted to use controlled substances as process agents in make-up within the annual quotas and emission levels set out in the Annex (but not after definite decommissioning of the installation for which the quota was granted). The companies listed may choose to transfer the make-up quota amongst themselves after notifying the Commission and having obtained its approval (Art. 8, Regulation 1005/2009, Arts. 2-3, Decision 2010/372).

- Ensure compliance with the prohibition of the placing on the market of products and equipment containing or relying on controlled substances, unless:
  - it is placed on the market for reclamation within the EU or for destruction within the EU in accordance with the requirements for destruction referred to in Article 22(1);
  - the use of the respective controlled substance is authorised in accordance with Article 10, Article 11(2) or Article 13 or has been authorised on the basis of Article 3(1) of Regulation (EC) No 2037/2000. (Art. 6(1), Reg. 1005/2009)
- Prohibit the use and ensure the decommissioning (except for uses referred to in Article 13(1)) of fire protection systems and fire extinguishers containing halons shall be prohibited and shall be decommissioned. (Art. 6(2), Reg. 1005/2009)
- Ensure that personnel involved in recovery, recycling, reclamation and destruction of controlled substance meet the minimum qualification requirements laid down by the competent authority. (Art. 22(5). Reg. (EC) No 1005/2009). (*Note also the certification and training requirements for personnel handling recycling, reclamation and destruction of F-Gases under F-Gas Regulations and the WEEE Directive regarding electrical and electronic equipment containing controlled substances*).
- Ensure recovering, for the purposes of recycling, reclamation or ecologically acceptable destruction of controlled substances contained in: (Art. 22, Reg. (EC) No 1005/2009)
  - refrigeration and air-conditioning equipment and heat pumps;

  - equipment containing solvents;
  - fire protection equipment and fire extinguishers.

- Where recovering or reclaiming is not possible, ensure that the final destruction of the controlled substances and equipment which contained such are destroyed in line with the approved technologies listed in Annex VII. (Art. 22(2), Reg. (EC) No 1005/2009)
- Ensure that the use of halons, as critical use, in fire fighting equipment is in line with the phase out schedule with a cut-off date and end date set out in Regulation (EC) No 291/2011, i.e.:
  - 2010: cut-off date for the majority of applications for new equipment and new facilities, where halon extinguishers and fire protection systems are no longer necessary or are no longer being installed;
  - 2011: cut-off date for some military ground vehicle and aircraft applications for which alternatives are considered now to be available but which have not been implemented during development programmes now nearing completion and for which modifications might no longer be technically and economically feasible.
  - 2014: cut-off date for the aircraft engine nacelle and cabin portable extinguisher applications, which would correspond to the time-frame for the anticipated implementation of an equivalent restriction through the ICAO.
  - 2018: cut-off date for the aircraft cargo compartment application where alternatives have not yet been identified but for which it can reasonably be expected that, following further research and development, alternatives will be available by that date for installation in new aircraft being submitted for type certification.
  - 2040: cut-off date for some military or civil aircraft applications where alternatives have not yet been identified.
- Ensure that imports and exports of controlled substances are only allowed if meeting the requirements laid down in Art. 15(2) and 17(2) of Reg. 1005/2009. All importers and exporters must hold an import or export licence issued by the Commission after verifying that the importer complies with Arts. 16 and 20 of Reg. 1005/2009. Each exporter must notify the Commission of any changes in data and information that may occur during the validity of the authorised period.
- By the date specified in a notice issued by the Commission, importers of:
  - controlled substances if they are used for laboratory and analytical or critical uses;
  - controlled substances if they are used as feedstock;
  - controlled substances if they are used as process agents.

  shall declare to the Commission the anticipated demand, specifying the nature and quantities of controlled substances needed. On the basis of those declarations the Commission establishes quantitative limits to the imports of those substances. (Art. 16 of Reg. 1005/2009)
- Ensure that the import and export of controlled substances, and of products and equipment containing or relying on these substances, from and to states that are not parties to the Montreal Protocol or territories not covered by the protocol, only are allowed in case Arts. 20 (2), (3) are complied with.
- Take precautionary measures to prevent the escape of controlled substances, e.g. leakages or other emissions comprising period leakage checking (from once a year to once every third month depending on weight of the charge) and repairs. Also ensure that such checks and repairs are duly documented and that they are performed by staff having the necessary qualifications (Art. 23, Regulation (EC) No. 1005/2009).

- Ensure compliance with the prohibition of production, import, placing on the market, use and export of new substances set out in Part A of Annex II to Reg. (EC) No 1005/2009 (currently only Dibromodifluoromethane (halon-1202) is prohibited, unless used as feedstock or for laboratory and analytical uses, or imported for transit through the customs territory of the EU or imports under the temporary storage, customs warehousing or free zone procedure (Art. 24, Reg. 1005/2009).
- Register and submit application to the Commission for licences to produce and import controlled substances for certain "essential" uses, i.e. laboratory and analytical uses (Art. 10, Regulation (EC) No. 5005/2009).

2.2.2 Obligations of the Member States

Member States mainly have to provide systems and procedures for the development of minimum qualification requirements of technical personnel, and for monitoring compliance with the requirements as stated in paragraph 2.2.1, including inspection and enforcement.

- Lay down the minimum training requirements for personnel responsible for maintaining equipment containing controlled substances in order to prevent leakage of regulated substances and where possible establish coordination with the training schemes established for personnel handling equipment with F-Gases under the F-Gases Regulations.
- Carry out inspection, taking a risk-based approach, especially targeting those activities representing the highest risk of illegal trade or emission of controlled substances. In the inspection activities the Member States should take into account the guidance set out in Recommendation 2001/331/EC on environmental inspections. A Member State should also on the request of another Member State be competent to carry out inspections of undertakings or investigations of undertakings suspected of being engaged in the illegal movement of controlled substances and which are operating on the territory of that Member State. (Art. 28, Reg. (EC) No 1005/2009).
- Establish and impose penalties for non-compliance with the requirements of the Regulation (production, importation, exportation, placing on the market or use of ozone-depleting substances), Effective, dissuasive and proportionate penal sanctions are to be imposed on the perpetrator (Art 29 Reg. (EC) No 1005/2009 and Art. 3, Environmental Crimes Directive (2008/99/EC)).
- As regards the import and export licenses issued by the Commission, the Competent Authority of a Member State **may inform or instruct the applicant** for a license on any further information deemed necessary to be included in the application for a license (Art 18(3 i)).

As indicated earlier it is the **Commission** that issues the licenses of controlled substances or products and equipment containing or relying on controlled substances and informs the Competent Authority of the Member State on that license.

In relation to authorisations the competent authorities of Member States:

- May grant **an additional authorisation** to an undertaking to confirm the Commission licenses for the production of controlled substances other than HCFCs for essential laboratory and analytical uses. The Commission needs to be notified in advance of its intention to issue any such authorisation (Art 10.7);
- May **authorise** that producer produces or exceeds the calculated and licensed levels of production of controlled substances other than HCFCs for essential laboratory and analytical uses. This can only be done when it satisfies any essential laboratory and analytical uses. The Commission needs to be notified in advance of its intention to issue any such authorisation (Art 10.8);
- **Authorise** that producer to exceed the calculated levels of production laid down in Article 10 and

Article 11(1)[5] for the purpose of industrial rationalisation The Commission needs to be notified in advance of its intention to issue any such authorisation (Art 14(2)).

In relation to **requests** for authorisations and derogations the competent authorities of Member States:

- **Request authorisation to the Commission** a time-limited exemption to allow the use and placing on the market of HCFCs and of products and equipment containing or relying on HCFCs where it is demonstrated that, for a particular use, technically and economically feasible alternative substances or technologies are not available or cannot be used. (Art 11 (8));
- In case of an emergency (where unexpected outbreaks of pests or diseases so require) the competent authorities can **request authorisation the Commission** for temporary production, placing on the market and use of methylbromides (Art 12(3));
- **Request a derogation to the Commission** from the end-dates of the placing in the market of halons, in case the end dates will be specified by the Commission, for the uses set out in Annex VI (Art 13(4));
- **Request to the Commission the authorisation of export** of products and equipment containing HFCFs where it is demonstrated that in view of the economic value and the expected remaining lifetime of the specific good, the prohibition of export would impose a disproportionate burden on the exporter. (Art 17(3).

2.3 Reporting

2.3.1 Reporting obligations of the commercial, industrial and public sector organisations (undertakings)

Each year by 31 March, each undertaking shall communicate to the Commission, sending a copy to the competent authority of the Member State concerned, the following data for each controlled substance and each new substance listed in Annex II for the previous calendar year.

For producers:

- Total production of each substance;
- Any production placed on the market or used for the producer's own account within the EU;
- Any production to meet the essential laboratory and analytical uses in the EU, licensed in accordance with Article 10(6);
- Any production authorised under Article 10(8) to satisfy essential laboratory and analytical uses;
- Any increase in production authorised under Article 14(2), (3) and (4) in connection with industrial rationalisation;
- Any quantity recycled, reclaimed or destroyed and the technology used for the destruction, including amounts produced and destroyed as by-product as referred to in Article 3(14);
- Any stocks;
- Any purchases from and sales to other producers in the EU.

For importers:

[5] Regulation states Article 11(2) instead of Article 11(1) which appears to be an error

Any quantities released for free circulation in the EU, separately identifying imports for feedstock and process agent uses:

- For essential laboratory and analytical uses licensed in accordance with Article 10(6);
- For use in quarantine and pre-shipment applications;
- For destruction.

Importers importing controlled substances for final destruction must communicate the actual final destination or destinations of each of the substances, providing separately for each destination the quantity of each of the substances and the name and address of destruction facility where the substance was delivered, any quantities imported under other customs procedures, separately identifying the customs procedure and the designated uses, any quantities of used substances referred to in paragraph 1 imported for recycling or reclamation, any stocks, any purchases from and sales to other undertakings in the EU and the exporting country.

For exporters:

- Any quantities of such substances exported, separately identifying quantities exported to each country of destination;
- Quantities exported for feedstock and process agent uses;
- Any quantities for essential laboratory and analytical uses;
- Quantities for critical uses and for quarantine and pre- shipment applications;
- Any stocks;
- Any purchases from and sales to other undertakings in the EU;
- The country of destination.

For companies destroying controlled substances:

- Any quantities of such substances destroyed, including quantities contained in products or equipment;
- Any stocks of such substances waiting to be destroyed, including quantities contained in products or equipment;
- The technology used for the destruction.

For undertakings using controlled substances as feedstock or process agents:

- Any quantities of such substances used as feedstock or process agents;
- Any stocks of such substances;
- The processes and emissions involved.

For producers and importers holding a licence under Article 10(6) for each substance for which an authorisation has been received, report to the Commission, sending a copy to the competent authority of the Member State concerned:

- The nature of the use;
- The quantities used during the previous year, the quantities held in stock;
- Any quantities recycled, reclaimed or destroyed;
- The quantity of products and equipment containing or relying on those substances placed on the EU market and/or exported.

2.3.2 Reporting obligations of the Member States

Each year by 30 June Member States shall report the following information in an electronic format to the Commission, for the previous calendar year:

- The quantities of methyl bromide authorised, pursuant to Article 12(2) and (3), for different treatments for quarantine and pre-shipment purposes used in their territory, specifying the purposes for which methyl bromide was used, and the progress in evaluating and using alternatives;
- The quantities of halons installed, used and stored for critical uses, pursuant to Article 13(1), the measures taken to reduce their emissions and an estimate of such emissions, and progress in evaluating and using adequate alternatives;
- Cases of illegal trade, in particular those detected during the inspections carried out pursuant to Article 28.

2.4 Links with other legislation

- Industrial Emissions Directive (2010/75/EU);
- F-Gas Regulation (EC) No 842/2006[6] (and implementing Regulations: 1493/2007, 1494/2007, 1497/2007, 1516/2007, 303/2008, 304/2008, 305/2008, 306/2008, 307/2008, 308/2008);
- Export and Recovery of Certain Waste Regulation (1418/2007)[7];
- Shipment of Waste Regulation (1013/2006)[8];
- Directive on Waste (2008/98/EC)[9];
- WEEE I and WEEE II Directives (2002/96/EC and 2012/19/EU);
- End-of-Life Motor Vehicles Directive (2000/53/EC)[10];
- Export and Import of Dangerous Chemicals Regulation (No 689/2008)[11];
- Biocidal Products Regulation (EU) No. 528/2012[12];
- REACH Regulation (EC) No 1907/2006[13] regarding requirements for registration and authorisation

[6] Regulation (EC) No 842/2006 of the European Parliament and of the Council of 17 May 2006 on certain fluorinated greenhouse gases as amended by Regulation (EC) 1137/2008

[7] Commission Regulation (EC) No. 1418/2007 of 29 November 2007 concerning the export and recovery of certain waste listed in Annex III or IIIA to Regulation (EC) No. 1013/2006 to certain countries to which the OECD Decision on the control of transboundary movements of waste does not apply, as amended by Regulation (EC) 740/2008 and (EC) 967/2008

[8] Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste as amended by Regulations (EC) 1379/2007, (EC) 669/2008, (EC) 219/2009 and (EC) 308/2009 and Directive 2009/31/EC

[9] Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste

[10] Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of life vehicles as amended by Decisions 2002/525/EC, 2005/63/EC, 2005/437/EC, 2005/438/EC, 2005/673/EC, 2008/689/EC, 2010/115/EC and Directives 2008/33/EC and 2008/112/EC and 2011/137/EC

[11] Regulation (EC) No 689/2008 of the European Parliament and of the Council of 17 June 2008 concerning the export and import of dangerous chemicals

[12] Directive 98/8/EC of the European Parliament and of the Council of 16 February 1998 concerning the placing of biocidal products on the market

[13] Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No

of substances;

- Customs legislation and initiatives for Customs cooperation;
- Classification and Labelling Regulation (1272/2008)[14], which will repeal Directives 67/548/EEC and 1999/45/EC;
- POPs Regulation (850/2004)[15];
- Environmental Crimes Directive (2008/99/EC)[16].

1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

[14] Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC

[15] Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC and Regulations (EC) 1195/2006, (EC) 172/2007, (EC) 323/2007, (EC) 219/2009 and (EC) 304/2009

[16] Directive 2008/99/EC of the European Parliament and of the Council of 19 November 2008 on the protection of the environment through criminal law

3. Implementation

3.1 Key Tasks

The key tasks involved in implementing the Regulation is summarised in the checklist below.

Table 17: Regulations on Ozone Depleting Substances – Key implementation tasks

1	Planning and preparation
1.1	Identify any logistical, administrative and regulatory requirements so that the Regulations can be effectively applied. Appoint a Competent Authority (or competent authorities).
1.2	Identify which sectors and activities in the country are affected, including all organisations, which produce, recover, recycle, reclaim, use, destroy or trade in ozone-depleting substances (ODS) or which operate refrigeration, air-conditioning or heat pump equipment, or fire protection systems, which contain ODS.
1.3	Undertake cost assessment and plan how implementation costs will be covered and divided between private and public sector.
1.4	Organise meetings with stakeholders (main industrial sectors affected) and public authorities to delineate duties, facilitate compliance and discuss the legal obligations involved.
1.5	Devise information campaigns on the implications of the Regulations amongst directly affected parties, stakeholders and the public.
1.6	Competent authorities should assess capacity-building requirements to process information received, carry out the necessary reporting requirements, ensure regular monitoring of the implementation of the obligations, and ensure that information compiled and submitted to the Commission is accurate and complete.
1.7	Take measures to promote recovery, recycling, reclamation and destruction of controlled substances.
1.8	Lay down the minimum training requirements for personnel involved in recovery, recycling, reclamation and destruction of controlled substance as well as leakage control of RAC equipment.
1.9	Establish inspection systems which targets compliance of undertakings following a risk-based approach, including inspections on imports and exports of controlled substances as well as of products and equipment containing or relying on those substances. In addition monitoring and inspection systems are to be set up for recovering, for the purposes of recycling, reclamation or ecologically acceptable destruction of controlled substances.
1.10	Establish penalties for non-compliance with the requirements of the Regulation and notify the Commission on the date of accession at the latest.
1.11	Establish monitoring and inspection systems for companies having received annual use quotas to transfer quotas amongst the companies after prior notification to the Commission.
1.12	Establish a monitoring and inspection system to ensure that new quotas for the production and use of controlled substances for laboratory and analytical purposes comply with the allocation mechanism set out in Regulation 537/2011.

1.13	Establish a monitoring and inspection system to ensure that the list of non-essential uses of controlled substances (other than HCFCs) that are not allowed (Regulation 291/2011).
1.14	Set up a system to ensure that halons may only be placed on the market by undertakings authorised by the competent authority to store halons for critical uses as set out in Annex VI. (Art 13(1)).
2	**Regulation – Tasks for commercial, industrial and public sector organisations (Undertakings)**
2.1	Ensure compliance with the prohibition of the production, placing on the market and use of controlled substances with the following exemptions, most of which are subject to licensing: ▪ Controlled substances may be produced, placed on the market and used as feedstock, provided that it is adequately labelled; ▪ Production, placing on the market, and use of controlled substances for essential laboratory and analytical uses; ▪ Virging HFCFCs may be produced subject to calculated levels as per article 11(1) and a total ban as from 2020; ▪ Reclaimed HCFCs may be placed on the market and used for the maintenance or servicing of existing RAC equipment until 31 December 2014, provided that it is adequately labelled; ▪ Recycled HCFCs may be used for the maintenance or servicing of existing refrigeration, air-conditioning and heat pump equipment until 31 December 2014, provided that they have been recovered from such equipment and may only be used by the undertaking which carried out the recovery. Rules on record keeping apply for equipment with a fluid charge of 3kg or more; ▪ HCFCs may be placed on the market for repackaging and subsequent export until 31 December 2019; ▪ When reclaimed or recycled HCFCs are used for maintenance or servicing, the RAC equipment concerned shall be adequately labelled; ▪ Controlled substances may be produced, placed on the market and used as process agent in installations existing on 1 September 1997, and where emissions are insignificant.
2.2	Ensure compliance with the prohibition of the placing on the market of products and equipment containing or relying on controlled substances unless it is placed on the market for destruction or when it is authorised in accordance with Article 6(1) Reg. 1005/2009
2.3	Comply with the prohibition of the use and ensure the decommissioning (except for uses referred to in Article 13(1)) of fire protection systems
2.4	Comply with the prohibition of the use of fire extinguishers containing halons and ensure its decommissioning
2.5	Ensure that personnel involved in recovery, recycling, reclamation and destruction of controlled substance meet the minimum qualification requirements laid down by the competent authority.
2.6	Ensure recovering, for the purposes of recycling, reclamation or ecologically acceptable destruction of controlled substances contained in RAC equipment
2.7	Where recovering or reclaiming is not possible, ensure that the final destruction of the controlled substances and equipment which contained such are destroyed in line with the approved technologies listed in Annex VII (Art. 22(2), Reg. (EC) No 1005/2009)
2.8	Ensure that the use of halons, as critical use, in fire fighting equipment is in line with the phase out schedule with a cut-off date and end date set out in Regulation (EC) No 291/2011

2.9	Ensure that imports and exports of controlled substances are only allowed if meeting the requirements laid down in Art. 15(2) and 17(2) of Reg. 1005/2009 and that importers and exporters hold an import and export license issues by Commission.
2.10	Importers of controlled substance for essential laboratory and analytical use, used as feedstock or used as process agents declare top the Commission the demand
2.11	Ensure that there is no import and export from and to non-Montreal Protocol Parties (under certain exemptions, Art 20(2) and (3) of Reg. (EC) No 1005/2009))
2.12	Take measures to prevent leaks of controlled substances and implement periodical leakage checking by qualified staff (Art 23 of Reg. (EC) No 1005/2009))
2.13	Ensure compliance with the prohibition of production, import, placing on the market, use and export of new substances set out in Part A of Annex II to Reg. (EC) No 1005/2009 taking into account certain exemptions (Art. 24, Reg. 1005/2009)
2.14	Register and submit application to the Commission for licences to produce and import controlled substances for certain "essential" uses, i.e. laboratory and analytical uses (Art. 10, Regulation (EC) No. 5005/2009).
3	**Regulation – Tasks for Member States**
3.1	Monitor compliance with the requirements 2.1 – 2.14. In this context keep systematic record of all applications and licenses granted by Commission in the context of Reg. 1005/2009 and carry out inspection, taking a risk-based approach, especially targeting those activities representing the highest risk of illegal trade or emission of controlled substances.
3.2	Lay down the minimum training requirements for personnel responsible for maintaining equipment containing controlled substances in order to prevent leakage of regulated substances.
3.3	Establish and impose penalties for non-compliance with the requirements of the Regulation.
3.4	As regards the import and export licenses issued by the Commission, the Competent Authority of a Member State may inform or instruct the applicant for a license on any further information deemed necessary to be included in the application for a license.
3.5	If applicable proved authorisations in accordance with Art 10(7), 10(8), 14(2) Regulation (EC) No. 1005/2009.
3.6	If applicable request derogations, temporary derogations to the Commission in accordance with Art 11(8), Art 12(3), Art 13(4), Art 17(3) Regulation (EC) No. 1005/2009.
4	**Reporting**
4.1	Establish reporting systems to ensure that the data required (see below) are collected.
4.2	Producers, importers, exporters, feedstock users and process agent users of ODS need to report annually on quantities produced, imported and exported during the preceding year. Member States need to keep record of all annual reports submitted by undertakings to the Commission in accordance with Art 27 Regulation (EC) No. 1005/2009
4.3	Each year by 30 June Member States shall report the following information in an electronic format to the Commission, for the previous calendar year: ▪ The quantities of methyl bromide authorised, pursuant to Article 12(2) and (3), for different

	treatments for quarantine and pre-shipment purposes used in their territory, specifying the purposes for which methyl bromide was used, and the progress in evaluating and using alternatives; ▪ The quantities of halons installed, used and stored for critical uses, pursuant to Article 13(1), the measures taken to reduce their emissions and an estimate of such emissions, and progress in evaluating and using adequate alternatives; ▪ Cases of illegal trade, in particular those detected during the inspections carried out pursuant to Article 28.

3.2 Phasing Consideration

In the European Union, bans on the production and use of most ozone-depleting substances are already implemented, except where they are licensed by the Commission for essential use and other exempted uses. Since many of the requirements are also covered by the Montreal Protocol to the Vienna Convention, candidate countries that have already implemented this protocol are likely to be at least partly compliant with the Regulation. However, the Regulation contains different or stricter obligations than the Montreal Protocol and will impose new obligations, such as stricter standards and controls, different timescales for phasing out use, different information requirements and complete prohibitions.

4. Implementation Guidance

At the earliest stage of implementation it is necessary to identify key actors and stakeholders who will be involved in the implementation of the Regulations and arrange discussions between them and/or set up working and coordinating groups. The identification of, and initial discussion with all potential stakeholders will help to achieve the most efficient path to implement the Regulations, to avoid costly errors and to encourage the co-operation of stakeholders in complying with the requirements of the implementation of the Decision.

Since the Regulations require close co-operation with, as well as information from, various sectors, it is recommended that an entity be specifically set up to monitor the implementation of the obligations of these Regulations. Such an entity may be established under the ministry for environment or the environment agency but should have a regulatory cross-sectoral role to ensure that all public and private authorities required to submit information report to one focal point and that information received from various sources is quality controlled and verified by one entity in order to avoid gaps, duplication and fragmentation as well as to ensure accuracy, comparability and transparency.

A monitoring system must be put into place to ensure compliance with the Regulations in terms of ensuring that controlled substances are not put on the market, that the exemptions are adequately licensed and that an adequate labelling system is put in place.

Under the EU Regulation on substances that deplete the ozone layer, the production, import and export of ODS is subject to licensing. These activities, as well as the destruction of ODS, feedstock uses and process agent uses, are also subject to annual reporting. Furthermore, the use of ODS for laboratory and analytical uses (including the placing on the market for such uses) is subject to registration. For these purposes the European Commission operates electronic databases.

DG CLIMA provides a number of documents relevant to the implementation of the ODS Regulations.

- To comply with **Articles 15, 17 and 18** of Regulation (EC) No. 1005/2009, the "Main-ODS-database" is used to apply for licences for the production, import or export of controlled substances (an update was expected for April 2013). Information on who is entitled to produce, import or export and how to use the Main-ODS-database is available in a published licensing manual, available on:

  https://circabc.europa.eu/faces/jsp/extension/wai/navigation/container.jsp

- The use of controlled substances for laboratory and analytical uses (including the placing on the market of ODS laboratory chemicals) is subject to registration. Controlled substances may only be used in laboratories for essential uses where no alternative is available. The placing on the market of such laboratory chemicals is subject to a range of conditions. To comply with **Article 10** of Regulation (EC) No. 1005/2009, information about the applicable conditions and the registration process is available in the manual for the ODS licensing system for laboratory uses. The manual is also available on:

  https://circabc.europa.eu/faces/jsp/extension/wai/navigation/container.jsp

- **Article 27 of Regulation (EC) 1005/2009** requires producers, importers, exporters, feedstock users and process agent users of ODS to report on quantities produced, imported and exported during the preceding year. Furthermore, destruction facilities need to report on the quantities of ODS destroyed. Reports need to be submitted to the European Environment Agency via the Business Data Repository (BDR) tool, available on: https://bdr.eionet.europa.eu/

4.1 Administrative Arrangements and Planning

- Regulations are directly applicable in all Member States, and do not need to be transposed into national legislation (see further under the introduction section). However, additional legislation

will be required, for example to designate competent authorities, assign enforcement powers, and establish penalties for non-compliance with the requirements of the Regulation.

- Member States have introduced various mechanisms to achieve the targets, for example market based instruments like taxation, Regulations and the use of voluntary agreements.
- Member States have provided guidance (manuals) for undertakings to comply with the Regulations on ozone depleting substances
- Member States have also produced extensive guidance for industry on alternatives for ozone-depleting substances, recovery procedures, and undertaking research to support the identification of non-ozone-depleting alternatives.

Box 26

United Kingdom
The Department of the Environment, Food and Rural Affairs (Defra) acts as the competent authority for the control of ozone-depleting substances. Under the COSHH Regulations (Control of Substances Hazardous to Health), the Health and Safety Executive plays a role in enforcement. Banks for halons and CFCs have been set up to serve as stores for recycled material required for essential purposes — such as halons for fire extinguishers, to reduce the need for their manufacture or import. Industry consortia are active in the management of the banks. Research has been undertaken by the government to develop non-ozone-depleting substances under contract from Defra.

Box 27

Examples of policy planning in Sweden
Sweden's overall environmental policy is linked to realising overarching environmental quality objectives. One of the objectives is „Protective Ozone Layer": From a generational perspective, the effect of the environmental quality objective "A Protective Ozone Layer" is that: ▪ Sweden acts to ensure that concentrations of chlorine, bromine and other ozone depleting substances (ODS) in the atmosphere do not exceed natural levels; ▪ The use of ODS in Sweden should be phased out within a generation. Interim targets for monitoring achievement of the environmental quality objective "A Protective Ozone Layer": Virtually all emissions of ODS should have ceased by 2010. ***Source: Skyddande Ozonskikt: Underlagsrapport till fördjupad utvärdering av miljömålsarbetet, Rapport 5320, October 2003. Available at: http://www.swedishepa.se/Documents/publikationer/620-5320-5.pdf***

4.2 Regulation

The information requirements of the Regulations are extensive. Information is required on activities involving controlled substances, including their production, import, export, supply, use, recovery, storage, recycling and reclamation and destruction. In this context it is advised to keep systematic record of all applications and licenses granted by Commission in the context of Reg. 1005/2009 and carry out inspection, taking a risk-based approach, especially targeting those activities representing the highest risk of illegal trade or emission of controlled substances. The accuracy of the information provided should be monitored by undertaking random spot checks to audit data.

Leakages of controlled substances must be controlled, and this includes the escape of substances from household equipment, factories, and installations which recover ozone- depleting substances.

Leakages must be minimised by adopting precautionary measures. Operators should be monitored to ensure that the necessary measures are being taken.

Member States have to ensure that production, import, export, placing on the market or use of ozone-depleting substances in contrary to the ODS provisions is considered an environmental offence according to Art. 3 of the Environmental Crimes Directive (2008/99/EC) and that effective, issuasive and proportionate penal sanctions are imposed on the perpetrator (Art. 3, Environmental Crimes Directive (2008/99/EC)).

Box 28

Sweden
The 1986 Montreal Protocol established an agreement to phase out ozone-depleting substances (ODS). This case study describes the route taken by one Member State (Sweden), which became a signatory to the protocol on 29 June 1988. In 1986, Sweden's CFC consumption was about 5,300 tonnes per annum, of which around 1,500 tonnes were for the production of refrigerants. Annual emissions due to leakage from domestic and industrial equipment which used CFCs and other ODS were considered to be high, but no particular attention was focused on this area. In the early 1980s, there was a significant increase in the development of heat pumps to provide heating for district and individual residences, most of which used CFCs. Some time prior to EU membership, Sweden introduced comprehensive national legislation on the handling, usage and phasing out of ODS, which was seen to be more stringent than the requirements of the EU legislation. The national legislation included the main national ordinance of 1995 (95/636) as amended, which was based on earlier ordinances. In accordance with EU policy, there is no national ban on the import of CFCs and HCFCs. EU Regulations have prevented the production of and imports into the EU of virgin CFCs from 1 January 1995. Production and imports of HCFCs from non-EU countries are gradually being reduced and will finally be banned by 1 January 2015. Sweden banned the use of CFC and HCFC refrigerants in new equipment from 1 January 1995 and restrictions were introduced for CFCs for recharging existing equipment from 1 January 1998. Furthermore, the use of all equipment with CFC refrigerants, except for private use, was prohibited on 1 January 2000. This ban also applies to recovered CFCs and HCFCs, with the intention of compelling the use of non-ODS refrigerants. The authorities worked extensively with industry to implement the ODS initiatives and suppliers are obliged to take back recovered refrigerants free of charge. Since 1997, permits have been required from the Environmental Protection Agency to export refrigerants and are only issued for destruction purposes. In 1988, the government took a policy decision to reduce the use and emissions of CFCs by 25% by 1 January 1991 and by 50% by 1 January 1993. Achievement of these targets required close co-operation with industry. The three largest trade associations formed the National Refrigeration Foundation (KYS) to promote higher standards in refrigeration, including those amongst the installation workers. Based on these discussions, the EPA issued a Refrigerants Order which accredited installation workers; promoted high production standards; promoted reuse of refrigerants; and promoted equipment maintenance. The accreditation system is regulated by SWEDAC, the national accreditation body.

Box 29

Bulgaria
Bulgaria introduced the national legislation already in 2000, which was finally amended in 2007 to cover all the requirements of the Regulation. It follows the Regulation almost exactly, although one of the last changes in 2007 was the introduction of the minimum requirements for the qualifications of the personnel dealing in any way with equipment containing the above substances. Imports and exports are licensed by the European Commission. Specific customs points are established for the import and export of these substances, equipped with the necessary facilities and units for testing. The competent authority is the Ministry of Environment and Water. Reporting to the Commission is done by MoEW, to which all bodies must report in due time.

Box 30

Ireland
The EPA of Ireland has issued guidance note on ODS, intended for those involved in the use of Ozone Depleting Substances (ODS) as solvents. Information gathered to date has indicated that such uses are no longer common in Ireland. The guidance note spans the most essential implementation implications, including training requirements, reporting, ODS waste management, alternative substances and enforcement and prosecution. ***Source:*** ***http://www.epa.ie/downloads/advice/air/ods/revised_guide_note_ods_solvents_august_2008.pdf***

4.3 Reporting

Mechanisms will need to be established for reporting to the Commission on measures to implement the Regulation, including, for example, data on production, import and export of controlled substances but also on decommissioning of installations producing or using controlled substances, transfer of allocated quotas etc.

5. Costs

The costs to implement this Regulation are associated with:

- Establishing the relevant competent authority and running the regulatory system, with bans, labelling and reporting requirements;
- Ensure sufficient coordination with requirements laid down in other relevant EU provisions or at international level (e.g. obligation to ensure that staff handling F-gases in fire protection systems and other equipment have received training and are duly certified);
- Monitoring and enforcing compliance as well as sanctioning system in case of non-compliance (the production, importation, exportation, placing on the market or use of ozone-depleting substances is considered an environmental offence according to Art. 3 of the Environmental Crimes Directive (2008/99/EC);
- Costs to industry and the public related to the replacement of existing substances by non-ozone-depleting substances in products.

As alternatives to ODS are becoming less costly, the compliance costs to industry and to purchasers of domestic refrigerating units are unlikely to be high.

Some of these costs can be covered from various administrative fees, such as certificate and training fees. It may also be possible to involve economic instruments that provide incentives for the affected sectors of industry to step up the phasing out of the use of the remaining uses of ODS.

These costs apply not only to the manufacturing industry but also to relevant waste operators and private users of equipment with ODS.