Revised Guidance Note for Ozone Depleting Substances

Refrigeration, Air Conditioning and Heat Pumps (CFCs and HCFCs)

August 2008

Acknowledgements

The Environmental Protection Agency is grateful for the input of URS Ireland Ltd. to the first draft of this Guidance Note (November 2005). The Agency would also like to thank the Institute of Refrigeration of Ireland (IRI). This revised version is based on the November 2005 draft.

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WHAT YOU NEED TO KNOW

This Guidance Note is intended for those involved in the handling of ozone depleting substances (ODS) in the refrigeration, air conditioning and heat pump sector in Ireland. Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer is further implemented in Ireland by the Control of Substances that Deplete the Ozone Layer Regulations 2006 (S.I. No. 281 of 2006) and the main provisions are outlined in below. The main ODS used in this sector are chlorofluorocarbons (CFCs) and hydrochloroflurocarbons (HCFCs).

Impact	Guidance Note Section No.
In general HCFCs in new equipment are prohibited since 01/01/2001[1]. Topping up of existing equipment with virgin and recycled HCFCs is allowed until 31/12/2009 and topping up with recycled HCFCs only is allowed until 31/12/2014.	4.2
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Further details are provided in the main body of the Guidance Note.

[1] Regulation (EC) 3093/94 prohibited some ODS substances before this date.
[2] For exemptions see Section 4.4.

1. INTRODUCTION

The stratospheric ozone layer acts as a protective barrier or 'natural sunscreen' in the upper atmosphere, preventing harmful ultraviolet radiation from reaching the earth's surface. Research during the 1970's and 1980's identified a hole in this ozone layer at certain times of the year above the Antarctic, with CFCs (chlorofluorocarbons) being identified as the cause of the depletion of stratospheric ozone. In addition to CFCs a range of other Ozone Depleting Substances (ODS) were identified as contributing to the depletion of the ozone layer. Through the United Nations Environment Programme (UNEP) a Global Convention was developed to protect the ozone layer, eventually resulting in the development of the Montreal Protocol in the late 1980's. Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer is the European response under the Montreal Protocol. The Protocol is under constant review and amendments are agreed under the auspices of the United Nations (UN). Ireland has ratified all amendments.

Regulation (EC) No. 2037/2000[3] established rules for the production, import, export, placing on the market, use, recovery, recycling, reclamation and destruction of substances, referred to as controlled substances, that deplete the ozone layer. This covers a range of substances including:

The ozone depleting substances covered by the Regulation include:

- Chlorofluorocarbons (CFCs);
- Hydrochlorofluorocarbons (HCFCs);
- Halons;
- 1,1,1 trichloroethane;
- Carbon tetrachloride;
- Hydrobromofluorocarbons (HBFCs);
- Bromochloromethane (BCM);
- Methyl bromide.

These substances are mostly used in refrigeration, air-conditioning (including heat pump equipment), fire suppression and pest control. Furthermore, some ODS are used as solvents, aerosol sprays and blowing agents. The Regulation prohibits CFCs, halons, 1,1,1 trichloroethane, carbon tetrachloride, HBFCs, BCM and methyl bromide (with some exceptions). In addition, gradual phase-out and a medium term ban on HCFCs is introduced.

[3] A copy of the Regulation and other relevant information can be downloaded from the Commission's website at: http://ec.europa.eu/environment/ozone/index.htm

The Regulation affects users of refrigeration, air-conditioning and heat pump equipment, suppliers, maintenance and installation engineers and technicians, and people involved in disposal of such equipment and refrigerant gases. The objective of this Guidance Note is, in particular, to inform users of the above equipment and personnel involved in the refrigeration, air conditioning and heat pump industry (including disposal of ODS) in Ireland about the relevant provisions of Regulation (EC) No. 2037/2000 on Ozone Depleting Substances.

While Regulation 2037/2000 is directly binding on all Member States, certain provisions of the Regulation are further implemented in Ireland by the Control of Substances that deplete the Ozone Layer Regulations 2006 (S.I. No. 281 of 2006). These Regulations officially designate the Environmental Protection Agency as competent authority, while the Department of Agriculture and Food, the Revenue Commissioners (Customs) and the Department of Transport (Maritime Safety Directorate) are each designated as competent bodies. A copy of the Regulations can be downloaded from www.ozone.ie.

A series of Guidance Notes has been produced to cover the range of controlled substances and their uses. This Guidance Note focuses on the main uses in Ireland in relation CFC and HCFC in refrigeration, air conditioning and heat pump systems.

2. USES OF CFCs AND HCFCs AS REFRIGERANTS

CFCs and HCFCs have been extensively used in the past as refrigerant gases. Table 1 lists the most commonly used refrigerants covered by the Regulation. The use of the trade names is not standardised. For example, the term 'Forane' is used to describe both CFCs and HCFCs.

Table 1 CFCs and HCFCs used in refrigeration, air conditioning and heat pump industry

Halocarbon Number	Name	ODP	ASHRAE[4] Name
CFC-11	Trichlorofluoromethane	1.0	R-11
CFC-12	Dichlorodifluoromethane	1.0	R-12
CFC-113	Trichlorotrifluoroethane	0.8	R-113
CFC-114	Dichlorotetrafluoroethane	1.0	R-114
CFC-115	Chloropentafluoroethane	0.6	R-115
CFC-502	Blend of HCFC 22 and CFC 115	0.221	R-502
CFC-13	Chlorotrifluoromethane	1.0	R-13
HCFC 141b	HCFC Blend	0.110	
HCFC 22	Chlorodifluoromethane	0.055	R-22
Refrigerant Trade Names			
Arcton, Care, Freon, Forane, Genetron, Greencool, Isceon, Solkane, Suva			

[4] American Society for Heating, Refrigeration and Air-Conditioning Engineers

Each ozone depleting substance is assigned an ozone depleting potential (ODP) relative to the compound CFC-11, which has an ODP of 1. Ozone depleting potential is further discussed in Section 3.

Table 2 provides a summary of the most common CFC and HCFC applications.

Table 2 Summary of CFC and HCFC Applications

Compound	Application	Comments
CFC-12	Used for a wide variety of applications: - In almost all refrigerators and freezers built before 1994, - In small hermetic systems such as retail display cases, icemakers etc. - In medium and large sized systems in commercial and industrial refrigeration. - In car air conditioning systems.	- HCFC blends R-401a and R-409 are typically used as replacement gases for CFC-12. - In 1993-1996, HFC-134a used as a replacement gas for CFC-12 in cars.
CFC-11	- Used in insulating foam pre-1990. - Used in large chillers for air-conditioning and industrial applications.	Eliminated in 1993.
HCFC-141b	- Used in insulating foam post 1994 - Used as the predominant refrigerant domestic systems.	Eliminated in 2003.
HCFC-22	- Widely used in commercial, industrial and air-conditioning systems. - Used in heat pump applications.	
CFC-502	Used in low temperature commercial and small industrial cooling installations such as supermarket frozen food, systems, small cold stores and small blast freezers.	Quickly became scarce after the 1995 phase-out of CFC production
HCFC-123	Introduced as an alternative for CFC-11 in large air-conditioning water chillers	Relatively unusual refrigerant.
Other CFCs	- CFC-13 and CFC-503 were used in very low temperature cascade systems (e.g. at below -70^{o}C). - CFC-114 and CFC-500 were occasionally used in large water chillers.	

Discussions with industry contacts indicates that the main refrigerant used in Ireland before 1994 was CFC-12 and after 1994 was HCFC-22. HCFC-22 was used only transitionally for new refrigeration systems. Since 1999, new refrigeration systems typically use HFCs (hydrofluorocarbons), most commonly R-134A and R-404A.

New air conditioning systems with HCFCs have not been available on the Irish market since around 2000. Most new air conditioning systems use HFCs as refrigerants (see Section 7).

3. ENVIRONMENTAL IMPACT

CFCs and HCFCs are referred to as ozone depleting substances (ODS), because once these gases are released into the environment and reach the stratosphere, they interact with the ozone layer and destroy ozone molecules. ODS lifetime in the stratosphere is between 100 and 400 years (CFCs have reported lifetimes of several hundred years while those reported for HCFCs are typically less than 20 years). An ODS molecule has potential to destroy ozone molecules during its entire lifetime. Therefore, various CFCs and HCFCs are assigned Ozone Depletion Potentials (ODP) depending on their potential (specified relative to CFC-11) to cause ozone depletion in the stratosphere (see Table 1). HCFCs were used as a replacement for CFCs because their ODP is up to 20 times lower.

Ozone is a gas composed of three bonded oxygen atoms (O_3). In the Earth's atmosphere, ozone is formed from molecular oxygen (O_2) in the reactions initiated by the UV light. Ozone can be found in two levels, at ground level and in the Earth's upper atmosphere, referred to as the stratosphere. At ground level, ozone is a significant air pollutant, forming smog. In the stratosphere it is referred to as the ozone layer. The ozone layer encircles the stratosphere at approximately 10 km above ground level. It filters ultraviolet (UV) radiation reducing the amount of radiation reaching ground level. The depletion of the ozone layer exposes living organisms to high levels of the harmful UV-B radiation. Most importantly, this negatively impacts human health causing increased occurrence of skin cancers, cataracts and weakened immune system. Other negative impacts of depletion of the ozone layer are:

- High levels of UV-B radiation causes sunburn and can potentially damage DNA,
- Changes in plant growth,
- Degradation of building materials, particularly paints, rubbers, woods and plastics.

While many ozone depleting substances also have potential health and safety impacts the objective of the Regulation and of this Guidance Note relates to the potential for depletion of the ozone layer due to release of these compounds. The most significant ozone layer depletion occurs over Antarctica, where the ozone concentration is approximately 30% of its pre-1970s concentration. Ozone concentration is still decreasing, but at a lower rate since implementation of the Montreal Protocol in 1989. It is estimated that the ozone layer above Antarctica will recover after 2050. Further information on ozone depletion and international action is available from the United Nations Environment Programme website (http://ozone.unep.org/index.shtml).

4. IMPACT OF THE REGULATIONS

4.1. Implementation in Ireland

Under the Control of Substances that Deplete the Ozone Layer Regulations 2006 (S.I. No. 281 of 2006), the Environmental Protection Agency is the

designated competent authority for implementation and enforcement of Regulation 2037/2000. Three competent bodies have also been assigned official responsibility under the Regulations: Department of Agriculture and Food, the Revenue Commissioners (Customs Division) and the Maritime Safety Directorate.

Specific requirements, such as minimum qualifications, have also been introduced in Ireland under the Control of Substances that Deplete the Ozone Layer Regulations 2006 (S.I. No. 281 of 2006). This is discussed further in Section 4.5.

4.2. Phase-out Dates

Progressive phase-out dates have been introduced by Regulation 2037/2000 and preceding legislation. Table 3 lists the main phase-out dates that apply to all users of CFCs and HCFCs. Certain exemptions to the phase-out dates have been built into the Regulation and these are further discussed in Section 4.4.

Table 3 CFCs and HCFCs phase-out dates

Deadline	Prohibition
1st October 2000	The supply of CFCs prohibited
1st January 2001	The use of CFCs in the maintenance of refrigeration, air conditioning and heat pump equipment prohibited. The use of HCFCs in the manufacture of all new refrigeration, air conditioning and heat pump equipment prohibited.
1st January 2010	The use of virgin HCFCs in the maintenance of refrigeration, air conditioning and heat pump units will be prohibited. Prohibition on use of HCFCs for the manufacture of products intended for export to countries where the use of HCFC is allowed.
1st January 2015[5]	The use of all HCFCs, including reclaimed and recycled HCFCs, will be prohibited. HCFC containing systems can be operated after this date until such time as maintenance is required.

[5] The Commission may decide, following a review to be conducted by 31 December 2008, to adapt this date.

4.3. Imports and Exports

Import and export in the context of Regulation (EC) No. 2037/2000 refers only to trade with non-EU countries and does not refer to movement of ODS within the European Community. The shipment of waste ODS within the EU is governed by other national and EU legislation Figure 1 illustrates the relationships in the ODS import and export reporting requirements etc. The import and export of ODS is subject to strict limitations and an electronic licensing system. Further information is available from the European Commission's ozone depleting substances webpage: http://ec.europa.eu/environment/ozone/ods.htm.

The import and export of the majority of ODS is effectively prohibited, with limited exceptions for authorised essential uses, use as a feedstock or processing agent, and import for destruction (this not applicable for Ireland as no destruction facilities are available in Ireland). Further information on import and export of CFCs and HCFCs is outlined below. The import and export of equipment and products containing ODS is also severely restricted. Imports are allowed for authorised essential uses. Products and equipment shown to be manufactured prior to the entry into force of the Regulation (i.e. before 1 October 2000) are not subject to import prohibitions.

Further limitations are applicable to trade with countries which are not party to the Montreal Protocol, with trade only being allowed under very limited circumstances.

The import of HCFCs is subject to strict quantitative limits. These limits are determined annually by the Commission and quotas are allocated by Commission Decision for the next calendar year. Refer to Article 7 of the Regulation for further information.

The import and export of refrigeration, air conditioning and heat pump equipment containing CFCs and HCFCs is prohibited unless the equipment was manufactured before 30th September 2000 in case of CFCs and before 1st January 2001 in case of HCFCs . There are two exemptions:

- fixed air conditioning equipment containing HCFCs with capacity of less than 200kW can be imported if manufactured before 1st July 2002;
- reversible air conditioning/heat pump systems can be imported if manufactured before 1st January 2004.

The import and export of CFC and HCFC gases into/out of the European Community requires authorisation from the Commission under Regulation (EC) No. 2037/2000. Import Licenses and Export Authorisation Numbers can be obtained via the Commission's ODS website by following the correct procedures. It is the responsibility of the importer/exporter to apply to the Commission via their website http://ec.europa.eu/environment/ozone/ods.htm. All correspondence with the Commission should be directed to:

European Commission
DG Environment
C4 "Industrial Emissions & Protection of the ozone layer"
B-1049 Brussels
Tel: +32 2 299 20 25 or +32 2 299 49 62
Fax: +32 2 292 06 92
Email: env-ods@ec.europa.eu

If an import request is approved, the Commission will allocate a portion of the available ODS quota (substance- and use-specific) to the applicant for import and issue an import licence. A copy of the import licence will be sent to the Competent Authority of the Member State. Similarly, for authorised exports from the EU, the exporter is issued with an Export Authorisation Number (EAN). Exports cannot be carried out without an EAN issued by the Commission. Applications for import and export authorisation must be renewed on an annual basis. Importers and exports are required to report annually to the Commission according to Article 19 of Regulations 2037/2000, with specified data on import and export of the controlled substance. A copy of the report must be submitted to the Environmental Protection Agency:

Ozone Depleting Substances
Office of Licensing and Guidance
Environmental Protection Agency
P.O. Box 300
Johnstown Castle Estate
Co. Wexford

Or via e-mail to ods@epa.ie

In addition, stamped used licence documents (import licences and export authorisation numbers) must be provided to Customs (www.revenue.ie) at the point of import or export. Further guidance on import and export procedures can also be obtained from Customs.

It is recommended that any person wishing to carry on trade of ODS or ODS containing equipment with countries outside the European Community should carefully consult the Regulation 2037/2000, the Irish Regulations (S.I. No. 281 of 2006) and the guidance provided on the Commission ODS website prior to making an application to the Commission.

It should also be noted that the Regulation prohibits the import of all ODS in disposable containers, except for essential uses.

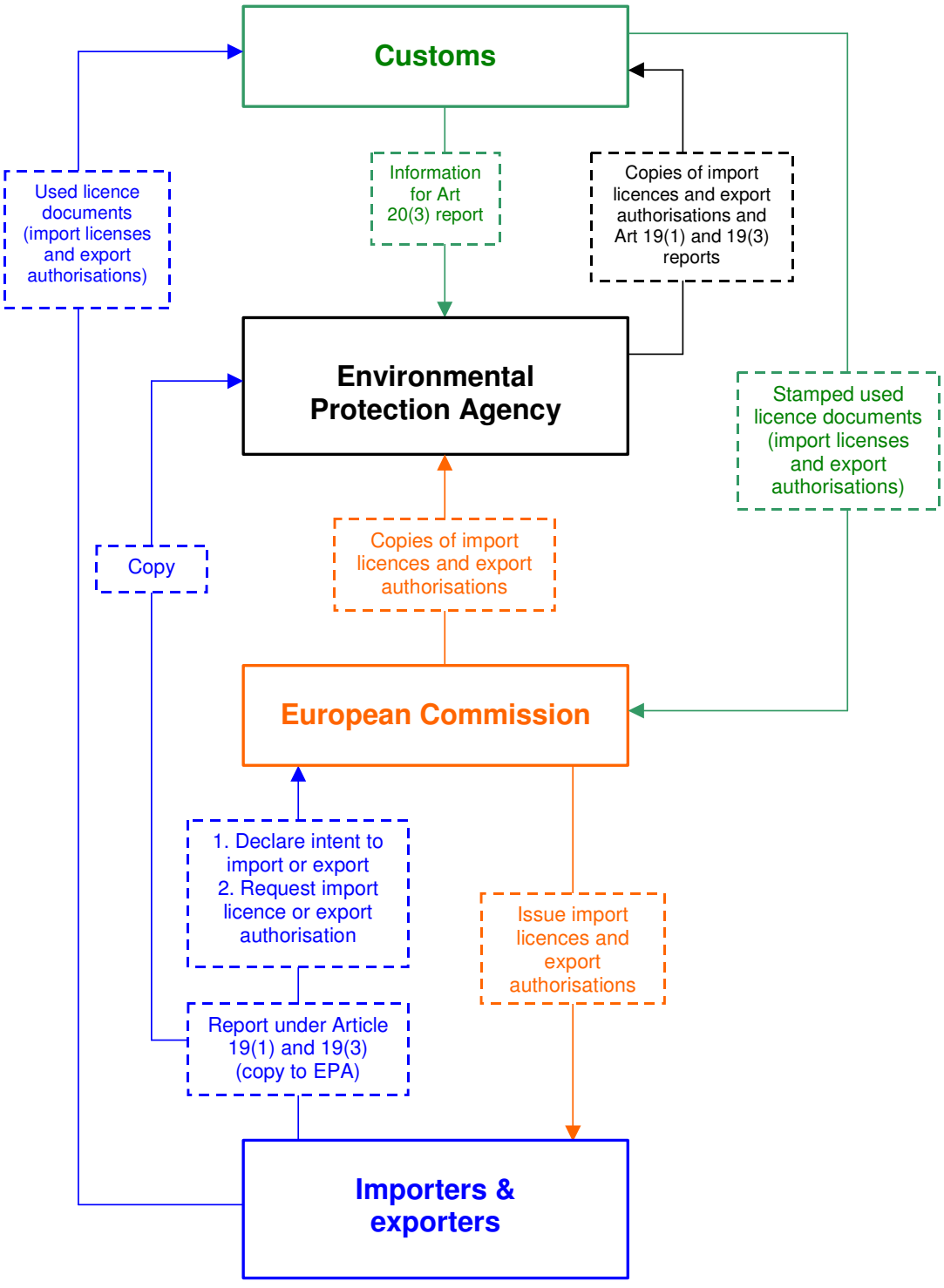

Figure 1 Guidance for importers and exporters

4.4. Supply and Use of Ozone Depleting Substances

CFCs

The supply or use of CFCs is prohibited unless authorised by the Commission for an essential use, such as the manufacture of metered dose inhalers. These authorisations are obtained by following detailed procedures outlined on the Commission's website.

Refrigeration, air-conditioning and heat pump equipment containing CFCs can continue to be used provided no maintenance is required. For example, the topping up of CFC-containing equipment with CFCs or with another refrigerant is not allowed. Any CFCs should be recovered during maintenance and should not be released to atmosphere. Recovery must be carried out in accordance with the requirements of Article 16 of the Regulation. Disposal of waste ODS is discussed in Section 5.

CFC use in certain existing military application is allowed until the end of 2008, subject to no other suitable alternatives being available (Article 4(1) of the Regulation). Any such uses should be discussed in the first instance with the Environmental Protection Agency, as competent authority.

HCFCs

In the maintenance and servicing of refrigeration and air conditioning equipment, the use of virgin or recycled HCFCs is allowed until 1st January 2010, and the use of recycled HCFCs is allowed until 1st January 2015[6]. Such HCFC systems can remain in operation after this date provided no maintenance is required. However, a proactive approach to decommissioning and replacement would be encouraged as best practice to avoid a situation where faulty equipment cannot be maintained after 1st January 2015.

The refurbishment or upgrade of existing systems currently using HCFC refrigerants, which would result in an increase in the refrigerant volume is prohibited.

Use of CFCs and HCFCs as a feedstock, processing agent or for laboratory use is described in the "Guidance Note on Ozone Depleting Solvents".

Maintenance and leak detection

Regulation (EC) No. 2037/2000 requires precautionary measures to be taken against leakages of controlled substances. All equipment with a refrigerant fluid charge of more than 3kg must undergo annual leak testing. Records of such leaks should be maintained, as detailed in Section 6.

[6] The Commission may decide, following a review to be conducted by 31 December 2008, to adapt this date.

4.5. Training

The minimum qualification for persons whose business or employment involves the installation, maintenance, servicing, dismantling or disposal of refrigeration, air conditioning or heat pump equipment is the City and Guilds Certificate in Handling Refrigerants Scheme 2078, or equivalent[7]. This requirement is made mandatory by Article 9 of the Control of Substances that Deplete the Ozone Layer Regulations 2006 (S.I. No. 281 of 2006), addressing Article 16 of Regulation 2037/2000.

Leak prevention is a critical aspect of the Regulation and all technicians should take particular care to minimise leaks during all installation, maintenance and decommissioning of equipment.

5. ODS WASTE MANAGEMENT

Detailed guidance on management of waste ODS is provided in Appendix A, while a general introduction is provided in this section.

The EU Directive on Waste Electrical and Electronic Equipment (WEEE) came into force on 13th August 2005 and its main provision is to assign responsibility for recovery, recycling and disposal of WEEE, including waste fridges, to producers. The public has two options for disposal of domestic fridges and freezers:

- Each local authority must accept domestic fridges and freezers and other WEEE free of charge at its civic amenity facilities.
- Retailers are required by law to take back domestic fridges and freezers and other WEEE free of charge when the new appliance is purchased, provided the appliance being returned is of a similar type.

The WEEE Directive is implemented in Ireland by the Waste Management (Waste Electrical and Electronic Equipment) Regulations 2005 (S.I. No. 340 of 2005) and is enforced by the Environmental Protection Agency and local authorities. Further information on WEEE enforcement is available on the EPA website: www.weee-enforcement.ie

The ODS Regulation requires that all ODS must be recovered during servicing and maintenance of equipment or prior to disposal or dismantling of the equipment.

Waste ODS (and also, potentially, used ODS containers) is considered a hazardous material and is subject to the requirements of the relevant EU and Irish waste management legislation including:

- Waste Management Acts 1996 to 2008;

[7] Any decision on equivalent qualifications will be made by the Environmental Protection Agency.

- Waste Management (Hazardous Waste) Regulations 1998;
- Waste Management (Movement of Hazardous Waste) Regulations, 1998;
- Waste Management (Shipment of Waste) Regulations, 2007;
- The Carriage of Dangerous Goods by Road Regulations, 2001;
- Waste Management (Collection permit) Regulations, 2007;
- Waste Management (Collection Permit) (Amendment) Regulations, 2008;

It is important to note that the legislative references detailed in the text are subject to ongoing review both at EU and national level and may change in time.

For movement of hazardous waste within Ireland, the movement of the waste must be recorded by means of a consignment note, known as a C1 form (which are obtained from local authorities).

Export of hazardous waste is subject to Transfrontier Shipment (TFS) requirements. Dublin City Council operates the National TFS Office, which can be contacted as follows:

Dublin City Council National TFS Office Eblana House 68-71 Marrowbone Lane Dublin 8	Administration Department (01) 222 4411 (01) 222 4601 (01) 222 4634 (01) 222 4249	Technical Department (01) 222 4374 (01) 222 4235 (01) 222 4467

Fax: (01) 411 3440

Email: nationaltfs@dublincity.ie

Web: www.dublincity.ie

The collection and movement of waste, returned and recovered refrigerant gases is subject to requirements outlined in the Collection Permit Regulations. Special provisions have been made to allow the collection and movement of such refrigerants either by waste collection permit holder or by a person that has submitted a Prior Annual Notification to the EPA. Refer to the EPA website for further information on waste ODS collection:

- www.ozone.ie

Prior Annual Notifications must be made to the EPA, providing information specified in the Fifth Schedule of the Regulations, and can only be made where the following conditions are met:

- the activity is incidental to the main business
- the activity is small-scale, leading to environmentally beneficial operations
- the quantity transported does not exceed 2 tonnes
- no mixing of different gases occurs
- the material is brought to an authorised facility[8]
- handling and transport should prevent venting or leakage
- the material is recycled or destroyed according to relevant requirements

the activity is incidental to the main business

- the activity is small-scale, leading to environmentally beneficial operations
- the quantity transported does not exceed 2 tonnes
- no mixing of different gases occurs

The movement and disposal of hazardous waste is a relatively complex and specialised area, and it is therefore recommended that the services of a licensed hazardous waste contractor is employed to dispose of any consignments of hazardous waste. A list of licensed contractors is available on the Irish EPA website at www.epa.ie (A search facility for waste licences is available on the home page).

Upon ultimate disposal of the waste a certificate of disposal will be issued to the producer of the waste. A copy of all waste documentation (e.g. C1 forms, TFS documents) should be kept by the producer of the waste and maintained (along with other related waste documentation) for a minimum of 7 years.

CFCs and HCFCs can only be destroyed by approved methods, the most common of which is high temperature incineration. No such facilities are available in Ireland at present and therefore all such waste must be exported for destruction abroad.

[8] An authorised facility is a facility that has been granted an waste/site authorisation in the form of a waste licence, a waste facility permit or a certificate of registration

6. REPORTING REQUIREMENTS

Producers, importers and exporters of ODS are required to report annually to the Commission, according to the requirements set out in Article 19 of Regulation 2037/2000, copying any such report to the Environmental Protection Agency.

Records of checks for leakages from equipment with a refrigerant fluid charge of more than 3kg should be retained for inspection, detailing date of inspection, possible losses and corrective actions taken.

The EPA, as competent authority is required to submit a report under Articles 16 and 17 of the Regulation, pertaining to the management of used controlled substances. To this end, an annual survey of the refrigeration, air conditioning and heat pump sector is conducted by the EPA to gather the information necessary to compile this report.

7. ALTERNATIVES TO ODS REFRIGERANT GASES

There are numerous refrigerants on the market that have been developed as alternatives to CFCs and HCFCs. These fall into three main groups:

HCFC blends

These were introduced as alternatives to CFC 12 and CFC 502. The majority of these blends have been used in the conversion of existing CFC equipment. The use of virgin HCFC for maintenance must be phased out by 1st January 2010 and all HCFCs from 1 January 2015. Most HCFC blends were specifically developed to provide a low cost retro-fill and were particularly useful in direct expansion CFC systems. Due to the proposed phase-out dates for HCFCs the use of HCFCs and HCFC blends is not considered a viable long term solution.

HFCs and HFC blends

These can be used as alternatives for both CFCs and HCFCs and have a zero ODP. All pure HFCs and most HFC blends require the use of synthetic lubricating oils in place of the more conventional mineral oils used for CFCs and HCFCs. This makes retrofill more expensive, but it is still a practical proposition in many situations. HFCs are greenhouse gases and contribute to global warming. Although HFCs are less potent greenhouse gases than CFCs, leaks during maintenance must be prevented and minimised. However, their favourable properties, including being non-flammable and non-toxic, make them a popular alternative in both existing and new systems. HCFC-22 has been replaced with R-407c in articulated bus and rail sites and by R-134a and R-404a in refrigerated transport containers.

However, the long-term viability of using HFCs as a replacement for ODS refrigerants is also in question. Restrictions on the marketing and use of fluorinated compounds have been introduced by recent European legislation (Regulation 842/2006 on certain fluorinated greenhouse gases).

Ammonia and Hydrocarbons (HCs)

These so-called "natural refrigerants" have excellent thermodynamic properties and can be used in certain systems. Ammonia may only be used in equipment specifically designed for ammonia as it is highly toxic and slightly flammable. Materials incompatibility also makes ammonia generally unsuitable for small vapour compression systems. HCs are highly flammable and should only be used in systems designed to cope with the flammability risk. As a general rule, HCs are viable alternatives in small systems and in larger systems remote from public access. HCs can only be used in existing systems if great care is taken to address safety issues.

The Commission has published a list of companies offering ODS alternative for foams and refrigerants which is available on the Commission website (http://ec.europa.eu/environment/ozone/alternatives.htm).

8. ENFORCEMENT AND PROSECUTIONS

The Environmental Protection Agency has been officially designated as competent authority for the implementation and enforcement of Regulation (EC) No. 2037/2000 by Article 6 of the Control of Substances that Deplete the Ozone Layer Regulations 2006 (S.I. No. 281 of 2006). In addition, supporting roles have been assigned to three competent bodies as follows:

- Department of Agriculture and Food
- The Revenue Commissioners
- The Maritime Safety Directorate

With the support of relevant competent bodies, the EPA will continue, and expand where necessary, its current contacts with the refrigeration, air conditioning and heat-pump sector with the view to ensuring compliance and gathering data to meet reporting requirements.

Any breaches of the Regulation will be regarded seriously by the Agency and the competent bodies. Prosecution is provided for under Article 12 of the Control of Substances that Deplete the Ozone Layer Regulations 2006 (S.I. No. 281 of 2006).

9. OTHER SOURCES OF INFORMATION

Competent Authority - Environmental Protection Agency

Ozone Depleting Substances
Office of Licensing and Guidance
Environmental Protection Agency
PO Box 3000, Johnstown Castle Estate
Co. Wexford
Phone: 053 9160600
Website: www.ozone.ie

Government Body - Department of the Environment, Heritage and Local Government

Air/Climate Section
Department of the Environment, Heritage and Local Government
Customs House
Dublin 1
Phone: 01 8882000
Website: www.environ.ie/en/Environment/Atmosphere/ProtectionoftheOzoneLayer/

Competent Bodies –

Department of Agriculture and Food

Pesticide Control Service
Department of Agriculture and Food
Laboratories
Backweston Campus
Young's Cross
Celbridge
County Kildare
Phone: 01 6157552
www.pcs.agriculture.gov.ie/

Forest Service
Department of Agriculture and Food
Agriculture House
Kildare Street
Dublin 2
Phone: 1 6072000
www.agriculture.gov.ie/index.jsp?file=forestry/pages/index.xml

Revenue Commissioners (Customs Division)

Office of the Revenue Commissioners
International and Trade Security Branch
Customs Division
Nenagh
Co. Tipperary
Phone: 067 63400
Website: www.revenue.ie

Maritime Safety Directorate

Maritime Safety Directorate
Department of Transport
Leeson Lane
Dublin 2
Phone: 01 6786400
Website: www.transport.ie/marine/MaritimeSafetyDirectorate/index.asp?lang=ENG&loc=1933

Useful Websites

- www.refrigerationskillnet.ie
- www.instituteofrefrigerationireland.ie/
- www.uneptie.org/ozonaction/

- http://ozone.unep.org/
- http://ec.europa.eu/environment/ozone/index.htm
- www.euro.who.int/globalchange/topics/20020627_1

Appendix A - ODS Waste Management Guidance

1. WASTE CLASSIFICATION

Most waste ODS and used ODS containers[9] are classified as hazardous substances. Waste is classified across the EU according to the European Waste Catalogue and Hazardous Waste List[10]. Most of the ODS are covered under the following chapters of the catalogue:

ODS substances (gases, solvents, etc.)

Chapter 07	Wastes from organic chemical processes (this section includes codes for solvents used in a wide range of organic chemical industries)
Chapter 08	Wastes from the manufacture, formulation, supply and use (MFSU) of coatings (paints, varnishes and vitreous enamels), sealants and printing inks
Chapter 14	Waste organic solvents, refrigerants and propellants (except 07 and 08)

For equipment containing ODS

Chapter 16	Wastes from electrical and electronic equipment (including CFC, HCFC and HFC)
Chapter 20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions

The European Waste Catalogue and Hazardous waste list can be downloaded from the following web site: http://www.epa.ie/whatwedo/resource/nwr/

2.0 COLLECTION AND TRANSPORT OF WASTE

2.1 Waste Collection Permits

In general, waste may only be collected and transported by holders of waste collection permits. Waste collection permits are granted by local authorities. However, special provisions have been made in the revised Waste Collection Permit Regulations to allow the collection of waste, returned or recovered refrigerant gases to be carried on by persons that have made a Prior Annual Notification to the EPA. Further information is available on www.ozone.ie.

[9] Containers that were used to transport ODS that are now empty or are nominally empty and are to be disposed of.

[10] EPA, European Waste Catalogue and Hazardous waste List (2002). See http://www.epa.ie/whatwedo/resource/nwr/

The special provisions referred to above can only be made by persons meeting the following conditions:

- the activity is incidental to the main business
- the activity is small-scale, leading to environmentally beneficial operations
- the quantity transported does not exceed 2 tonnes
- no mixing of different gases occurs
- the material is brought to an authorised facility[11]
- handling and transport should prevent venting or leakage
- the material is recycled or destroyed according to relevant requirements

2.2 Transport of Hazardous Waste within Ireland (C1 form)

The movement of hazardous waste point to point within Ireland must be accompanied by a C1 form in accordance with the Waste Management (Movement of Hazardous Waste) Regulations, 1998[12]. However, a number of exemptions apply, under Article 35 of the Collection Permit Regulations[13].

In practical terms, the C1 form must be completed at each stage of a journey. The form has five carbon copies. By the time the shipment is ended, one copy will be with the originator of the waste, one copy will be with the authorised destination facility, one copy will be with the local authority that issued the blank C1, one copy will be with the destination local authority and one copy will be retained by the carrier.

C1 forms may be obtained from the local authority in whose area the waste is collected. For more information on C1 forms, contact your local authority.

2.3 Export of Waste outside of Republic of Ireland

Any movement of waste from a point within Ireland to a point outside of Ireland is governed by the EU Transfrontier Shipment of Waste Regulation (1013/2006)[14]. For the export of hazardous waste, a **transfrontier shipment (TFS) notification** must be made, and

[11] An authorised facility is a facility that has been granted an waste/site authorisation in the form of a waste licence, a waste facility permit or a certificate of registration

[12] S.I. No 147 of 1998 Waste Management (Movement of Hazardous Waste) Regulations, 1998

[13] S.I. No. 820 of 2007 Waste Management (Collection Permit) Regulations, 2007, amended by S.I. No. 87 of 2008

[14] Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste

authorisation to proceed obtained, prior to the export of waste taking place. No export of waste should take place without the appropriate authorisations having been received from the competent authorities in Ireland, the destination country and transit countries[15].

Dublin City council is designated as the National Competent Authority for export, import and transit of waste shipments under the Waste Management (Shipment of Waste) Regulations 2007[16]. Further information can be obtained from the National TFS Office in Dublin City Council: www.dublincity.ie.

A TFS notification is consists of two parts:

1) **Notification form,** which must be completed before waste is moved. This form provides all the information necessary to obtain the advance consent of the competent authorities.

2) **Movement Tracking Form,** which accompanies the shipment when it is moved. It provides information on the actual movement of each waste load.

When the waste is received at its destination, the "consignee" issues a certificate of receipt confirming that the waste has reached its authorised destination. Upon disposal of the waste, the consignee issues a certificate of disposal confirming that the waste has actually been destroyed.

3.0 STORAGE, TREATMENT, RECYCLING, DISPOSAL (AUTHORISED FACILITIES)

Waste may only be stored, treated, recycled or disposed of at authorised facilities. Depending on the type and scale of activity, authorisation may be in the form of an EPA waste licence or a local authority waste facility permit.

A waste licence is typically required for any facility where hazardous waste is stored, treated, recycled or disposed of. This will include any transfer station for ODS in the form of packaged chemical waste, for example, bottles of waste CFC or drums of waste solvent being shipped abroad for disposal by incineration or other means. A list of all licensed facilities in Ireland may be found at: http://www.epa.ie/terminalfour/wasteApril/index.jsp

A waste facility permit is typically required for non-hazardous waste recycling facilities. This typically includes any facility that handles fridges and freezers and general electrical and electronic equipment. Waste Facility Permits are issued by local authorities.

For specified waste activities, certain facilities can operate under a Certificated of Registration issued by a local authority or the EPA.

[15] For example, an export of waste from Ireland to Germany is likely to pass through the Netherlands. In this case the competent authority of destination will be located in Germany and the competent authority of transit will be located in the Netherlands.

[16] S.I. No. 419 of 2007 Waste Management (Shipment of Waste) Regulations, 2007.

Further information on licensing, permitting and certificates of registration can be obtained from the EPA website: http://www.epa.ie/terminalfour/wasteApril/index.jsp

Before you use any facility for the storage, treatment, recycling or disposal of waste for which you are responsible, ask for a copy of the facility's authorisation. If you have any doubts about the facility, check with the appropriate regulator (EPA or local authority) and do not use the facility unless you have seen and are wholly satisfied with the authorisation in place.

3.1 Practicalities of Collection, Transport, Storage, Treatment, Recycling and Disposal

In practical terms, the generator/owner of waste ODS may decide to dispose of the waste in either of two ways:

1) Recover and transport the waste to an authorised waste facility for storage and treatment,

   or

2) Employ the services of a waste contractor to collect the waste on the owner's behalf and transport it to an authorised waste facility.

There are a large number of waste contractors authorised to handle the collection and transport of hazardous waste. These companies will typically provide a full service and deal with all authorisation processes for the transport, storage and export of waste.

As above, do not use any waste contractor that cannot provide evidence of waste collection permits (in respect of any collection and transport of waste) and waste facility permits or licences (in respect of any facility in Ireland to which the waste will be delivered). If exporting waste, ensure that the contractor complies with all transfrontier shipment of waste legislation.

If you intend using a waste broker or dealer to handle your waste, you must ensure that the broker is registered with the National TFS Office. A waste broker arranges to handle, transport, dispose of or recover controlled waste on behalf of others. Waste brokers include waste dealers who acquire waste and sell it on[17].

There are also "Duty of a holder of waste" requirements under Section 32 (1) of the Waste Management Act 1996, that one must be aware of regarding the holding, collection and movement of waste;

32 (1) "*A person shall not hold, transport, recover or dispose of waste in a manner that causes or is likely to cause environmental pollution".*[18]

With regards to the storage of waste, The Waste Management Act 1996 defines 'temporary storage' as the storage of waste for a period not exceeding 6 months. The storage of waste

[17] S.I. No. 113 of 2008 Waste Management (Registration of Brokers and Dealers) Regulations, 2008

[18] Section 32 (1) of the Waste Management Act 1996

greater than 6 months would be deemed a waste disposal or waste recovery activity and would require authorisation from the relevant local authority or the EPA.

Note that the use of unauthorised waste contractors may leave you liable for prosecution if your waste was found to have been handled illegally.

USER COMMENT FORM

Completed forms to be sent to:

Ozone Depleting Substances
Office of Licensing and Guidance
Environmental Protection Agency
PO Box 3000
Johnstown Castle Estate
County Wexford
Ireland
Fax: 053 60699
E-mail: ods@epa.ie Web: www.ozone.ie and www.epa.ie

CONTENTS

STYLE:

INFORMATION:

SUGGESTIONS FOR FUTURE REVISIONS:

NAME……ORGANISATION……

ADDRESS……

DATE……PHONE……FAX……

E-MAIL…… WEB……