A-3: Consumption of ozone depleting substances (ODS)

1) General description

1.1) Brief definition

The indicator specifies the amount of ozone-depleting substances (ODS) consumed in a country, where the consumption is defined as production of ODS plus imports minus exports of ODS, and gives indication on the aggregated ozone-depleting potential (ODP) of the substances consumed.

1.2) Units of measurement

Tons of ODS multiplied by a substance‘s ODP value (resulting in ODP-weighted tons, or in short ODP-tons)

1.3) Context

Relation to other indicators from the Guidelines - This indicator does not relate to other indicators.

2) Relevance for environmental policy

2.1) Purpose

The indicator is a measure of the pressure on the environment through substances that deplete the ozone layer.

2.2) Issue

The ozone layer in the stratosphere is an essential component of the Earth’s atmosphere. It protects humans, animals and plants from damaging short wave ultraviolet (UV) radiation. Ozone is destroyed (dissociated) by reactions with certain ODS in the presence of UV radiation. Substances that cause significant ozone depletion include chlorofluorocarbons (CFCs), halons, carbon tetrachloride, 1,1,1-trichloroethane (methyl chloroform)

hydrochlorofluorocarbons (HCFCs), and methyl bromide. They are used as solvents, refrigerants, foam-blowing agents, degreasing agents, aerosol propellants, fire extinguishers (halons) and agricultural pesticides (methyl bromide). The amount of ozone depletion caused by a substance is refered to as Ozone depleting potential (ODP). The ODP is the ratio of the impact on ozone of a chemical substance compared to the impact of a similar mass of CFC-11. The ODP of CFC-11 is defined to be 1. For example, as the ODP value for Halon-1211 is 3.0, this means that the potential of 1 kilogram of Halon-1211 for depleting ozone is three times higher than that of 1 kilogram of CFC-11.
Additional to the impact of ODS on the ozone layer, certain ODS are potent greenhouse gases, which can contribute to accelerated climate change.

2.3) International agreements and targets

a) Global level:

The Vienna Convention for the Protection of the Ozone Layer (1985), its Montreal Protocol on Substances that Deplete the Ozone Layer (1987) and the London, Copenhagen, Montreal, Beijing and Montreal amendments to the Montreal Protocol. The Montreal Protocol targets at eliminating the production and use of ODS. The list of ODS is set forth in the Protocol and its amendments.

b) Subregional level:

On EU level, rules are laid down by the Regulation (EC) No 1005/2009 on substances that deplete the ozone layer. The Customs Union – Board decision EAEC from 16/08/2012 № 134 on normative legal acts in the field of non-tariff regulation.

3) Methodology and guidelines

3.1) Data collection and calculations

Data collection should cover substances in annexes A–C and E of the Montreal Protocol, whether existing alone or in a mixture. It should include the isomers of any ODS, except as specified in the relevant annex of the Montreal Protocol, but exclude any ODS or mixture which is in a manufactured product (e.g. a refrigerator or a fire extinguisher) other than a container used for the transport or storage of that substance (e.g. tanks installed on board ships or rail tank cars).
The consumption of a ODS is the sum of production plus imports minus exports of the respective substance measured in tons. The production refers to the amount of ODS produced, minus the amount destroyed and minus the amount entirely used as feedstock in the manufacture of other chemicals. The amount recycled and reused is not to be considered

as production. As with calculated production, the consumption of ODS can be negative, as exports in any one year can exceed production and imports if they include ODS from carry-over stocks.
The ODP-weighted consumption is calculated by multiplying the sum of the national annual consumption of a given substance (in tons) by its ODP value.

3.2) Internationally agreed methodologies and standards

The UNEP Ozone Secretariat has developed data reporting forms for reporting under the Montreal Protocol and pursuant to decisions on requests for data by the Meeting of the Parties. These forms cover data reporting on imports, exports, production, amounts destroyed and imports from and/or exports to non-Parties. The UNEP Ozone Secretariat Handbook for the Vienna Convention for the Protection of the Ozone Layer, the Handbook for the Montreal Protocol on Substances that deplete the Ozone Layer and the Handbook on Data Reporting under the Montreal Protocol assists the Parties in providing accurate, comprehensive and timely data.

4) Data sources and reporting

Data on production, imports and exports of ODS are generally collected annually by national statistical agencies and/or national focal points responsible for reporting under the Montreal Protocol. Countries of South-Eastern and Eastern Europe, Caucasus and Central Asia have national competent bodies responsible for reporting under the Montreal Protocol and submit national ODS data to the UNEP Ozone Secretariat.

5) References at the international level

- Vienna Convention on the Protection of the Ozone Layer;
- Montreal Protocol on Substances that Deplete the Ozone Layer and its amendments;
- UNEP Ozone Secretariat Handbook for the Vienna Convention for the Protection of the Ozone Layer, 9th edition (2012): http://ozone.unep.org/new_site/en/resources.php?pt_id=3;
- UNEP Ozone Secretariat Handbook for the Montreal Protocol on Substances that deplete the Ozone Layer, 9th edition (2012): http://ozone.unep.org/new_site/en/resources.php?pt_id=3;

- Ozone Secretariat, UNEP, Handbook for the International Treaties for the Protection of the Ozone Layer, 2003, (ISBN: 92-807-2316-2): http://ozone.unep.org/pdfs/Handbook-2003.pdf;
- Handbook on Data Reporting under the Montreal Protocol. UNEP and Multilateral Fund for the Implementation of the Montreal Protocol. United Nations, 1999 (ISBN 92-807-1735-9): http://ozone.unep.org/Data_Reporting/Data_Reporting_Tools/data-reporting-handbook.e.pdf;
- Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer;
- Website of the UNEP Ozone Secretariat: http://ozone.unep.org/new_site/en/index.php;
- Website of the European Commission – Protection of the ozone layer: http://ec.europa.eu/clima/policies/ozone/index_en.htm;
- Website of the European Environment Agency (EEA), Indicator „Production and consumption of ozone depleting substances“ (CSI 006): http://www.eea.europa.eu/data-and-maps/indicators/production-and-consumption-of-ozone/production-and-consumption-of-ozone-4.