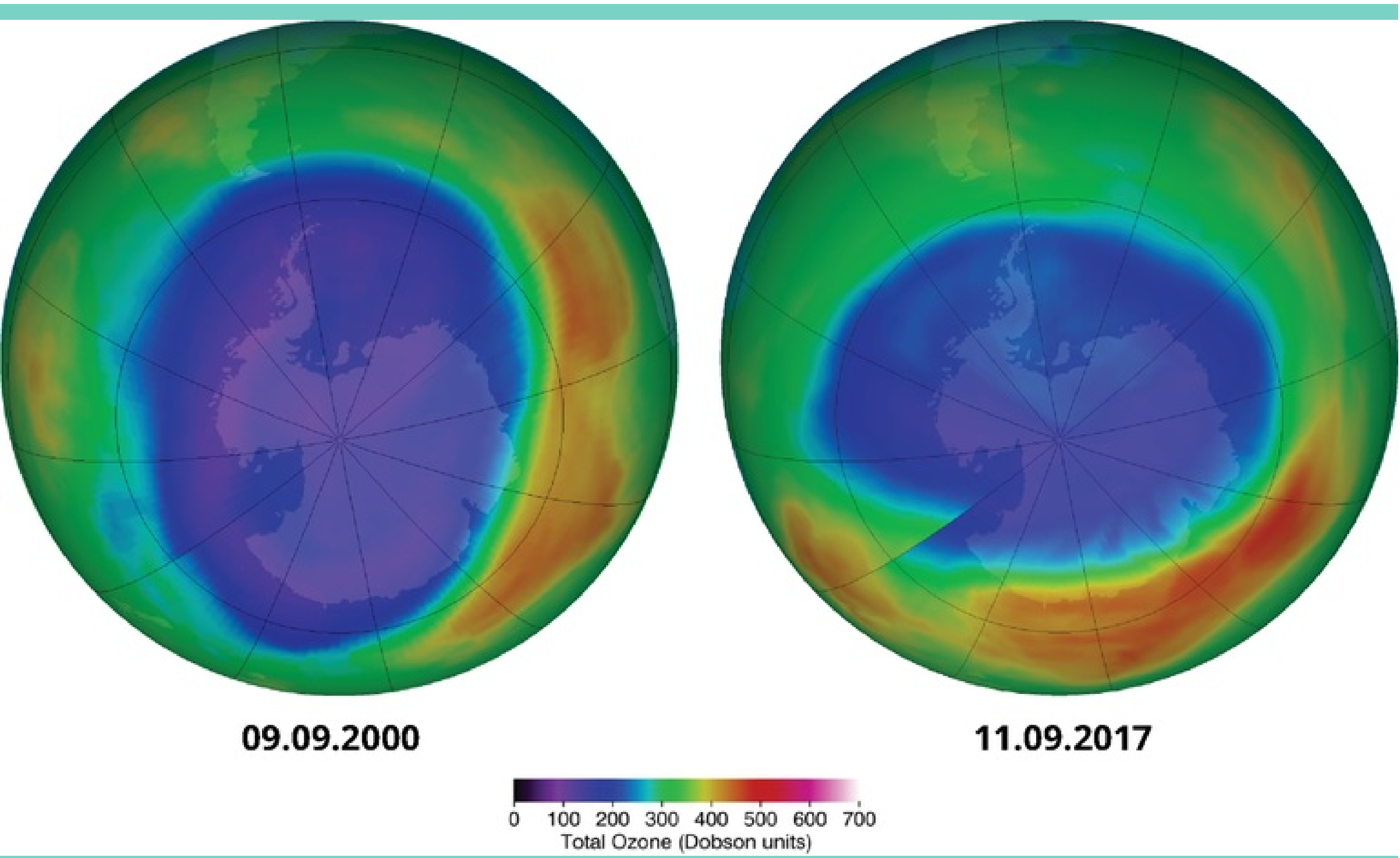
Production and consumption of ozone-depleting substances



European Environment Agency

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Production and consumption of ozone-depleting substances

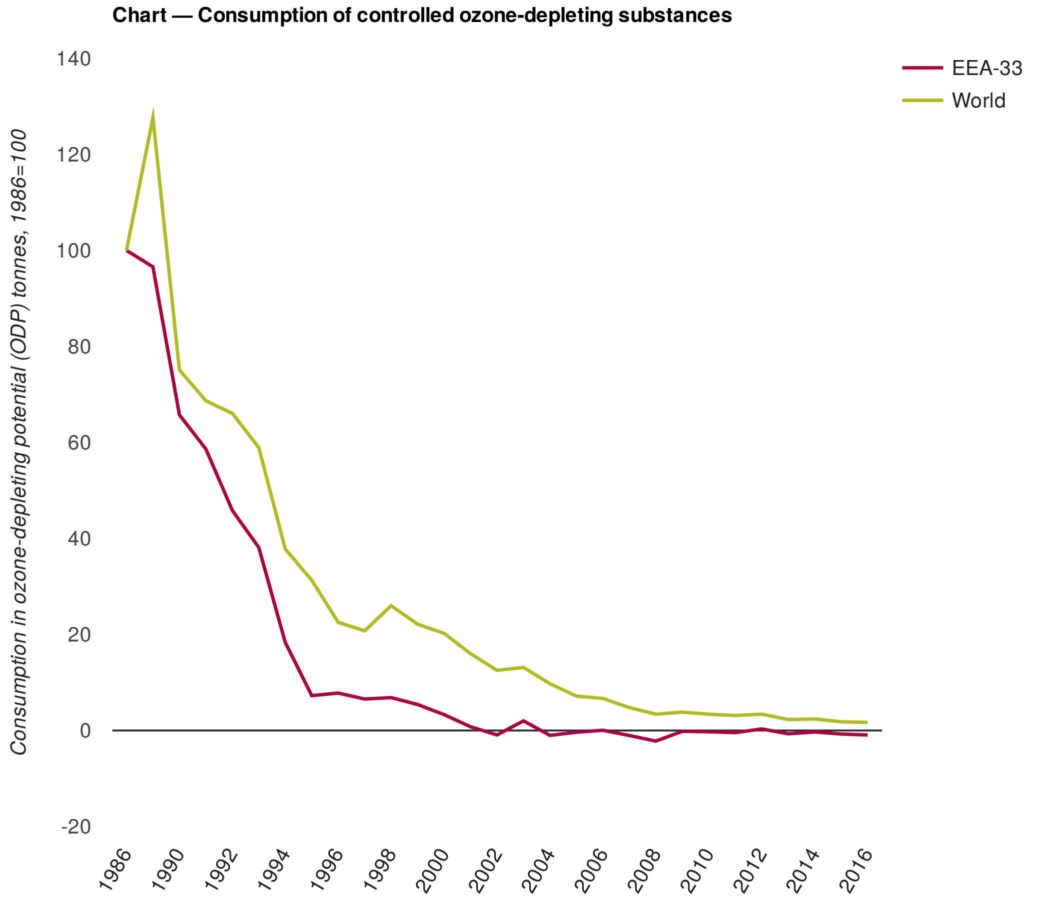
Key messages

A significant reduction in the consumption of ozone-depleting substances (ODS) has been achieved by the EEA-33 countries since 1986. This reduction has been largely driven by the 1987 United Nations Environment Programme (UNEP) Montreal Protocol.

Upon entry into force of the Montreal Protocol, EEA-33 consumption was approximately 420 000 ozone-depleting potential tonnes (ODP tonnes). Consumption values around zero were reached in 2002 and have remained consistently so ever since. Since the early 1990s, the European Union (EU) has taken additional measures, in the shape of EU law, to reduce the consumption of ODS. In many aspects, the current EU regulation on substances that deplete the ozone layer (1005/2009/EC) goes further than the Montreal Protocol and it has also brought forward the phasing out of hydrochlorofluorocarbons (HCFCs) in the EU.

Are ozone-depleting substances being phased out according to the agreed schedule?

Fig. 1: Consumption of controlled ozone-depleting substances



Note:
Figure shows percentage consumption in ODP tonnes relative to ODS consumption in ODP tonnes in 1986.

Explore chart interactively

Data sources:

- Consumption of controlled ozone-depleting substances provided by **UNEP (Ozone Secretariat)**

The 1987 Montreal Protocol is recognised globally as one of the most successful multilateral environmental agreements to date. Its implementation has led to a decrease in the atmospheric burden of ODS in the lower atmosphere and in the stratosphere. The schedule for the limitation and phase-out of the consumption of ODS, as defined in the Montreal Protocol, is summarised in the accompanying indicator specification.

The EU regulation on substances that deplete the ozone layer (ODS Regulation, 1005/2009/EC), which in many aspects goes further than the Montreal Protocol, also brings forward the phasing out of hydrochlorofluorocarbons (HCFCs) from 2020, and introduces an HCFC new-fill ban and a servicing ban. These bans are related to the placing on the market and use of non-virgin HCFCs that are prohibited in the EU for the maintenance or servicing of existing refrigeration, air-conditioning and heat pump equipment. Moreover, with only a few exemptions, the prohibition of imports and exports of products and equipment containing or relying on ODS, including HCFCs, is also brought forward. It also includes a total ban on the use of methyl bromide, including quarantine and pre-shipment applications.

Consumption of ODS decreased significantly in the EEA-33, particularly in the first half of the 1990s. Figure 1 shows that the EEA-33 phased out its use of ODS at a faster rate than the world average. Today it is practically zero.

ODS consumption in the EEA-33 fell from approximately 420 000 ODP tonnes in 1986 to negative values in 2002. Since 2002, values have been negative, except for the years 2003, 2006 and 2012, when they were slightly positive. The value in 2015 was -3 808.88 ODP tonnes.

Consumption is a parameter that gives an idea of the presence of ODS on 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' (quantities destroyed or used in certain applications like feedstock or quarantine and pre-shipment services are subtracted where relevant). As such, its formula can yield a negative number when substances are produced and imported in quantities that do not compensate for the amounts exported or destroyed. This usually happens when export or destruction take place for ODS that were previously on the market in the EEA-33 (stocks). Additionally, different substances have different ODP values. If consumption is calculated in ODP tonnes, a negative value is also obtained when production/imports take place for low-ODP substances and export/destruction take place for high-ODP substances. The latter is the current situation due to the fact that certain high-ODP substances are produced in the EU as by-products which, in general, are stocked before being destroyed.

A closer look at individual ODS substance groups reveals that the phase-out of chlorofluorocarbons (CFCs), halons, 1,1,1 trichloroethane (TCA), hydrobromofluorocarbons (HBFCs), bromochloromethane (BCM) and carbon tetrachloride (CTC) was implemented by the EU according to the agreed schedule under the Montreal Protocol. However, the phase-out of methyl bromide (MB) took three additional years to be completed (due to remaining critical uses approved by the parties to the Protocol). The effects of the HCFC freeze under the Montreal Protocol and the HCFC new-fill ban under the ODS Regulation can also be clearly observed.

What are the remaining uses of ozone-depleting substances?

Fig. 2: Estimated sales of ozone-depleting substances, taking into account both the scope of the Montreal Protocol and the additional substances covered by the ODS Regulation

Status	All EU regulated substances	Covered by Montreal Protocol	Additional substances EU regulation
Critical uses	391.78	391.78	0
Solvent uses	51.66	0	51.66
Feedstock	44,657.64	40,421.66	4,235.98
Process agent	372.72	363.77	8.95
Lab use	7.29	6.82	0.47

Notes:
The data cover the EU-28 (reporting year 2016). The values on sales refer to sales to third parties within the EU market and use by EU producers when relevant. The ODS Regulation covers other known ODS (the so-called 'new substances'), which are also reported to the EEA/European Commission.

Sales are presented in ozone-depleting potential (ODP) tonnes.

Explore chart interactively

European Environment Agency

Data sources:

- Ozone-depleting substances 2016 provided by **European Environment Agency (EEA)**

Fig. 3: Estimated sales of ozone-depleting substances that are controlled under the Montreal Protocol, broken down by use, reported emissions and calculated emission factors.

Status	Sales	Emissions	Emission factor (%)
Critical uses	391.78	N/A	N/A
Feedstock	40,421.66	80.37	0.17
Process agent	363.77	4.15	1.05
Lab use	6.82	N/A	N/A

Notes:
The data cover the EU-28 (reporting year 2016). The values on sales refer to sales to third parties within the EU market and use by EU producers when relevant. Emissions are only to be reported for feedstock and process agent use. The emission factor is calculated as the proportion of reported emissions to the total make-up that was used.

Sales and emissions are presented in ozone-depleting potential (ODP) tonnes.

Explore chart interactively

European Environment Agency

Data sources:

- Ozone-depleting substances 2016 provided by **European Environment Agency (EEA)**

Globally, consumption of ODS controlled under the Montreal Protocol declined by some 98.36 % worldwide between 1986 and 2016.

However, much remains to be done to ensure that the damage to the ozone layer is reverted. Initiatives to further reduce releases of ODS could involve the following:

- Addressing the strong growth in the production and consumption of HCFCs in developing countries;
- Collecting and safely disposing of the large quantities of ODS contained in old equipment and buildings (the so-called ODS 'banks');
- Ensuring that restrictions on ODS continue to be properly implemented and the remaining worldwide use of ODS declines further;
- Preventing illegal trade in ODS; and
- Strengthening the international and European framework on ODS (e.g. inclusion of other known ODS, restricting exemptions).

In the EEA-33, exemptions to the overall phase-down mean that ODS are still used to the extent allowed by the Montreal Protocol and the ODS Regulation (applying to the EU-28). The exempted uses concern 'critical uses', 'feedstock uses', 'process agent uses' and 'laboratory and analytical uses'.

Table 1 (Figure 2) shows an estimate of the quantities of substances covered by the Montreal Protocol that are used within the EU for the above-mentioned uses as reported to the EEA (2016 reporting year, coverage EU-28).

For 'feedstock' and 'process agent use', known to have very low emission factors (0.17 % and 1.05 %, respectively), actual emissions are also to be reported by the companies concerned. These low emission factors are one of the reasons why these two uses operate with less stringent rules under the Montreal Protocol and the EU legislation on ODS. However, given that the Montreal Protocol targets have generally been achieved for the

EEA-33 and worldwide, the importance of these emissions subsequently becomes more apparent. Therefore, any future changes to the rules affecting these uses could potentially result in additional environmental benefits.

The current reporting framework on ODS in the EU does not include reporting on emissions for laboratory uses or critical uses. It is also not possible to reliably estimate these emissions due to the multitude of technologies and industry-sites involved. Instead, these figures are meant to show which ODS uses are still relevant in the EU today and could be a future target of additional operational rules.

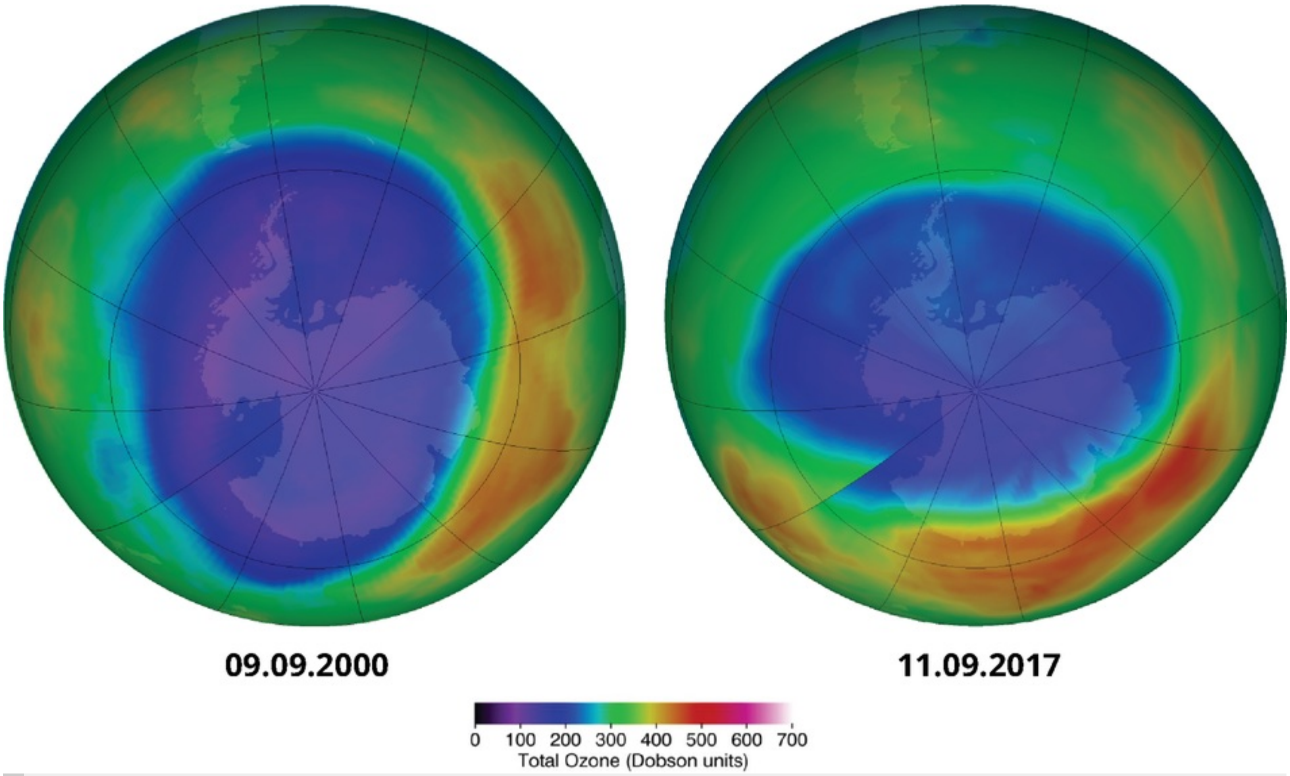
The EU has already gone beyond the rules of the Montreal Protocol to tackle some of the remaining challenges. Among these actions, as previously mentioned, the ODS Regulation introduced a new-fill ban and a servicing ban affecting HCFCs. The ODS Regulation also covers new substances in addition to those controlled under the Montreal Protocol.

Table 2 (Figure 3) shows the combined ODP of the substances covered by both the Montreal Protocol and the ODS Regulation. It becomes apparent that the additional substances covered by the ODS Regulation only ('new substances') are especially relevant as feedstock and industrial solvents (many 'new substances' are used for this latter purpose). The substitution of traditional ODS with these newer ones is a relatively recent trend and is closely monitored by the EEA.

There is also scientific evidence that chemicals other than those covered by the Montreal Protocol and the ODS Regulation are playing a role in the depletion of ozone. In particular, very short-lived substances, such as dichloromethane, could have a negative impact. Given their uncontrolled growth of around 60 % over the last decade, they might delay ozone recovery by 30 years. Adequately managing the use and releases of other known ODS represents a challenge that will need to be addressed by the international community and the EU.

What is the current state of the ozone layer?

Fig. 4: Maximum ozone hole area over the southern hemisphere, historically (9 September 2000) and currently (11 September 2017)

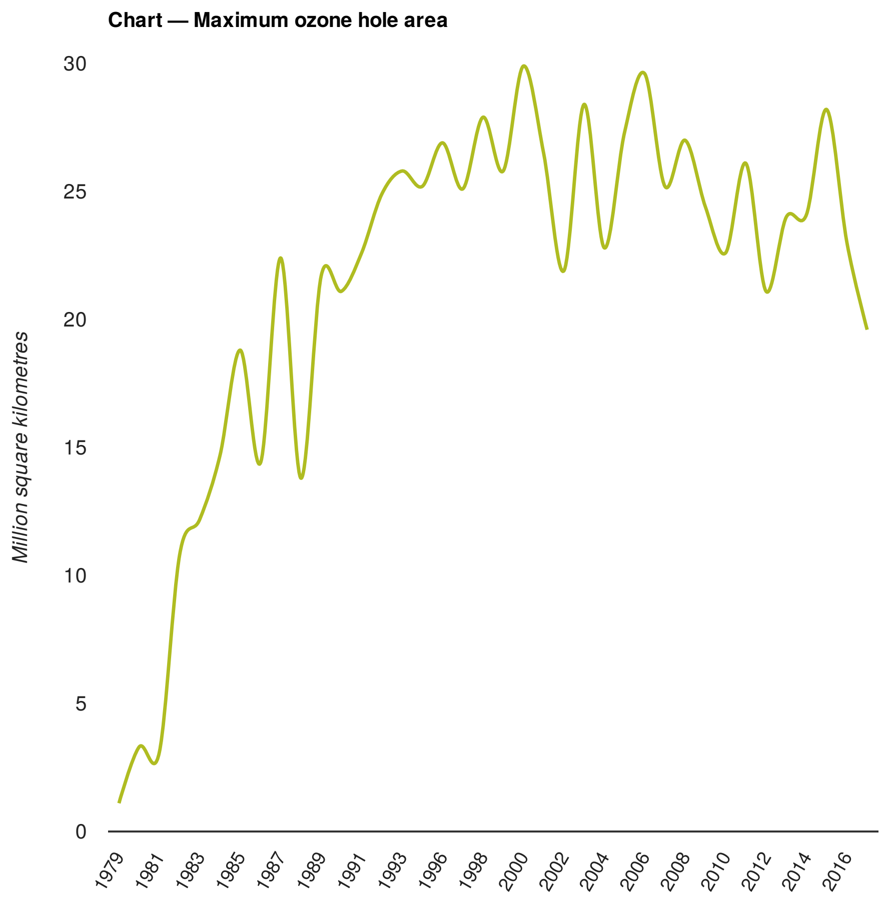


> **Note:** False-colour view of total ozone over the North (Arctic) and South (Antarctic) poles. The purple and blue colours indicate the lowest ozone presence, while yellow and red indicate higher ozone presence. Ozone concentration is commonly measured in Dobson Units. One Dobson Unit is the number of molecules of ozone that would be required to create a layer of pure ozone 0.01 millimetres thick at a temperature of 0 degrees Celsius and a pressure of 1 atmosphere.

Data source:

- Ozone Hole Watch provided by **NASA**

Fig. 5: Maximum ozone hole area



Note:
The ozone hole is a region of exceptionally depleted ozone in the stratosphere over the Antarctic.

Explore chart interactively

Data sources:

- Ozone Hole Watch provided by **NASA**

Depletion of stratospheric ozone occurs over both hemispheres of the Earth. However, this phenomenon is significantly less severe in the northern hemisphere (Arctic) than in the southern hemisphere (Antarctica). This is the case because year-to-year meteorological variability is larger over the Arctic than over the Antarctic. Furthermore, temperatures in the stratosphere do not remain low for a long time in the Arctic as is the case in the Antarctic.

Generally, concentration levels of 200 Dobson Units (DU) or less (represented in blue/violet in the images) are technically considered to represent severe ozone depletion and constitute the so-called ozone hole. This is only apparent in the southern hemisphere. Here, the largest historical extent of the ozone hole was reached on 9

September 2000, with 29.9 million square kilometres (Figures 4 and 5). This area is equivalent to almost seven times the territory of the EU.

Overall, the ozone hole has shown signs of healing since 2000, which is mainly attributable to the phasing out of ODS under the Montreal Protocol. However, the extent of the ozone hole is also periodically influenced by volcanic eruptions, increasing the stratospheric particle load and thereby depleting ozone. This mostly explains occasional years with a comparatively large ozone hole, such as 2015.

The extent of the ozone hole seems to be stagnating with a slight positive prospect. Currently, the ozone hole showed a maximum area of 19.6 million km≤ on 11 September 2017 (Figures 4 and 5). Ozone recovery is also visible in terms of minimum ozone concentrations. During the last five years (2013-2017), the average lowest concentration was 115.2 DU while over the ten preceding years (2007-2017) it reached an average value of 122.0 DU.

However, the mitigation of ozone depletion is still very fragile and scientific evidence suggests that more action is still required to remove pressure on the ozone layer caused by ODS.

Indicator specification and metadata

Indicator definition

Ozone-depleting substances (ODS) are long-lived chemicals that contain chlorine and/or bromine and can deplete the stratospheric ozone layer. This indicator quantifies the current state of the ozone layer, the progress being made towards meeting the EU's Montreal Protocol commitments and trends in the remaining uses of ODS within the EU.

Context: The ozone layer refers to a region of the Earth's atmosphere (the stratosphere) in which ozone (O_3) is present in concentrations high enough to absorb most of the sun's ultraviolet radiation. This natural phenomenon is essential for life on Earth because ultraviolet radiation damages living tissue. Ozone depletion refers to a steady decline of the ozone concentration in the stratosphere and a decrease in stratospheric ozone in the Polar Regions during the spring season. This has become widely known as the 'ozone hole'. This phenomenon was first observed during the 1970s, when it was shown that the ozone hole was caused by complex chemical reactions in the atmosphere involving so-called ODS, which are almost exclusively a result of human industrial activity.

Units

Depending on the metric involved, this indicator uses the annual maximum Antarctic ozone hole area in square kilometers (km^2) and ODS consumption weighted by the ozone-depleting potential (ODP) of the substances in ODP tonnes.

Rationale

Justification for indicator selection

The release of ozone-depleting substances to the atmosphere leads to the depletion of the Earth's ozone layer, which is manifested most prominently in the occurrence of the annual ozone hole over the Antarctic. The stratospheric ozone layer protects humans and the environment from harmful ultra-violet (UV) radiation emitted by the sun. Ozone is destroyed by chlorine and bromine atoms that are released in the stratosphere from man-made chemicals — including chlorofluorocarbons (CFCs), halons, 1,1,1 tricholoroethane (TCA), carbon tetrachloride (CTC), hydrobromofluorocarbons (HBFCs), bromochloromethane (BCM), n-propyl bromide and hydrochlorofluorocarbons (HCFCs); all anthropogenic chemicals — as well as methyl chloride (MC) and methyl bromide (MB). Depletion of stratospheric ozone leads to increases in ambient ultra-violet radiation at the surface, which has a wide variety of adverse effects on human health, aquatic and terrestrial ecosystems, and food chains. This indicator tracks the annual maximum Antarctic ozone hole area to determine the state of the ozone layer and its recovery since the late 1970s.

Since the mid 1980s, various policy measures have been introduced to limit or phase-out the production and consumption of ozone-depleting substances (ODS) in order to protect the stratospheric ozone layer from depletion. This indicator tracks progress towards these objectives of limiting or phasing-out consumption of ODS in the EEA-33. It also highlights the remaining uses of ODS, ranks their harmfulness to the ozone layer and tracks related trends since 2011.

Scientific references

- UNEP Synthesis report of the 2006 assessments of the Scientific Assessment Panel, the Environmental Effects Assessment Panel and the Technology and Economic Assessment Panel

- UNEP Scientific Assessment of Ozone Depletion: 2010
- UNEP Environmental Effects of Ozone Depletion and its Interactions with Climate Change: 2006 Assessment
- UNEP 2006 Report of the Technology and Economic Assessment Panel
- WMO GAW Research on Stratospheric Ozone
- UNEP Executive Summary of the Scientific Assessment of Ozone Depletion: 2010
- European Commission (DG Climate Action): Protection of the ozone layer

Policy context and targets

Context description

The 1987 United Nations Environment Programme Montreal Protocol is widely recognised as one of the most successful multilateral environmental agreements to date. Its implementation has led to a global decrease in the impact of ODS on the atmosphere. The agreement covers the phase-out of over 200 ODS including CFCs, halons, CTC, TCA, HCFCs, HBFCs, BCM and MB. The Montreal Protocol controls the consumption and production of these substances, not their emissions.

Following the Montreal Protocol and its subsequent amendments and adjustments, policy measures have been taken to limit or phase-out the production and consumption of ODS in order to protect the stratospheric ozone layer against depletion. This indicator tracks the progress of EU Member States towards this limiting or phasing-out of ODS consumption.

For the European Union, the ratification dates were the following:

Treaty	Date of Ratification
Vienna Convention	17 Oct 1988
Montreal Protocol	16 Dec 1988
London Amendment	20 Dec 1991
Copenhagen Amendment	20 Nov 1995
Montreal Amendment	17 Nov 2000
Beijing Amendment	25 Mar 2002

EEA member countries have made tremendous progress in reducing the consumption and production of ODS since the signing of the Montreal Protocol. In that time, ODS production fell from over half a million ODP tonnes to practically zero, not including production for exempted uses. Since 2009, EEA member countries have also been subject to the more stringent EU ODS Regulation (1005/2009/EC as amended by 744/2010/EU), which applies to additional substances and accelerates the phase-out of remaining ODS in the EU.

Targets

The international target under the ozone conventions and protocols is the complete phase-out of ODS, according to the schedule below.

Countries falling under Article 5, paragraph 1 of the Montreal Protocol are considered as developing countries under the protocol. Phase-out schedules for Article 5(1) countries are delayed by 10-20 years compared with non-article 5(1) countries.

Montreal protocol	EEA member countries
Article 5(1)	Turkey
Non-article 5(1)	All other EEA member countries

Summary of phase-out schedule for non-article 5(1) countries, including Beijing adjustments.

Group	Phase-out schedule for non-article 5(1) countries	Remark
Annex-A, group 1: CFCs (CFC-11, CFC-12, CFC-113, CFC-114, CFC-115)	Base level: 1986 100 % reduction by 01.01.1996 (with possible essential use exemptions)	Applicable to production and consumption
Annex A, group 2: Halons (halon 1211, halon 1301, halon 2402)	Base level: 1986 100 % reduction by 01.01.1994 (with possible essential use exemptions)	Applicable to production and consumption
Annex B, group 1: Other fully halogenated CFCs (CFC-13, CFC-111, CFC-112, CFC-211, CFC-212, CFC-213, CFC-214, CFC-215, CFC-216, CFC-217)	Base level: 1989 100 % reduction by 01.01.1996 (with possible essential use exemptions)	Applicable to production and consumption
Annex B, group 2: Carbontetrachloride (CCl4)	Base level: 1989 100 % reduction by 01.01.1996 (with possible essential use exemptions)	Applicable to production and consumption
Annex B, group 3: 1,1,1-trichloroethane (CH3CCl3) (=methyl chloroform)	Base level: 1989 100 % reduction by 01.01.1996 (with possible essential use exemptions)	Applicable to production and consumption
Annex C, group 1: HCFCs (Hydrochlorofluorocarbons)	Base level: 1989 HCFC consumption +2.8 % of 1989 CFC consumption Freeze: 1996 35 % reduction by 01.01.2004 65 % reduction by 01.01.2010 90 % reduction by 01.01.2015 99.5 % reduction by 01.01.2020, and thereafter consumption restricted to the servicing of refrigeration and air-conditioning equipment existing at that date. 100 % reduction by 01.01.2030	Applicable to consumption
Annex C, group 1: HCFCs		

(Hydrochlorofluorocarbons)	Base level: Average of 1989 HCFC production +2.8 % of 1989 CFC production and 1989 HCFC consumption +2.8 % of 1989 CFC consumption Freeze: 01.01.2004, at the base level for production	Applicable to production
Annex C, group 2: HBFCs (Hydrobromofluorocarbons)	Base level: year not specified. 100 % reduction by 01.01.1996 (with possible essential use exemptions)	Applicable to production and consumption
Annex C, group 3: Bromochloromethane (CH_2BrCl)	Base level: year not specified. 100 % reduction by 01.01.2002 (with possible essential use exemptions)	Applicable to production and consumption
Annex E, group 1: Methyl bromide (CH_3Br)	Base level: 1991 Freeze: 01.01.1995 25 % reduction by 01.01./1999 50 % reduction by 01.01.2001 75 % reduction by 01.01.2003 100 % reduction by 01.01.2005 (with possible essential use exemptions)	Applicable to production and consumption

Related policy documents

- Commission Regulation (EU) No 744/2010 amending Regulation (EC) No 1005/2009 on substances that deplete the ozone layer, with regard to the critical uses of halons
  Commission Regulation (EU) No 744/2010 of 18 August 2010 amending Regulation (EC) No 1005/2009 of the European Parliament and of the Council on substances that deplete the ozone layer, with regard to the critical uses of halons
- Regulation (EC) No 1005/2009 on substances that deplete the ozone layer
  Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer (Text with EEA relevance)
- Regulation (EC) No 2038/2000 amending Regulation (EC) No 2037/2000 on substances that deplete the ozone layer, as regards metered dose inhalers and medical drug pumps
  Regulation (EC) No 2038/2000 of the European Parliament and of the Council of 28 September 2000 amending Regulation (EC) No 2037/2000 on substances that deplete the ozone layer, as regards metered dose inhalers and medical drug pumps
- Regulation (EC) No 2039/2000 amending Regulation (EC) No 2037/2000 on substances that deplete the ozone layer, as regards the base year for the allocation of quotas of hydrochlorofluorocarbons
  Regulation (EC) No 2039/2000 of the European Parliament and of the Council of 28 September 2000 amending Regulation (EC) No 2037/2000 on substances that deplete the ozone layer, as regards the base year for the allocation of quotas of hydrochlorofluorocarbons
- The Montreal Protocol on Substances that Deplete the Ozone Layer
  The Vienna Convention for the Protection of the Ozone Layer: The Montreal Protocol on Substances that Deplete the Ozone Layer

Methodology

Methodology for indicator calculation

Maximum ozone hole area

This indicator presents the maximum ozone hole area in square kilometres. The ozone hole area is determined from total ozone satellite measurements. It is defined as that region of ozone values below 220 Dobson Units (DU) located south of 40 °S. The maximum ozone hole area is provided in square kilometres by the NASA Goddard Space Flight Center via the Ozone Hole Watch. It can be accessed online at: http://ozonewatch.gsfc.nasa.gov/meteorology/annual_data.html

Consumption of ozone depleting substances

The indicator presents ODS consumption in units of tonnes of ODS, which is the amount of ODS consumed, multiplied by their respective ozone depleting potential value. The UNEP — Ozone Secretariat data are already provided in ODP tonnes. All data can be downloaded from http://ozone.unep.org/Data_Access/

Formulae for the calculation of consumption are defined by Articles 1 and 3 of the Montreal Protocol and a summary can be accessed here: http://ozone.unep.org/Frequently_Asked_Questions/faqs_compliance.shtml

Simply put, consumption is defined as production plus imports minus exports. Amounts destroyed or used as feedstock are subtracted from production. Amounts of methyl bromide used for quarantine and pre-shipment applications are excluded. Exports to non-parties are included, but are not allowed.

Parties report each of the above components annually to the Ozone Secretariat in the official data reporting forms. The parties do not, however, make the above subtractions and other calculations themselves. The Ozone Secretariat performs this task itself.

Remaining uses of ozone depleting substances in EU Member States

This indicator presents reported sales of ODS on the European market and reported production in ODP tonnes (see above). These data are reported annually to the EEA by companies under the EU ODS Regulation (1005/2009/EC) and treated as confidential. Data represented here were reported by at least three company groups that each contributed at least 5 % to the total reported amount.

Methodology for gap filling

No gap filling takes place.

Methodology references

- Handbook for the International Treaties for the Protection of the Ozone Layer (Sixth edition, 2003) UNEP, 2003 (August 2015 specific URL: http://ozone.unep.org/pdfs/Handbook-2003.pdf)
- The Montreal Protocol on Substances that deplete the Ozone Layer The Montreal Protocol on Substances that Deplete the Ozone Layer as either adjusted and/or amended in London 1990, Copenhagen 1992, Vienna 1995, Montreal 1997, Beijing 1999. UNEP Ozone Secretariat United Nations Environment Programme (August 2015 specific URL: http://ozone.unep.org/pdfs/Montreal-Protocol2000.pdf)

Uncertainties

Methodology uncertainty

Policies focus on the production and consumption of ODS rather than emissions, which actually harm the ozone layer. The reason is that emissions from multiple small sources are much more difficult to monitor accurately than industrial production and consumption. Consumption is the driver for industrial production. Production and consumption can precede emissions by many years, as emissions typically take place after the disposal of products in which ODS are used (fire-extinguishers, refrigerators, etc.). The same is true for sales of ODS for certain uses and their actual use.

Data sets uncertainty

Data provided by the Ozone Secretariat and the EEA Ozone Database are based on reporting from companies producing, importing, exporting, using or destroying ODS. A number of rigorous quality checks ensure a high degree of completeness and correctness. The quality of the data ultimately remains the responsibility of each reporting company.

Omissions and double-counting are theoretically possible due to the nature of the reporting obligation under the ODS Regulation. It is estimated that such uncertainties constitute a negligible part of the data.

Rationale uncertainty

Policies focuses on the production and consumption of ODS rather than emissions. The reason is that emissions from multiple small sources are much more difficult to monitor accurately than industrial production and consumption. Consumption is the driver for industrial production. Production and consumption can precede emissions by many years, as emissions typically take place after disposal of products in which ODS are used (fire-extinguishers, refrigerators, etc.).

Data sources

- Ozone depleting substances data (UNEP - Ozone Secretariat)
  provided by **United Nations Environment Programme (UNEP)**
- Ozone-depleting substances 2015
  provided by **European Environment Agency (EEA)**
- Ozone hole watch
  provided by **NASA**

Generic metadata

Topics:

Climate change mitigation , Industry
DPSIR: Driving force
Typology: Performance indicator (Type B - Does it matter?)

Indicator codes

- CSI 006
- CLIM 049

1979-2017

Contacts and ownership

EEA Contact Info

Peder Gabrielsen

EEA Management Plan

2017 1.3.2 (note: EEA internal system)

Ownership

- European Environment Agency (EEA)

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