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Ozone-depleting substances 2014

Aggregated data reported by companies on the import, export, production, destruction, and feedstock and process agent use of ozone-depleting substances in the European Union

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Executive summary

Background

The Montreal Protocol on Substances that Deplete the Ozone layer, which entered into force in 1989, aims to protect the stratospheric ozone layer by phasing out more than 200 substances, including chlorofluorocarbons (CFCs), halons, hydrofluorocarbons (HCFCs), hydrobromofluorocarbons (HBFCs), carbon tetrachloride (CTC), trichloroethane (TCA), hydrochloromethane (BCM) and methylbromide (MB). Most known substances with significant ozone-depleting potential (ODP) are covered by the Montreal Protocol. Within the European Union (EU), these substances, or 'controlled substances', are regulated by Regulation (EC) 1005/2009 (known as the ODS Regulation). This regulation stipulates that each company producing, importing into and/or exporting out of the EU, as well as feedstock users, process agent users and destruction facilities must annually report transactions of controlled substances.

In addition to substances controlled under the Montreal Protocol, the ODS Regulation also covers halon 1202, methyl chloride (MC), ethyl bromide (EB), trifluoroiodomethane (TFIM) and n-propyl bromide (n-PB), which are referred to as 'new substances'. Producers, importers and exporters of these substances must also report associated transactions annually.

The data reported on production, import and export is presented to parties of the Montreal Protocol, so that compliance with the protocol and progress in phasing out ozone-depleting substances (ODS) can be monitored. The EU has already achieved its phase-out goals under the Montreal Protocol, and is currently reporting mostly exempted, essential and critical uses of ODS.

This document summarises the data reported under the ODS Regulation for the year 2014, and looks at the major trends since 2006. Data submitted by companies are commercially confidential, and a number of rigorous measures have been applied to protect that confidentiality (see Section 1.6 and Annex 2).

Results are expressed in both metric tonnes and ODP tonnes ([1]).

Key findings

In 2014, the consumption of controlled substances was negative ([2]). The consumption of ODS in the EU has been negative or close to zero since 2010. This means companies in the EU have been consuming relatively small amounts of ODS controlled under the Montreal Protocol.

Imports of controlled substances

Between 2007 and 2010, imports of controlled virgin substances into the EU have declined by 53%, to 8 790 metric tonnes (2010). Since 2010, they have been relatively stable, with minor variations across years. In 2014, imports amounted to 6 843 metric tonnes, a 19% decrease over 2013. The largest imported quantities in 2014 were HCFCs (43% when expressed in metric tonnes), MB, CFCs and BCM.

Expressed in ODP tonnes, imports of virgin MB and CFCs were highest. Of the MB imports, 91% was for quarantine and pre-shipment services (to be re-exported). Only 9% of the MB (when expressed in ODP tonnes) was placed on the European market, predominantly for feedstock use.

Controlled virgin substances were imported mainly from the United States and China.

Controlled non-virgin substances were imported into the EU to a much lesser extent than virgin substances, and these amounted to 0.9% of total imports when expressed in metric tonnes.

([1]) See Section 1.5 for the terminology and definition of ODP.
([2]) Consumption is a parameter that gives an idea of the presence of ozone-depleting substances in the market and tracks the progress in phasing out these chemicals. This parameter can be a negative number in certain conditions. More details are provided in Section 2.1.

Exports of controlled substances

In 2014, the quantity of controlled virgin substances exported in metric tonnes (including re-export) from the EU continued to decline. The total quantity exported in 2014 (11 247 metric tonnes) was approximately 322 metric tonnes lower than in 2013, and constituted predominantly HCFCs (76% when expressed in metric tonnes), MB and CTC. When compared to 2006 data, the controlled virgin substances exported in 2014 were 85% less than in 2006 (75 747 metric tonnes).

Expressed in ODP tonnes, the total quantity exported in 2014 (2 716 ODP tonnes) was 6% higher than that exported in 2013. This is mainly due to higher 2014 exports of CTC, which has a relatively high ODP compared to the other controlled substances exported, particularly HCFCs.

In 2014, controlled substances were exported to many destinations: the largest amounts were exported to Japan, Mexico, Saudi Arabia, Brazil and South Africa (in order of importance).

Similarly to imports, controlled non-virgin substances were exported out of the EU to a much lesser extent than controlled virgin substances; they amounted to 2.5% of total exports when expressed in metric tonnes.

Production of controlled substances

The production of controlled substances has been declining steadily since 2006, with a pronounced dip in production around the time of the economic crisis in 2009. In 2014, total production of controlled substances was 177 040 metric tonnes or 55 222 ODP tonnes. Production was thus slightly higher than in 2013, with a year-on-year increase of 8.2% in metric tonnes or 4.7% in ODP tonnes. Controlled substances produced in the EU were mostly HCFCs (69% of total production in metric tonnes), CTC and TCA. Increases in the production of HCFCs and CTC (up by 7% and 19% in metric tonnes, respectively) are the main reason for the increase of total production. Only minor quantities of CFCs and HBFCs, and no MB or BCM, were produced in the EU in 2014.

In 2014, controlled substances were produced almost exclusively for feedstock use inside the EU (91% of the produced quantity in metric tonnes). The remaining production was either the result of unintentional by-production, or was intended for process agent use or for export as feedstock, foam blowing agents or refrigeration.

There has been a decline in production for some uses, e.g. refrigeration, unintentional by-production and feedstock use outside the EU — this was especially the case especially from 2006 to 2010. Production for feedstock use inside the EU, on the other hand, remained constant throughout the entire period.

Destruction of controlled substances

In 2014, a total of 9 165 metric tonnes of controlled substances was destroyed. The largest quantities destroyed were of CTC, HCFCs and CFCs (6 946, 1 102 and 1 061 metric tonnes, respectively).

Expressed in metric tonnes, destruction in 2014 was 51% higher than in 2013. This considerable difference is explained to a large extent by higher destruction of both unintentionally produced CTC and HCFCs in 2013.

Consumption of controlled substances

Consumption is an aggregated parameter that integrates virgin import, virgin export, production and destruction. Consumption results vary significantly depending on whether they are expressed in metric tonnes or ODP tonnes, because controlled substances with a high ODP (e.g. CFCs and CTC) exhibit a different trend compared to those with a low ODP (e.g. HCFCs).

In 2014, the consumption of controlled substances was negative (− 2 547 metric tonnes), but was 1 054 metric tonnes higher than in the year 2013. The exceptionally low consumption during 2013 is likely at least in part the result of unusual stockpiling of unintentionally produced CTC during 2012 and the subsequent elevated destruction activity during 2013 that resulted from it.

The consumption of controlled substances is expected to stay negative (both in metric tonnes and ODP tonnes) in the future.

Feedstock availability and use of controlled substances

Feedstock use of controlled substances increased by 7% expressed in metric tonnes in 2014, compared to 2013. In 2014, feedstock availability was approximately 978 metric tonnes lower than feedstock use in that year, i.e. a difference of − 0.6% (relative to feedstock use). Since this difference is minor, it can be assumed that all large feedstock users reported during 2014.

Emissions from feedstock uses decreased to an average emission rate of 0.12% (calculated as the

ratio between total emissions and quantities used as make-up ([3]), expressed in metric tonnes). The fact that the drop in emissions coincides with an increase in make-up compared to 2013 seems to point towards improvements in emission control in the industry.

Process agent use

In 2014, the total make-up of controlled substances (CTC, CFC-12 and CFC-113) was lower than in 2013, due to a decrease in make-up of CTC. Nevertheless, the total make-up of controlled substances in 2014 in the EU stayed well below EU restrictions. Emissions also remained within the limit imposed for the EU, by both the Montreal Protocol and the ODS Regulation.

New substances

Production of new substances was on the increase between 2009 and 2012. Since 2013, production has been stagnating. In 2014, the production of new substances was only slightly higher than in 2013, at 1 126 402 metric tonnes (0.4% higher) or 22 843 ODP tonnes (0.2% higher), and this almost exclusively for feedstock use. In 2014, quantities of new substances imported and exported were — as in previous years — comparably small, and they have been decreasing considerably, down by 84% and 26%, respectively, when expressed in metric tonnes (relative to 2013).

In 2014, the production of new substances (expressed in metric tonnes) was almost six times higher than the production of controlled substances. However, due to the lower ODP of new substances, their production contributes approximately 29% to the combined amount of controlled and new substances produced within the EU expressed, in ODP tonnes.

Reporting process

In 2015, companies reported for reporting year 2014, which was the fifth reporting year under the ODS Regulation. It was also the fourth year since the European Environment Agency (EEA) has taken on the data management (including collection, compilation, quality control, and analysis of the companies' reports) as well as the responsibility for providing support to the reporting companies.

Since the 2012 reporting year, companies have reported their ODS transactions via a multilingual online platform, the Business Data Repository (BDR) (see https://bdr.eionet.europa.eu). The EEA provided support to reporters concerning the reporting procedure, and addressed any technical questions in English. A number of manuals and additional guidance documents were made available in all official European languages.

The reported data were subject to automated and manual quality checks, and reporters were asked to submit revised reports via the BDR, where necessary. This process was repeated until submissions passed all quality checks.

Under the ODS Regulation, all companies subject to the regulation have to report their transactions of a given year by 31 March of the following year. Potential reporters were invited to report in February 2015, and were reminded of this obligation mid-March. Invited companies considering themselves exempt from the reporting obligation of the regulation were asked to confirm these circumstances by submitting a 'Not obliged to report' (referred to as a NIL report) via the BDR.

In total, 165 companies reported ODS activities for 2014, and 91 companies submitted NIL reports.

([3]) See Section 1.5 for the terminology and definition of make-up.

1 Introduction

1.1 Background

In 1989, the Montreal Protocol on Substances that Deplete the Ozone layer entered into force. It has the objective of protecting the stratospheric ozone layer by phasing out the production of substances that contribute to ozone depletion. The protocol covers over 200 individual substances with a high ODP, including chlorofluorocarbons (CFCs), halons, carbon tetrachloride (CTC), trichloroethane (TCA), hydrochlorofluorocarbons (HCFCs), hydrobromofluorocarbons (HBFCs), bromochloromethane (BCM) and methylbromide (MB), all of which are referred to as 'controlled substances'.

Within the European Union (EU), the use and trade in controlled substances is regulated by Regulation (EC) 1005/2009 (known as the ODS Regulation) (EC, 2009). This regulation stipulates that each company producing, importing and/or exporting into the EU, as well as feedstock users, process agent users and destruction facilities must annually report their activities concerning controlled substances. The ODS Regulation also encompasses five additional substances that are not covered by the Montreal Protocol but have an ODP (these are referred to as new substances, see page 10). Producers, importers and exporters have to report their activities for new substances. These new substances are halon 1202, methyl chloride (MC), ethyl bromide (EB), trifluoroiodomethane (TFIM) and n-propyl bromide (n-PB).

The data reported on production, import and export is presented to parties of the Montreal Protocol, so that compliance with the Montreal Protocol and progress in phasing out ODS can be monitored. The EU has already achieved its phase-out goals under the Montreal Protocol and is currently mostly reporting exempted, essential and critical uses of ODS.

This document summarises the most recent data (covering the year 2014) reported under the ODS Regulation and looks at the trends since 2006 (EC, 2010 and 2011; EEA, 2012, 2013 and 2014). Data for 2012 and 2013 were also updated, based on the reports resubmitted for these years after the respective reporting deadlines. Data tables in Annex 1 provide additional details. Data submitted by companies are commercially confidential, and a number of rigorous measures have been applied to prevent sensitive information from being made available. These measures are explained in detail in Annex 2.

Results are expressed in both metric tonnes and ozone-depleting potential tonnes (ODP tonnes). Depending on the unit used, the observed trends may differ significantly. Controlled substances with a high ODP (e.g. CFCs and CTC) exhibit a different trend compared to those with a low ODP (e.g. HCFCs).

1.2 Report structure

This report contains an explanation of the background, institutional arrangements, reporting procedure and key terminology (Chapter 1). The aggregation results as well as the methodology used are summarised in Chapter 2. Results are included for the following ODS (controlled substances) transactions: production, import, export, consumption, destruction, feedstock use and process agent use. Production, import and export data of new substances are also presented.

1.3 Institutional arrangements

In 2015, companies reported for reporting year 2014, which was the fifth reporting year under the ODS Regulation. As of reporting year 2011, the EEA has been responsible for collecting, archiving, checking and aggregating information contained in the companies' reports. The EEA is also responsible for supporting the reporters in fulfilling their obligation.

Since 2012, technical support to the ODS reporting process was provided by the EEA's European Topic Centre on Air Pollution and Climate Change Mitigation (ETC/ACM). In previous years, collection, quality control, analysis and support were performed by consultants under service contracts with the European Commission.

1.4 Reporting procedure

Since 2012, reporting on ODS has been performed via an online platform, the BDR (see https://bdr.eionet.europa.eu). This multilingual online platform is a password protected environment that hosts online questionnaires for the various reporting obligations managed by the tool. The use of this submission platform for ODS reporting ensures a transparent documentation of reporting by companies, while providing the required level of security and confidentiality of the reported data. Reporters received support both for the reporting procedure and for technical questions from the EEA and the ETC/ACM support team, and via manuals and additional guidance documents.

Data reported by companies were subject to automated and manual quality checks. The latter were carried out by the ETC/ACM support staff. Reporters also had the option to autonomously run the automated quality checking procedure, in order to check their questionnaire before submission. Where necessary, reporters were contacted to submit a revised report via the BDR. This process was repeated until submissions passed all quality checks.

The ODS Regulation sets the reporting deadline at 31 March of each year. Based on information available on companies present in the market of ODS, the EEA sent out invitation emails in February 2015, reminding companies of their reporting obligations under the ODS Regulation. Additional reminders were sent out in March 2015, and a final warning was sent in April. Invited companies considering themselves exempt from the reporting obligation of the ODS Regulation were invited to communicate these circumstances using the online questionnaire. They were thus asked to submit a NIL report in which they explicitly indicated why they considered themselves not covered by the reporting obligation.

In total, 256 companies responded to the invitation to report. Of these, 91 companies sent in a NIL report and 165 companies submitted an ODS report containing data. Submissions were received from 20 February 2015. Most companies submitting an ODS report were located in the larger Member States, notably France, Germany, Italy, Spain and the United Kingdom.

1.5 Terminology

Section 1.4 presents the key terminology in use throughout the document.

Ozone-depleting substances (ODS)

ODS are substances, mainly compounds with chlorine and bromine, that reach the stratosphere of the Earth and react with stratospheric ozone. This reduces its concentration levels in that region of the atmosphere (the so-called ozone layer) and thus the capacity of the atmosphere to filter ultraviolet light. Most known ODS are regulated under the Montreal Protocol.

Controlled substances

Controlled substances are ODS that are listed in Annex I of the ODS Regulation and are subject to the reporting obligation of Article 7 of the Montreal Protocol.

New substances

'New substances' refers to the five additional substances covered by the ODS Regulation which are not included within the scope of the Montreal Protocol: halon 1202, n-PB, EB, TFIM and MC. EU companies are obliged to report on the production, import and export of these substances in line with the higher level of ambition of the ODS Regulation as compared to the Montreal Protocol.

Mixtures

Throughout this report, the term 'mixtures' refers to gas mixtures consisting of multiple substances, at least one of which is a controlled substance. Destruction facilities are required to report the quantities of individual substances destroyed each year. In certain cases, however, companies were only able to report on the destruction of mixtures of controlled substances with an unknown composition. Therefore, these mixtures are not included in the data presented in this document and are not reported under the Montreal Protocol.

Virgin substances

These are substances that have not been previously used.

Non-virgin substances

These are substances that have been previously used and subsequently recovered from products and equipment, and/or been recycled or reclaimed.

By-production

Unintentional by-production of controlled substances usually concerns volumes that are taken off the process cycle and are at least temporarily stored (e.g. in a buffer tank) before being destroyed, used, placed on the market, exported or sent for destruction in a facility outside the production site.

Feedstock

A number of ODS serve as chemical building blocks for the manufacture of other chemicals (i.e. as 'feedstock'). They are used (directly or indirectly) for the manufacture of a diverse range of products including refrigerants, foam blowing agents, solvents, polymers, pharmaceuticals and agricultural chemicals.

Process agent use

A process agent is a substance that either facilitates a chemical reaction or inhibits an intended chemical reaction in an industrial process.

Make-up

Make-up is the quantity of virgin, recovered or reclaimed controlled substances that has not been used in the process cycle before, and that is fed newly into the process cycle. For feedstock and process agent uses, make-up has to be reported as must the emissions generated during their respective use.

Ozone-depleting potential (ODP)

The ODP of a substance refers to the amount of ozone depletion caused by it. It is the ratio of the impact on ozone of a chemical substance compared to the impact of a similar mass of CFC-11. The potential to deplete the ozone layer of any controlled substance is calculated by multiplying the quantity in metric tonnes by the ODP of the respective substances. The ODP of the controlled and new substances is listed in Annex I and Annex II of the ODS Regulation. Some new substances have a range rather than a single ODP value. In this report, the highest value of the ODP value range is used.

Quarantine and pre-shipment services (QPS)

QPS applications of MB are treatments to prevent the introduction, establishment and/or spread of quarantine pests (including diseases), or to ensure their official control.

1.6 Confidentiality

Data reported under the ODS Regulation are protected by strict confidentiality provisions. Hence, the EEA has applied measures to prevent the deduction of commercially sensitive information in this document. The measures include the aggregation of data for substance groups (where applicable), protection of data that are the result of reports from less than three corporate groups, and additional measures to prevent deduction of sensitive information. A detailed account of the confidentiality measures applied throughout the report is included in Annex 2.

2 Aggregation results

2.1 Methodology

Data covered by this report

All data for 2014 are taken as reported from tables in the online questionnaire. During the current reporting period, reports for previous reporting years were resubmitted ([4]). For the reporting years 2012 to 2013, resubmissions were also taken into account, and therefore the respective data presented here may differ from those in previous reports. To protect confidential information (see Section 1.5), the reported data are aggregated for import, export, production, destruction, consumption, feedstock availability and process agent use. Likewise, data on production, import and exports of new substances are aggregated.

Each of the transactions reported upon is briefly described in the following notes.

Import

Companies reported the quantity imported for each combination of substance, use, customs procedure and source country. Where possible from a confidentiality perspective, quantities were provided separately for each country of origin. The consumption calculation only takes into account imports of virgin substances, and the aggregation results presented therefore focus on such imports.

Export

Reported exports are presented in an aggregated form for all ODS. Exports to overseas countries and territories were included in the total exports. Where possible from a confidentiality perspective, quantities were provided separately for each destination country. As with imports, the aggregation results focus on exports of virgin substances.

Production

Aggregated data on the EU production of controlled substances are provided both as a total as well as for the most important uses. The share of the EU production that is intended for feedstock use over time is presented separately.

Note that production data also include data on unintentional by-production.

Destruction

Aggregated data on destruction activities in the EU are provided.

The total quantity of ODS destroyed at each company was calculated based on:

- the quantity of waste originating from the reported production, purchase or import destroyed at the companies' own destruction facility;
- the quantity of waste sent for destruction to other destruction facilities.

Some companies were only able to report the destruction of mixtures. Such quantities were excluded from this report (see Section 1.5 for the terminology and definition of mixtures).

Consumption

Consumption of controlled substances is a key metric for the implementation of the Montreal Protocol. It is an aggregated metric, calculated from the reported data on production, import, export and destruction. Amounts that were not intended for use (i.e. consumption) in the EU during 2014 are not included in this metric. Similarly, non-virgin imports and

([4]) Companies have the opportunity to resubmit reports for previous reporting cycles, so as to address inconsistencies that span multiple years.

exports as well as substances intended for feedstock and process agent use, or for QPS, are excluded. This approach for calculating consumption is in line with that applied by the United Nations Environment Programme (UNEP) Ozone Secretariat ([5]).

Consumption is a parameter that gives an idea of the presence of ODS in the market and tracks progress in phasing out these chemicals. It is calculated for each calendar year, and is mainly defined as Production plus Imports minus Exports minus Destruction.

The result of this formula can be a negative number when substances are produced and imported in quantities which do not compensate for the amounts that are exported or destroyed. This usually happens when exports or destruction affects quantities that were in the market in previous years (stocks). If the parameter is calculated in ODP tonnes — note that substances have very different ODP values — a negative value is obtained when production/imports affect low-ODP substances and exports/destruction affect high-ODP substances.

Feedstock use and availability

The reporting obligation of the ODS Regulation allows for a direct assessment of the use of controlled substances as feedstock agents. Therefore, based on the data reported, this aggregated value, called **feedstock use,** is only available from 2010 on. Prior to that, it was only possible to infer **feedstock availability**, calculated via production for feedstock use in the EU and imports for feedstock use. While feedstock use sheds light on the amounts of controlled substances used by feedstock users in the EU, feedstock availability highlights the amounts of feedstock available on the EU market. A comparison of both metrics allows for an assessment of how complete the reporting for feedstock uses is.

It is only since the present ODS Regulation came into force in 2010 that feedstock users are obliged to report the use, stocks and emissions of each specific feedstock process. Companies using controlled substances as feedstock had to complete a questionnaire containing similar information to that for process agent users, starting from reporting year 2009. Based on the information contained in the questionnaires, the use of controlled substances as feedstock can be calculated directly, as companies have to report the make-up and quantities destroyed or sent for destruction. For the purpose of feedstock uses in the EU, the use (UFDST) is calculated as:

$$U_{FDST} = M_{FDST} + E_{FDST} + D_{FDST}\ ([6])$$

where M_{FDST} is the quantity used as make-up, E_{FDST} is emissions during feedstock use, and D_{FDST} is the quantity of ODS intended for feedstock use sent to a destruction facility by feedstock users.

Before 2009, the availability of feedstock in the EU could only be determined using production, import and export statistics. Availability (A_{FDST}) was calculated as:

$$A_{FDST} = P_{FDST\text{-}EU} + I_{FDST}$$

where $P_{FDST\text{-}EU}$ is the quantity produced for feedstock use inside the EU and I_{FDST} is the quantity imported for feedstock use.

In this report, both calculation methods are utilised, to check compliance with the reporting obligation by feedstock users.

Process agent use

Since reporting year 2001, process agent users in the EU are required to report the consumption and emissions resulting from process agent use. Only the aggregated totals of make-up ([7]) and emission quantities are presented.

Production, import and export of new substances

This report only contains aggregated data on the production, import and export of the five new substances ([7]). The amount of new substances produced in ODP tonnes is compared to the production of controlled substances in ODP tonnes over time.

2.2 Imports of controlled substances

Imports of controlled virgin substances

Historically, the quantity of controlled virgin substances imported into the EU has declined, from 18 566 metric tonnes in 2006 to 8 790 metric tonnes in 2010 (Figure 2.1). Since 2010, the imported quantity of

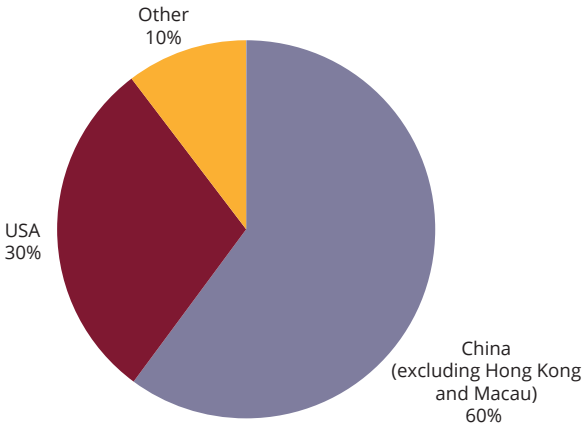
([5]) UNEP, 2012, Handbook for the Montreal Protocol on substances that deplete the ozone layer, Ninth edition, United Nations Environment Programme, Nairobi, Kenya.
([6]) A similar calculation was carried out in the four previous annual summary reports. There, however, U_{FDST} was calculated as $M_{FDST} - E_{FDST} - D_{FDST}$.
([7]) See Section 1.5 for the terminology and definition of make-up.

controlled substances has been relatively constant, with a gradual but steady decline since 2012. In 2014, imports amounted to 6 843 metric tonnes, a 19% decrease over 2013. The controlled substances imported in the largest quantities in 2014 were HCFCs (2 968 metric tonnes or 43%), MB ([8]), CFCs ([8]) and BCM ([8]). Except for HCFCs and small amounts of CFCs, the imported ODS were not available on the European market, as they were not produced in the EU. The imported quantities were predominantly intended for feedstock use (69% when expressed in metric tonnes) and re-export, e.g. for QPS.

The total import of controlled virgin substances was 2 307 ODP tonnes in 2014. The import of MB and CFCs accounted for the largest part of the total import expressed in ODP tonnes. Of the virgin MB, 91% in metric tonnes imported in 2014 was for re-exported for QPS. The remaining 9% of MB was placed on the EU market, almost exclusively for feedstock use.

Imports of controlled virgin substances originated from a limited number of source countries (Figure 2.2): the imported controlled substances mostly came from the

Figure 2.2 Quantity of controlled substances imported in 2014 per source country (percentages expressed based on quantities in metric tonnes)



Note: 'Other' refers to Israel, India, Japan, Saudi Arabia, Singapore and Switzerland.

Source: EEA, 2015.

Figure 2.1 Trend in virgin imports of controlled substances into the EU (expressed in metric tonnes and ODP tonnes)

Source: EC, 2010; EEA, 2012, 2013, 2014 and 2015.

([8]) For reasons of confidentiality, data are not included.

United States and China (30% and 60%, respectively, when expressed in metric tonnes). The remaining 10% came from Israel, India, Saudi Arabia, Japan Switzerland, Singapore, in order of importance.

Imports of controlled non-virgin substances

Controlled non-virgin substances were imported into the EU to a much lesser extent than controlled virgin substances, and amounted to 0.9% of total imports when expressed in metric tonnes. In 2014, non-virgin imports were limited to halons (45 metric tonnes), CFCs ([8]) and HCFCs (15 metric tonnes). Imports of non-virgin substances increased by 19 metric tonnes or 47% in 2014.

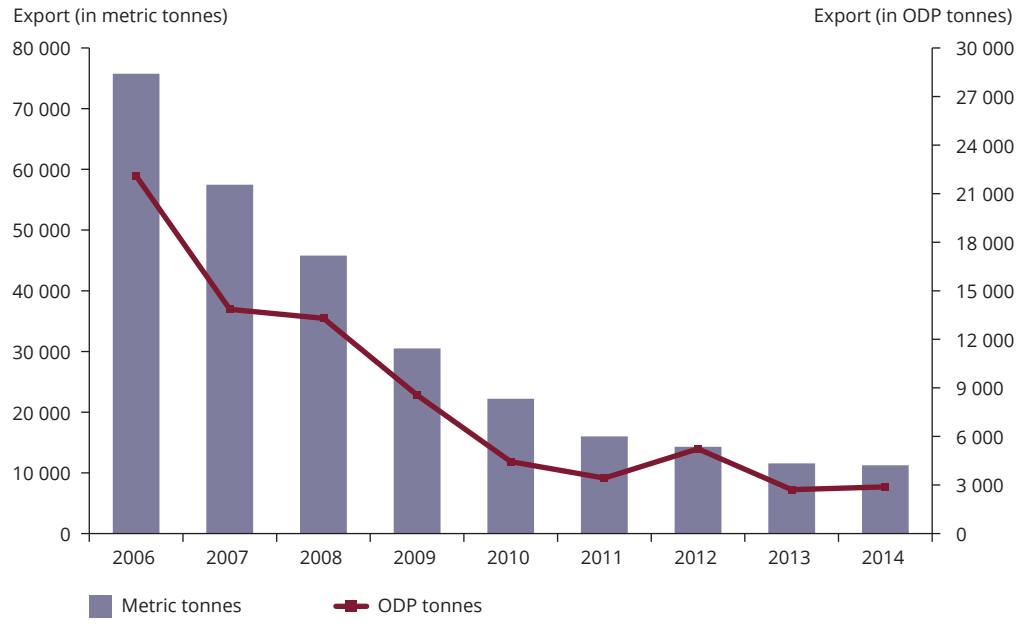
2.3 Export of controlled substances

In 2014, the quantity of controlled virgin substances exported in metric tonnes (including re-export) from the EU continued to decline. The decline can be observed to have started in 2006 (Figure 2.3). The total quantity exported in 2014 amounts to 11 247 metric tonnes (322 metric tonnes lower than in 2013). The decline in 2014 is moderate (3% relative to 2013), and is much less pronounced than the annual decline in export in the period from 2006 to 2013, for which the average year-on-year decline was 23%. The most important controlled virgin substances in terms of amounts exported in 2014 were HCFCs (8 499 metric tonnes), MB (1 562 metric tonnes) and CTC ([9]). Compared to 2013, exports of CTC dropped significantly. The year-on-year decrease of MB exports was also noteworthy (down by 36% relative to 2013).

There are two main reasons for the declining exports. For substances produced in the EU ([10]), the decrease is linked to a relatively stable production combined with an increase in the use of this production for internal EU feedstock and process agent use. For substances like MB, which are not produced in the EU, on the other hand, the decline in exports corresponds with the decline in imports.

When expressing exports of controlled substances in ODP tonnes, the total export amounted to 2 888 ODP tonnes in 2014. This is 6% higher than the export in 2013 (2 716 ODP tonnes) and is mainly caused

Figure 2.3 Trend in exports of controlled virgin substances out of the EU (expressed in metric tonnes and ODP tonnes)



Source: EC, 2010; EEA, 2012, 2013, 2014 and 2015.

([9]) For reasons of confidentiality, data are not included.
([10]) Production of ODS in the EU is limited to CFC-113, CTC, HCFC-22, HCFC-124, HCFC-142, HCFC-142b, HCFC-141b, HBFC-21 B2, HBFC-31 B1, TCA and halon-1301. All other ODS were not produced in the EU; this includes BCM and MB.

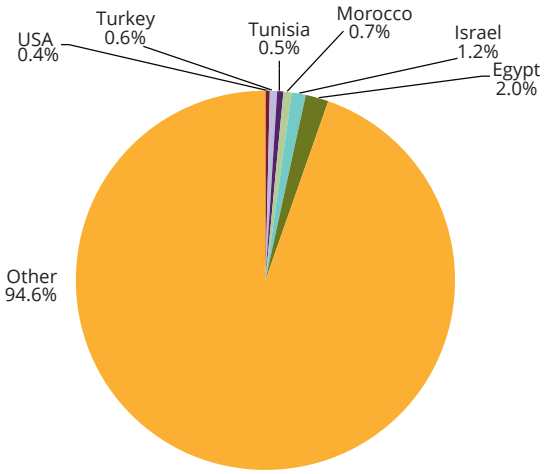
by higher exports in 2014 of CTC, which has a relatively high ODP compared to the other controlled substances exported, especially compared to HCFCs.

Controlled substances are exported to numerous destination countries (Figure 2.4). The most significant quantities are exported to Brazil, Japan, Mexico, Saudi Arabia and South Africa. Note that for confidentiality reasons, exports to all of these countries are included in the category 'Other'.

Exports of controlled non-virgin substances

As with imports, controlled non-virgin substances were exported out of the EU to a much lesser extent than controlled virgin substances, amounting to 2.5% of total exports when expressed in metric tonnes. In both 2013 and 2014, non-virgin imports were limited to halons ([11]) and HCFCs (278 metric tonnes). Imports of non-virgin substances in 2014 increased by 230 metric tonnes, i.e. more than fivefold.

Figure 2.4 **Quantity of controlled substances exported in 2014 per source country (percentages expressed based on quantities in metric tonnes)**



Note: 'Other' refers to Algeria, Angola, Antigua and Barbuda, Australia, Bahamas, Bahrain, Barbados, Belize, Brazil, Congo, The Democratic Republic of the Congo, Côte d'Ivoire, Dominican Republic, El Salvador, French Polynesia, Gabon, Ghana, Guatemala, Guyana, Haiti, Hong Kong, India, Indonesia, Iraq, Japan, Jordan, South Korea, Kuwait, Lebanon, Liberia, Libya, Malaysia, Marshall Islands, Mexico, Morocco, Myanmar, New Zealand, Nigeria, Pakistan, Panama, Philippines, Russia, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Saudi Arabia, Senegal, Singapore, South Africa, Sri Lanka, Switzerland, Taiwan, Thailand, Trinidad and Tobago, Tunisia, Turkey, United Arab Emirates, Uzbekistan, Venezuela, Vietnam and Yemen.

Source: EEA, 2015.

([11]) For reasons of confidentiality, data are not included.

2.4 Production of controlled substances

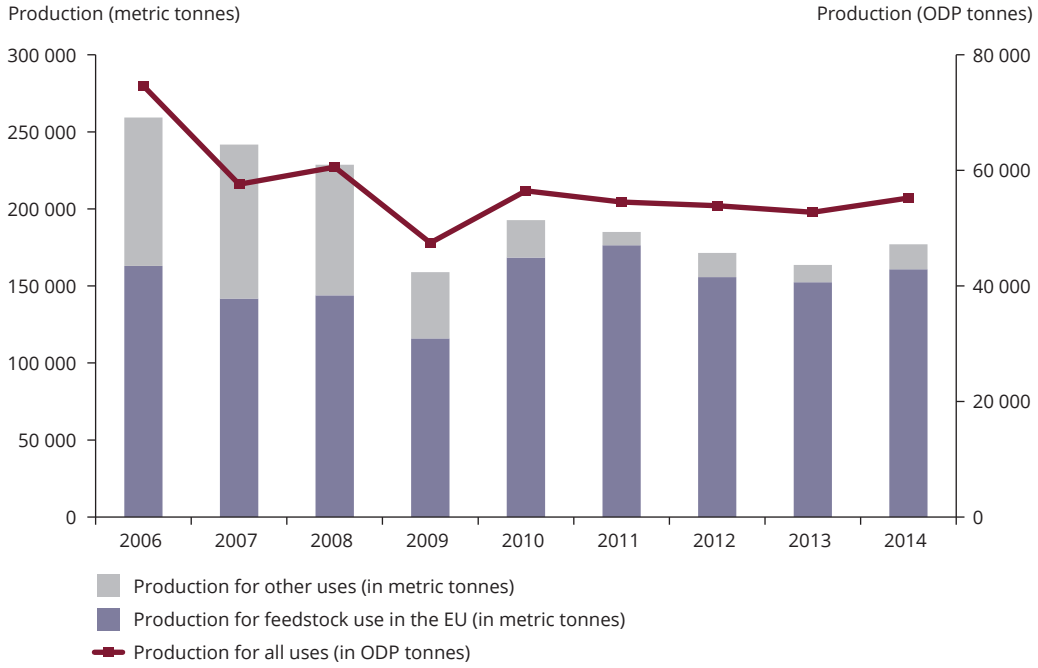
The production of controlled substances has been declining steadily since 2006 (Figure 2.5). A significant dip in production occurred in 2009, most likely linked to the economic downturn in Europe in that year, as a result of the economic crisis. In 2014, total production of controlled substances was 177 040 metric tonnes or 55 222 ODP tonnes. Production was thus slightly higher than in 2013, with a year-on-year increase of 8.2% in metric tonnes or 4.7% in ODP tonnes. Note that produced controlled substances are, by definition, virgin.

The most relevant controlled substances produced in the EU were HCFCs (122 675 metric tonnes), CTC (36 790 metric tonnes) and TCA ([12]). For HCFCs and CTC, this translates to 69% and 21% of the total production when expressed in metric tonnes, respectively. Increases in the production of HCFCs and CTC relative to 2013 (up by 19% and 7% when expressed in metric tonnes, respectively) are the main reason for the increase of total production. Only minor quantities of CFCs and HBFCs and no MB or BCM at all were produced in 2014.

Production of controlled substances in the EU was almost exclusively for feedstock use. In 2014, feedstock use production accounted for 93% of the total production in metric tonnes, most of which was intended for companies located within the EU (91% of total production, in metric tonnes). The remaining production in the EU in 2014 was the result of unintentional by-production (that was subsequently destroyed) or was intended for process agent use, solvents, lab use, foam blowing or refrigeration. For foam blowing and refrigeration, all the produced quantities were exported.

As can be seen in Figure 2.5, the decline in production between 2006 and 2014 is predominantly caused by declining production for other uses (e.g. refrigeration, unintentional by-production and feedstock use outside the EU), while production for feedstock use inside the EU remained constant throughout this period.

Figure 2.5 Trend in production of controlled substances within the EU (expressed in metric tonnes and ODP tonnes)



Source: EC, 2010; EEA, 2012, 2013, 2014 and 2015.

([12]) For reasons of confidentiality, data are not included.

2.5 Destruction of ozone-depleting substances

In 2014, a total of 9 165 metric tonnes of controlled substances was destroyed. The largest quantities destroyed were of CTC (6 946 metric tonnes), HCFCs (1 102 metric tonnes) and CFCs (1 061 metric tonnes). Additionally, 315 metric tonnes of mixtures with an unknown composition were destroyed ([13]).

Excluding quantities of mixtures, destruction in 2014 was 51% higher than in 2013 (expressed in metric tonnes; Figure 2.6). The difference is explained to a large extent by higher destruction in 2013 of both unintentionally produced CTC and HCFCs.

For the period between 2009 and 2012, the declining trend in destruction of controlled substances was mainly due to unintentionally produced CTC that was stockpiled ([14]) and subsequently destroyed during 2013. This stockpiling was not continued after 2012. Instead, since 2012, the amount of ODS destruction has been increasing continuously.

Prior to 2009, destruction facilities did not have to report to the European Commission; data collection and aggregation were carried out differently.

Figure 2.6 Trend in destruction of controlled substances within the EU (expressed in metric tonnes and ODP tonnes)

Note: Destructed mixtures of controlled substances are excluded. The amount for 2011 (marked with *) in ODP tonnes is excluded for reasons of confidentiality.

Source: EC, 2010; EEA, 2012, 2013, 2014 and 2015.

([13]) Because the composition of the waste is unknown and can consist of both ODS and other substances (e.g. fluorinated greenhouse gases such as hydrofluorocarbons), they are not included in the total destruction. For a definition of mixtures, see Section 1.5 for the terminology.

([14]) Stockpiles are stocks held by producers at the end of the year, resulting from production during the reporting year. Stocks at the end of the year resulting from imports, purchases or production in previous years are not included.

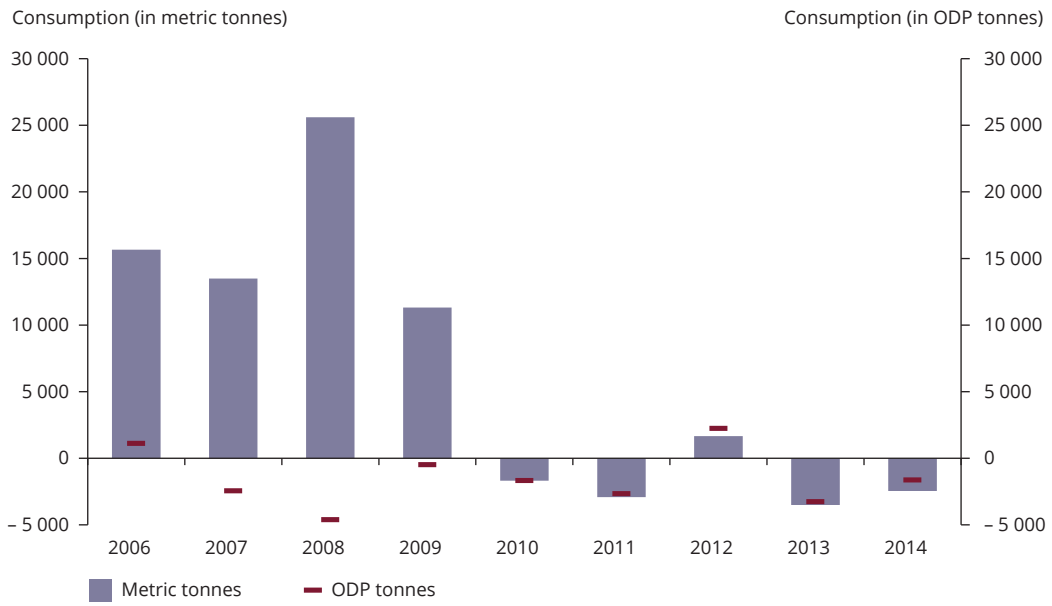
2.6 Consumption of controlled substances

Consumption integrates the statistics on virgin import, virgin export, production and destruction into one single indicator. The trend of consumption in the EU is distinctly different when expressed in metric tonnes than in ODP tonnes, especially in the period from 2006 to 2009 (Figure 2.7).This is due to controlled substances with a high ODP having a negative consumption (e.g. CTC and CFCs) and controlled substances with a lower ODP having a positive consumption (e.g. HCFCs).

In 2014, the consumption of controlled substances was negative (− 2 547 metric tonnes) but was 1 054 metric tonnes higher than in the year 2013. However, it is important to note that the exceptionally low consumption during 2013, as well as the positive consumption during 2012, is likely at least in part the result of unusual stockpiling of unintentionally produced CTC during 2012 and the subsequent elevated destruction activity during 2013 that resulted (see Section 2.5).

The consumption of controlled substances is expected to stay negative (both in metric tonnes and ODP tonnes) in the future.

Figure 2.7 Trend in consumption of controlled substances within the EU (expressed in metric tonnes and ODP tonnes)



Source: EC, 2010; EEA, 2012, 2013, 2014 and 2015.

2.7 Use of controlled substances as feedstock

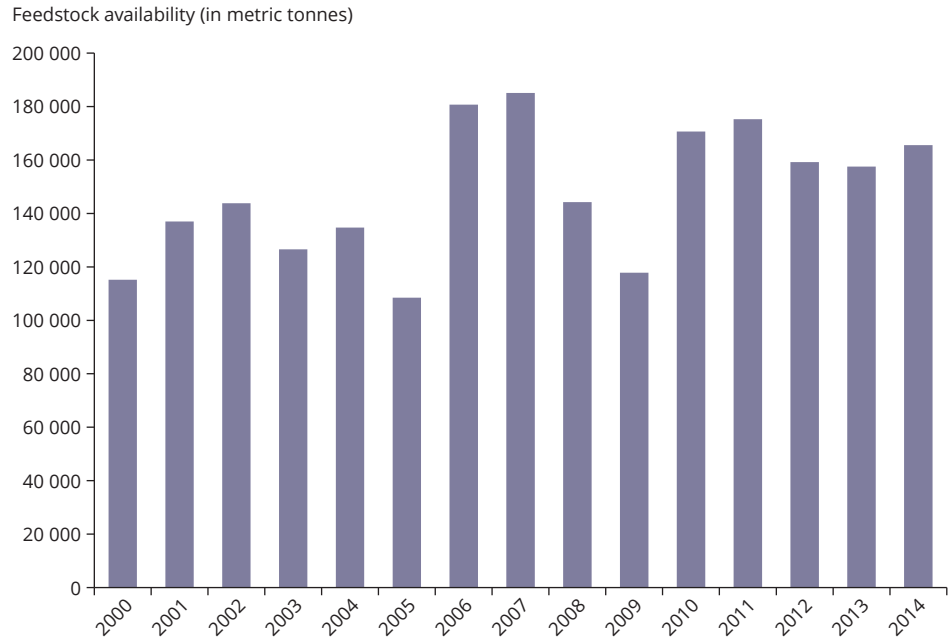
The reporting obligation of the ODS Regulation allows for a direct assessment of the use of controlled virgin substances as feedstock agents. **Feedstock use** can be calculated directly as the reported make-up minus quantities send for destruction by feedstock users. **Feedstock availability**, on the other hand, is calculated using data on production for feedstock use inside the EU and imports for feedstock use. Although the methodologies are different, in principle, both should provide very similar results.

The use of ODS as feedstock when expressed in metric tonnes increased by 7% in 2014 compared to 2013. In 2014, feedstock use was nonetheless lower than in 2011. In 2014, **feedstock availability** was approximately 978 metric tonnes lower than **feedstock use** in that year, i.e. a difference of − 0.6% (relative to feedstock use). To a large extent, changes in stocks can explain this discrepancy. Nonetheless, since this difference is minor, it may be assumed that all large feedstock users reported during 2014.

Emissions from feedstock uses decreased from 195 metric tonnes in 2013 to 190 metric tonnes in 2014. This resulted in an average emission rate of 0.12% (calculated as the ratio between total ODS emissions and quantities used as make-up). The fact that the drop in emissions coincides with an increase in make-up compared to 2013 seems to point towards improvements in emission control by industry. Another interpretation might be that emissions were under-reported in 2014. Regardless, the feedstock emission rate remains much lower than the emission rate for process agent use (1.44% in 2014).

When looking at the **feedstock availability** trend in the period from 2000 to 2014, it becomes clear that consumption varies considerably across years (Figure 2.8). **Feedstock availability** before 2006 was markedly lower than from 2006 onwards. It then peaked in 2007. After the dip in **feedstock availability** in 2008-2009 (most likely linked to lower rates of activity as a result of the economic crisis), there was an increase again, but not to the same level as previously.

Figure 2.8 Trend in feedstock availability of controlled substances within the EU (expressed in metric tonnes)



Source: EC, 2010; EEA, 2012, 2013, 2014 and 2015.

2.8 Use of controlled substances as process agents

The use of controlled virgin substances as process agents is limited by the Montreal Protocol to a specific set of processes. Moreover, the EU imposes restrictions on the make-up and emissions for each registered process agent user.

In 2014, the total make-up of controlled substances (in effect only CTC, CFC-12 and CFC-113) was lower than in 2013, due to a decrease in make-up of CTC ([15]).

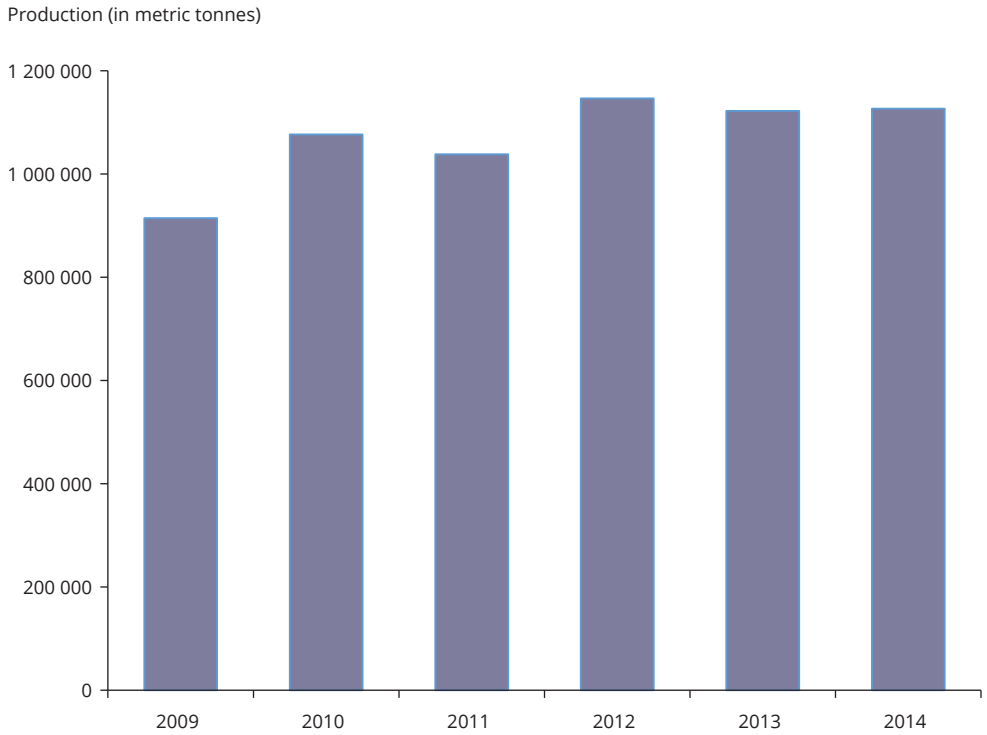
The make-up of controlled substances in 2014 in the EU stayed well below EU restrictions. Emissions also remained within the limit imposed for the EU by the Montreal Protocol (i.e. 17 metric tonnes). Likewise, the limit imposed by the ODS Regulation (16.1 metric tonnes) was not exceeded.

2.9 New substances

Producers, importers and exporters of new substances have to report information on these substances. The production of new substances seems to have stagnated (Figure 2.9); in 2014, it is 0.4% higher than in 2013, at 1 126 402 metric tonnes or 22 843 ODP tonnes. Production of new substances was almost exclusively for feedstock use (99.7% when expressed in metric tonnes).

As in previous years, quantities imported (1 809 metric tonnes) and exported (4 362 metric tonnes) during 2014 ([16]) are small compared to the quantities produced in the EU. Imports and exports of new substances decreased considerably in 2014, i.e. down by 84% and 26%, respectively (relative to 2013).

Figure 2.9 Trend in production of new substances within the EU (expressed in metric tonnes)

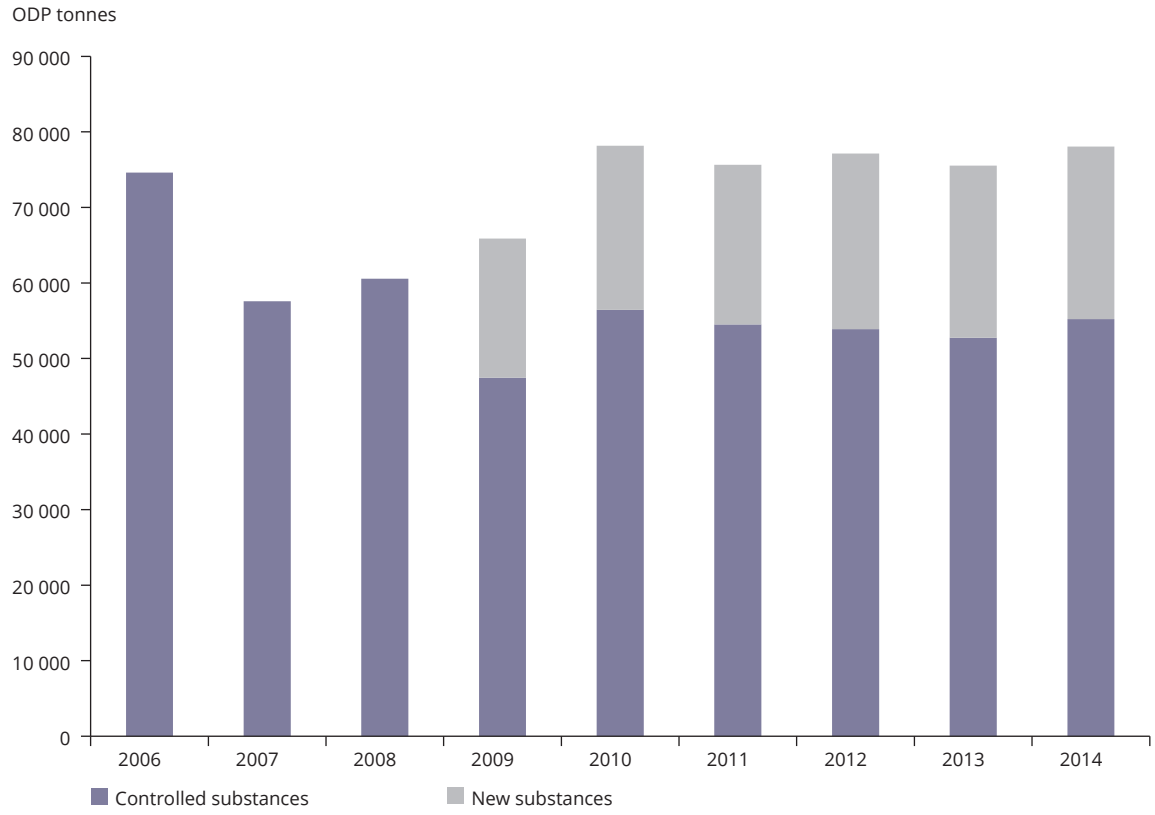


Note: In 2014, production of new substances (expressed in metric tonnes) was six times higher than production of controlled substances (similar to 2013). However, due to the lower ODP of new substances ([17]), the picture is different when production quantities are compared in ODP tonnes (Figure 2.10). Nevertheless, the production of new substances accounts for 29% of the total production of substances with an ODP in 2014 (when expressed in ODP tonnes).

Source: EC, 2010; EEA, 2012, 2013, 2014 and 2015.

([15]) For reasons of confidentiality, data are not included.
([16]) Note that new substances are not covered by the Montreal Protocol and no consumption is calculated. A differentiation into virgin and non-virgin imports and exports has therefore been omitted.
([17]) For some new substances, the ODP is expressed as a range in the ODS Regulation. In this case, the highest value was used for conversion from metric tonnes to ODP tonnes.

Figure 2.10 Comparison of production of aggregated new and controlled substances within the EU between 2006 and 2014 (expressed in ODP tonnes)



Source: EC, 2010; EEA, 2012, 2013, 2014 and 2015.

List of abbreviations

BCM	Bromochloromethane
BDR	Business Data Repository
CFC	Chlorofluorocarbon
CTC	Tetrachloromethane (carbon tetrachloride)
DG	Directorate-General
EB	Ethyl bromide, bromoethane
EC	European Commission
EEA	European Environment Agency
ETC/ACM	European Topic Centre for Air Pollution and Climate Change Mitigation
EU	European Union
HBFC	Hydrobromofluorocarbon
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
MB	Methyl bromide, bromomethane
MC	Methyl chloride, chloromethane
n-PB	n-propyl bromide, 1-Bromopropane
ODP	Ozone-depleting potential
ODS	Ozone-depleting substances
QC	Quality control
QPS	Quarantine and Pre-Shipment Services
TCA	1,1,1-Trichloroethane (methyl chloroform)
TFIM	Trifluoroiodomethane, trifluoromethyl iodide
UNEP	United Nations Environment Programme

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Annex 1 Data tables

Table A.1.1 Production, import, export and destruction of controlled and new substances in the EU in 2014 (in metric tonnes)

	Production	Import (virgin)	Export (virgin)	Destruction *
CFCs	C	C	0.65	1 061.15
Halons	C	C	-	21.89
Other CFCs	C	-	-	C
CTC	36 790.05	C	C	6 945.51
TCA	C	C	-	C
HCFCs	122 674.73	2 968.08	8 498.53	1 102.18
HBFCs	C	C	C	-
BCM	-	C	-	-
MB	-	C	1 561.97	C
Total controlled substances	**177 039.75**	**6 843.15**	**11 247.44**	**9 165.24**
Halon-1202	-	C	C	-
MC	1 122 673.36	C	C	-
EB	-	C	C	-
TFIM	-	-	C	-
n-PB	-	947.73	C	-
Total new substances	**1 126 402.41**	**1 808.97**	**4 361.58**	**-**

Note: Mixtures of CFC, HCFC and HFC were destroyed in 2014, but are not included in the data.

* Destruction of new substances is not subject to reporting obligations under ODS Regulation (Regulation (EC) No. 1005/2009).

C: Data are not included for reasons of confidentiality.

Table A.1.2 Production, import, export and destruction of controlled and new substances in the EU in 2014 (in ODP tonnes)

	Production	Import (virgin)	Export (virgin)	Destruction *
CFCs	C	C	0.52	1 050.78
Halons	C	C	-	C
Other CFCs	-	-	-	-
CTC	40 469.06	C	C	7 640.06
TCA	C	-	-	-
HCFCs	7 204.11	90.88	646.38	50.56
HBFCs	C	C	C	-
BCM	-	C	-	-
MB	-	C	937.18	C
Total controlled substances	**55 222.21**	**2 307.40**	**2 888.20**	**8 921.74**
Halon-1202	C	C	C	-
MC	22 453.47	C	C	-
EB	C	C	C	-
TFIM	-	-	C	-
n-PB	C	94.77	C	-
Total new substances	**22 842.85**	**115.80**	**212.80**	**-**

Note: Mixtures of CFC, HCFC and HFC have been destroyed in 2014, but are not included in the data.

* Destruction of new substances is not subject to reporting obligations under ODS Regulation (Regulation (EC) No. 1005/2009).

C: Data are not included for reasons of confidentiality.

Table A1.3 Import of controlled virgin substances in the EU in 2014 (in metric tonnes and ODP tonnes)

Source country	Import in metric tonnes	Import in ODP tonnes
China (excluding Hong Kong and Macao)	4 150.948	1 100.112
United States of America (USA)	2 037.448	1 009.798
Other ([a])	654.75	197.486

Note: ([a]): 'Other' refers to India, Israel, Japan, Saudi Arabia, Singapore and Switzerland.

Table A1.4 Export of controlled virgin substances in the EU in 2014 (in metric tonnes and ODP tonnes)

Destination country	Export in metric tonnes	Export in ODP tonnes
United States	41.31	2.26
Turkey	69.77	25.20
Tunisia	58.88	9.74
Switzerland	8.33	3.03
Russian Federation	32.23	2.34
Morocco	79.65	8.80
Israel	133.32	10.69
Egypt	219.36	94.43
Other ([a])	10 604.59	2 731.71

Note: ([a]) 'Other' refers to 61 countries including Brazil, India, Japan, Mexico, Saudi Arabia and Vietnam.

Table A1.5 Production, import, export and destruction of controlled substances in the EU in 2008–2014 (in metric tonnes)

	2008	2009	2010	2011	2012	2013	2014
Production	228 679.99	158 964.70	192 701.43	185 012.86	171 421.38	163 664.49	177 039.75
For feedstock use in EU	143 884.99	115 953.33	168 413.89	176 348.90	155 738.00	152 376.40	160 818.22
For other uses	84 795.00	43 011.37	24 287.55	8 663.95	15 683.38	11 288.09	16 221.53
Import (virgin)	14 046.61	13 471.89	8 790.44	9 533.52	9 410.25	8 460.82	6 843.15
Export (virgin)	45 787.60	30 506.83	22 205.29	15 995.19	14 301.41	11 569.20	11 247.44
Destruction	20 965.47	15 696.54	9 863.43	6 015.86	2 844.58	5 883.41	9 165.24
Consumption	25 603.34	11 314.25	– 1 680.47	– 2 918.32	1 661.10	– 3 510.90	– 2 456.89

Table A1.6 Production, import, export and destruction of controlled substances in the EU in 2008–2014 (in ODP tonnes)

	2008	2009	2010	2011	2012	2013	2014
Production	60 551.90	47 462.52	56 447.06	54 508.28	53 878.43	52 739.48	55 222.21
For feedstock use in EU	37 713.15	28 212.38	44 293.91	50 496.32	44 833.30	48 604.80	45 556.48
For other uses	22 838.75	19 250.14	12 153.15	4 011.96	9 045.13	4 134.69	9 665.74
Import (virgin)	5 235.18	4 606.11	3 495.83	3 601.74	3 637.36	3 785.64	2 307.40
Export (virgin)	13 299.17	8 555.64	4 445.49	3 429.41	5 233.21	2 715.99	2 888.20
Destruction	23 014.58	16 875.16	11 479.04	6 052.39	2 452.25	5 626.13	8 921.74
Consumption	– 4 597.27	– 467.61	– 1 664.60	– 2 652.16	2 252.16	– 3 252.19	– 1 616.76

Table A1.7 Feedstock availability of controlled substances in the EU in 2000–2014 (in metric tonnes)

	Feedstock availability
2000	115 156.50
2001	137 016.00
2002	143 813.50
2003	126 576.03
2004	134 713.00
2005	108 489.30
2006	180 716.00
2007	185 085.00
2008	144 249.00
2009	117 795.30
2010	170 630.11
2011	175 232.07
2012	159 228.54
2013	157 538.02
2014	165 583.90

Table A1.8 Production, import and export of new substances in the EU in 2009–2014 (in metric tonnes and ODP tonnes)

	2010	2011	2012	2013	2014
In metric tonnes					
Production	1 076 512.41	1 038 156.51	1 146 200.28	1 122 116.61	1 126 402.41
Import	1 534.60	1 987.15	2 124.16	11 586.09	1 808.97
Export	6 105.53	6 333.64	6 472.40	5 898.49	C
In ODP tonnes					
Production	21 722.11	21 138.18	23 258.49	22 798.42	22 842.85
Import	87.93	150.20	127.31	353.64	115.80
Export	226.41	259.84	260.47	304.43	C

Note: C: Data are not included for reasons of confidentiality.

Annex 2 Measures to protect confidential data

Article 27 (8) of the ODS Regulation states that appropriate steps need to be taken to protect the confidentiality of the information submitted according to this piece of EU law. Hence, the EEA, in agreement with the European Commission, has applied measures to prevent the deduction of commercially sensitive information. These measures apply to the production, import, export, destruction and consumption of ODS and (where applicable) new substances, as well as to QPS, process agent and feedstock uses.

The measures include:

1. application of the **'3-company group rule'**, where the data presented in the report must be the result of reporting by at least three company groups (i.e. corporate groups);

2. application of a **'5**% **significance rule'**, where company groups whose reported data add up to less than 5% of the total amount reported for any data-point represented in the report, are ignored for counting under the '3-company group rule';

3. application of additional measures to prevent the deduction of sensitive information.

All measures apply both for amounts reported in metric tonnes and ODP tonnes. Each of the measures is explained in more depth below.

1 The '3-company group rule'
This measure concerns the treatment of data reported by different legal entities across the EU who belong to the same company group. For that purpose, company groups are defined as 'one or more companies legally belonging to the same corporate group'. The agreed principle is that companies belonging to the same corporate group need to be seen as a single entity when it comes to confidentiality rules. The companies' relationships with each other are not reported nor publicly known. The approach applied in 2014 was therefore to identify 'obvious cases' based on information on company names and contact details as reported during the registration process. Once such company groups are thus determined, at least three must contribute to each reported value. This measure replaces the old '3-company rule' as applied by the EEA in previous public ODS reports, which did not take into account possible corporate relationships.

2 The '5% significance rule'
As a second measure, company groups are only included in the above count if they contributed significantly to the reported value. That means that the smallest contributors up to an accumulated share of 5% are not considered when applying the '3-company group rule' explained above. This ensures that at least three corporate entities contribute significantly to each reported transaction value.

3 Preventing deduction of sensitive data
Additional measures were applied to prevent deduction of confidential data.

All transactions

Deduction might be possible in cases were transaction data for certain substances or substance groups (i.e. CFCs, halons, other CFCs, CTC, TCA, HCFCs, HBFCs, BCM or MB) remain confidential, yet data for other substances or substance groups along with a total for the transaction in question are published. Confidential data at risk of such deduction are protected by hiding additional data as confidential (although these additional values had been identified as non-confidential according to the '3-company group' and '5% significance rule'), so that at least values for three (or none) of the substances or substance groups are confidential in the published data for that transaction.

Aggregated transactions

Last but not least, transaction data are hidden in case other confidential transaction data are implied from their publication. In order to understand this additional measure, it should be remembered that consumption of ODS is a calculated transaction that involves corrected production, import, export and destruction data for each substance or substance group.

Box A2.1 A practical guide to applying the '3-company group rule' and '5 % significance rule' measures to data

Operationalisation of the combined '3-company group rule' and '5% significance rule'

Step 1: All values reported by companies of a given company group for a given transaction year were added up for a given transaction and substance or substance group.

$$\sum Xi = X1 + X2 + \cdots Xn$$

$$Xi = individual\ reported\ value\ by\ a\ single\ reporting\ undertaking$$

$$\sum Xi = sum\ of\ individual\ reported\ values\ by\ reporting\ undertakings\ belonging\ to\ the\ same\ company\ group$$

Step 2: The sum of all absolute contributions ($|\sum Xi|$) across company groups was calculated.

Step 3: The percentage share of (2) in relation to (3) was calculated for each company group.

$$\% = \frac{|\sum Xi|}{\sum|\sum Xi|}$$

Step 4: The company groups were sorted in the ascending order of percentages calculated in step 3.

Step 5: An accumulated percentage share was calculated along the sorted company groups.

Step 6: The number of company groups for which the accumulated share was larger than 5% was counted.

In case the count was one or two, the full aggregated value across company groups was hidden as confidential. In case the count was three or more, the full aggregated value across company groups was reported and was thus not confidential.

For the reader, this rather complicated calculation can be simplified as:

The 'Remainder' may appear irrelevant, and a confidential value on production, for instance, may appear as deductible based on non-confidential information on consumption, import and export. In such cases, data are only published in cases where the 'Remainder' exceeds 5% of the consumption.

Treatment of historical data

For the present report, the above-mentioned measures were also applied to the reported values for reporting years 2011 and 2012. Data related to earlier reporting years were not subject to these more rigorous measures, since the commercial relevance of data is decreasing over time. Instead, it continues to be protected by the '3-company rule' that has been applied in previous EEA reports on ODS.

European Environment Agency

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