

*Preliminary Draft amendments suggested by  
the EEB Contact Christian.Schaible@eeb.org*

## PROTOCOL ON POLLUTANT RELEASE AND TRANSFER REGISTERS

*The Parties to this Protocol,*

*Recalling* article 5, paragraph 9, and article 10, paragraph 2, of the 1998 Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (the Aarhus Convention),

*Recognizing* that pollutant release and transfer registers provide an important mechanism to increase corporate accountability, reduce pollution and promote sustainable development, as stated in the Lucca Declaration adopted at the first meeting of the Parties to the Aarhus Convention,

*Having regard to* principle 10 of the 1992 Rio Declaration on Environment and Development,

*Having regard also to* the principles and commitments agreed to at the 1992 United Nations Conference on Environment and Development, in particular the provisions in chapter 19 of Agenda 21,

*Taking note of* the Programme for the Further Implementation of Agenda 21, adopted by the General Assembly of the United Nations at its nineteenth special session, 1997, in which it called for, inter alia, enhanced national capacities and capabilities for information collection, processing and dissemination, to facilitate public access to information on global environmental issues through appropriate means,

*Having regard to* the Plan of Implementation of the 2002 World Summit on Sustainable Development, which encourages the development of coherent, integrated information on chemicals, such as through national pollutant release and transfer registers,

*Taking into account* the work of the Intergovernmental Forum on Chemical Safety, in particular the 2000 Bahia Declaration on Chemical Safety, the Priorities for Action Beyond 2000 and the Pollutant Release and Transfer Register/Emission Inventory Action Plan,

*Taking into account also* the activities undertaken within the framework of the Inter-Organization Programme for the Sound Management of Chemicals,

*Taking into account furthermore* the work of the Organisation for Economic Co-operation and Development, in particular its Council Recommendation on Implementing Pollutant Release and Transfer Registers, in which the Council calls upon member countries to establish and make publicly available national pollutant release and transfer registers,

*Wishing* to provide a mechanism contributing to the ability of every person of present and future generations to live in an environment adequate to his or her health and well-being, by ensuring the development of publicly accessible environmental information systems,

*Wishing also* to ensure that the development of such systems takes into account principles contributing to sustainable development such as the precautionary approach set forth in principle 15 of the 1992 Rio Declaration on Environment and Development,

*Recognizing* the link between adequate environmental information systems and the exercise of the rights contained in the Aarhus Convention,

*Noting* the need for cooperation with other international initiatives concerning pollutants and waste, including the 2001 Stockholm Convention on Persistent Organic Pollutants and the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal,

*Recognizing* that the objectives of an integrated approach to minimizing pollution and the amount of waste

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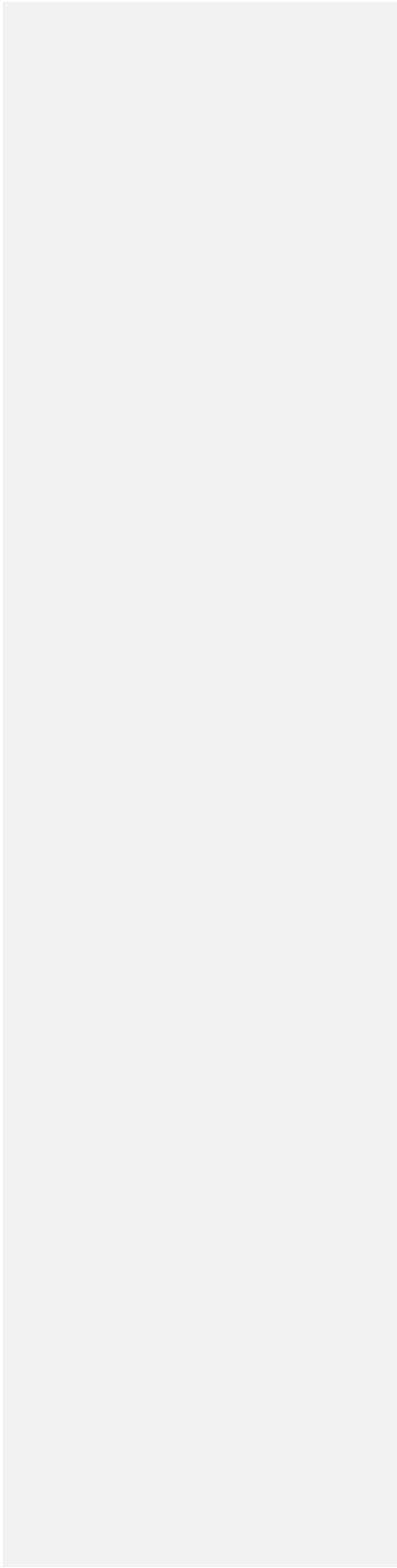
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resulting from the operation of industrial installations and other sources are to achieve a high level of



protection for the environment as a whole, to move towards sustainable and environmentally sound development and to protect the health of present and future generations,

*Convinced* of the value of pollutant release and transfer registers as a cost-effective tool for encouraging improvements in environmental performance, for providing public access to information on pollutants used, released into and transferred in and through communities, and for use by Governments in tracking trends, identifying further needs for or demonstrating progress in pollution prevention and reduction, monitoring compliance with certain international agreements or industrial benchmarks, setting priorities and evaluating progress achieved through environmental policies and programmes,

*Believing* that pollutant release and transfer registers can bring tangible benefits to industry through the improved management of their activities in order to achieve a high level of environmental and human health protection in accordance to the SDG goals,

*Noting* the opportunities for using data from pollutant release and transfer registers, combined with health, environmental, demographic, economic or other types of relevant information, for the purpose of gaining a better understanding of potential problems, identifying ‘hot spots’, taking preventive and mitigating measures, and setting environmental management priorities,

*Recognizing also* the importance of developing internationally compatible national pollutant release and transfer register systems to increase the comparability of data,

*Noting* that many member States of the United Nations Economic Commission for Europe, the European Union and the Parties to the North American Free Trade Agreement are acting to collect data on pollutant releases and transfers from various sources and to make these data publicly accessible, and recognizing especially in this area the long and valuable experience in certain countries,

*Taking into account* the different approaches in existing emission registers and the need to avoid duplication, and recognizing therefore that national systems should be designed to the extent for improved harmonizing and global reporting,

*Urging* the progressive development of national pollutant release and transfer registers,

*Urging also* the establishment of links between national pollutant release and transfer registers and information systems on other releases of public concern or databases addressing the state of the environment and impact of human activities,

*Have agreed* as follows:

### **Article 1**

#### **OBJECTIVE**

The objective of this Protocol is to enhance public access to information through the establishment of coherent, integrated, nationwide pollutant release and transfer registers (PRTRs) in accordance with the provisions of this Protocol, which could facilitate public participation in environmental decision-making as well as contribute to the prevention and reduction of pollution of the environment and improve the safeguarding of relevant environmental quality standards.

**Commented [CS2]:** This is the summary of the objective of the PRTR, the provisions need to address ALL these objective. For the moment it is only about information sharing on pollution loads

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*Recognizing* the importance of protecting the privacy of identified or identifiable natural persons in the processing of information reported to pollutant release and transfer registers in accordance with applicable international standards relating to data protection,¶

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## Article 2

### DEFINITIONS

For the purposes of this Protocol,

1. “Party” means, unless the text indicates otherwise, a State or a regional economic integration organization referred to in article 24 which has consented to be bound by this Protocol and for which the Protocol is in force;
2. “Convention” means the Convention on Access to Information, Public Participation in Decision- making and Access to Justice in Environmental Matters, done at Aarhus, Denmark, on 25 June 1998;
3. “The public” means one or more natural or legal persons, and, in accordance with national legislation or practice, their associations, organizations or groups;
4. “Facility” means one or more installations on the same site, or on adjoining sites, that are owned or operated by the same natural or legal person;
5. “Installation” means a stationary technical unit within which one or more activities listed in Annex I or in are carried out, and any other directly associated activities on the same site which have a technical connection with the activities listed in those Annexes and which could have an effect on emissions or pollution;
6. “products” means mixtures (e.g. chemicals in a container such as paint and glue as well as an article that may be manufactured by an industrial activity covered in Annex I or used outside the site of industrial activities manufacturing these);
7. “Article” means an object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition;
8. “Competent authority” means the national authority or authorities, or any other competent body or bodies, designated by a Party to manage a national pollutant release and transfer register system;
9. “Pollutant” means a substance or a group of substances, vibrations, heat or noise that may be harmful to human health or negatively affect the quality of the environment, result in damage to material property, or impair with amenities and other legitimate uses of the environment ;
10. “Release” means any direct or indirect introduction of pollutants, vibrations, heat or noise into the environment as a result of any human activity, whether deliberate or accidental, routine or non-routine, including spilling, emitting, discharging, injecting, disposing or dumping, or through sewer systems;
11. “Off-site transfer” means the movement beyond the boundaries of the facility of either pollutants or waste destined for disposal or recovery and of pollutants in waste water destined for waste-water treatment;
12. “Diffuse sources” means the many smaller or scattered sources, including products, from which pollutants may be released to land, air or water;
13. The terms “national” and “nationwide” shall, with respect to the obligations under the Protocol on Parties that are regional economic integration organizations, be construed as applying to the region in question unless otherwise indicated;
14. “Waste” means substances or objects which are:
  - (a) Disposed of or recovered;
  - (b) Intended to be disposed of or recovered; or
  - (c) Required by the provisions of national law to be disposed of or recovered;

**Commented [CS3]:** Need a robust definition and to cover both: tracking of the products use / release at the manufacturing sites e.g. consumption of chemicals/mixtures in processes as well as the release outside of the manufacturing sites e.g. consumer / agri use / other uses etc

**Commented [CS4]:** Not sure is this creating uncertainty as to point 6 on products? Comes from REACH but it would be useful to insert to establish legal link with the relevant EU instruments using the term “article”

**Commented [CS5]:** Adapted to the definition of pollution contained in the IED

**Deleted:** or to human health on account of its properties and of its introduction into the environment

**Commented [CS6]:** Slightly adapted to the definition of “emission” from the IED, the last addition “without final WWtreatment” creates legal uncertainties

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**Deleted:** without final waste-water treatment

**Commented [CS7]:** The last part is removed because it does not fit in a definition of diffuse sources

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15. "Hazardous waste" means waste that is defined as hazardous by the provisions of national law;
16. "Other waste" means waste that is not hazardous waste;
17. "Waste water" means used water containing substances or objects that is subject to regulation by national law.

17. "Environmental Quality Standard" means the set of requirements which must be fulfilled at a given time by a given environment or particular part thereof, as set out in relevant national law, regional law or policy objectives set within international conventions.

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### **Article 3**

#### **GENERAL PROVISIONS**

1. Each Party shall take the necessary legislative, regulatory and other measures, and appropriate enforcement measures, to implement the provisions of this Protocol.
2. The provisions of this Protocol shall not affect the right of a Party to maintain or introduce a more extensive or more publicly accessible pollutant release and transfer register than required by this Protocol.
3. Each Party shall take the necessary measures to require that employees of a facility and members of the public who report a violation by a facility of national laws implementing this Protocol to public authorities are not penalized, persecuted or harassed by that facility or public authorities for their actions in reporting the violation.
4. In the implementation of this Protocol, each Party shall be guided by the precautionary approach as set forth in principle 15 of the 1992 Rio Declaration on Environment and Development.
5. To reduce duplicative reporting, pollutant release and transfer register systems should be integrated to other existing information sources such as reporting mechanisms under licences or operating permits and enforcement activities.
6. Parties shall strive to achieve convergence among national pollutant release and transfer registers.

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### **Article 4**

#### **CORE ELEMENTS OF A POLLUTANT RELEASE AND TRANSFER REGISTER SYSTEM**

In accordance with this Protocol, each Party shall establish and maintain a publicly accessible national pollutant release and transfer register that:

- (a) Is facility-specific with respect to reporting on point sources;
- (b) Accommodates reporting on diffuse sources, including from products;
- (c) Is sector-specific, pollutant-specific or waste-specific, as appropriate;
- (d) Is multimedia, distinguishing among releases to air, land and water or through product use;
- (e) Includes information on transfers;
- (f) Is based on mandatory reporting on a periodic basis;
- (g) Includes standardized and timely data, limited provisions, if any, for confidentiality without prejudice to the minimal requirements set out in this Protocol;
- (h) Is coherent and designed to be user-friendly and publicly accessible, including in electronic form;
- (i) Allows for public participation in its development and modification; and
- (j) Is a structured, computerized database or several linked databases maintained by the competent authority.

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**Article 5**

**DESIGN AND STRUCTURE**

1. Each Party shall ensure that the data collection and dissemination system referred to in article 4 is properly designed and presented in both aggregated and non-aggregated forms, so that releases and transfers can be searched and identified according to:

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(a) Installation and its geographical location (street address, coordinates);

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(b) Activity, by using the full list of the International Standard Industrial Classification (ISIC) codes;

(c) Name of owner, operator, company and mother companies, where relevant;

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(d) Pollutant or waste, with hazard classifications as applicable;

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(e) Information of the use of the pollutant, product or resource use type / amount and, environmental media into which the pollutant is released or otherwise affected media; and

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(f) As specified in article 7, paragraph 5, the destination of the transfer and, where applicable, the disposal or recovery operation for waste.

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(g) Regulatory status and pollution prevention control (source measures) applied.

The minimal type of information to be included and format for dissemination in the register at installation and activity level is specified in Annex XX [5]

2. Each Party shall also ensure that the data can be searched and identified according to detailed search filters for at least each of the elements listed under article 5, paragraph 1.

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3. Each Party shall design its register taking into account the possibility of its future expansion and ensuring that the reporting data from at least the ten previous reporting years are publicly accessible.

4. The register shall be designed for maximum ease of public access through electronic means, such as the Internet. The design shall allow that, under normal operating conditions:

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- the information on the register is continuously and immediately available through electronic means;

- is downloadable through electronic datasets;

- promotes information sharing and integration within other global PRTR portals in order to enable comparability.

- the emissions monitoring data generated by automatized monitoring systems (AMS), the full raw monitoring data (daily averages) can be made available in electronic format on a daily and no later within [30 days] basis.

5. Each Party should provide links in its register to its relevant existing, publicly accessible databases on subject matters related to environmental protection and in particular the achievement of environmental quality standards. This should cover, in particular, the following set of subject matters:

**Deleted:** - For any emissions monitoring data that is generated by automatized monitoring systems (AMS), the full raw monitoring data (daily averages) shall be made available in electronic format on a daily basis and no later than [30 days].¶  
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- Air quality

- Soil quality and biodiversity restoration

- Water quality

- Resource efficiency and circular economy

- Accidents prevention

- Pollution prevention and control (source measures), including substitution of substances of concern

- Other measures taken to achieve the Sustainable Development Goals pursuant to point (e) of article 6.

6. Each Party shall design its system in such a way that information gathered can be used for global benchmarking and compliance assessment purposes of the activities covered by this protocol. where feasible,

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**Article 6**

**SCOPE OF THE REGISTER**

1. Each Party shall ensure that its register includes the information on:

- (a) Releases of pollutants required to be reported under article 7, paragraph 2;
- (b) Off-site transfers required to be reported under article 7, paragraph 2; and

~~(c) Releases of pollutants from diffuse sources and products required under article 7, paragraph 4 and in accordance to Annex [VI].~~

~~(d) Minimal information items to be disseminated as provided for under Annex [V]~~

~~(e) Information allowing the public to track progress of the Parties to achieving the Sustainable Development Goals, as provided for under Annex [VII]~~

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2. Having assessed the experience gained from the development of national pollutant release and transfer registers and the implementation of this Protocol, and taking into account relevant international processes, the Meeting of the Parties shall review the reporting requirements under this Protocol at the latest by [ 5 years after entry into force] and shall consider the following issues in its further development:

- (a) Extension of the activities specified in annex I;

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(b) ~~Addition of further~~ pollutants specified in annex II ~~in particular emerging pollutants or environmental and human health issues~~;

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(c) ~~Revision of the product groups identified in part A of Annex [VI]~~

(d) Revision of the thresholds ~~or default emission factors~~ in annexes I and II ~~and [VI]~~; and

(e) Inclusion of other relevant aspects such as information on on-site transfers, storage, the specification of reporting requirements for ~~other~~ diffuse sources or the development of criteria for including ~~further items under this Protocol, improved IT-access and user friendliness of the register for various stakeholder groups and improved comparability of information at global level to further promote the achievement of the objectives referred to under article 1.~~

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3. ~~The provisions referred to article 13 shall apply mutadis mutandis to that review.~~

### **Article 7**

#### **REPORTING REQUIREMENTS**

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1. Each Party shall either:

(a) Require the owner or the operator of each individual ~~installation~~ within its jurisdiction that undertakes one or more of the activities specified in annex I, ~~specified in annex I, column 1, and:~~

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(i) Releases any pollutant specified in annex II;

**Deleted:** in quantities exceeding the applicable thresholds specified in annex II, column 1

(ii) Transfers off-site any pollutant specified in annex II, where the Party has opted for pollutant-specific reporting of transfers pursuant to paragraph 5 (d);

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(iii) Transfers off-site hazardous waste, where the Party has opted for waste-specific reporting of transfers pursuant to paragraph 5 (d); or

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(iv) Transfers off-site any pollutant specified in annex II in waste water destined for waste-water treatment;

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to undertake the obligation imposed on that owner or operator pursuant to paragraph 2; or

(b) Require the owner or the operator of each individual ~~installation~~ within its jurisdiction that undertakes one or more of the activities specified in annex I at or above the employee threshold specified in annex I, column 2, and manufactures, processes or uses any pollutant ~~or products~~ specified in annex II, to undertake the obligation imposed on that owner or operator pursuant to paragraph 2.

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**Deleted:** in quantities exceeding the applicable threshold specified in annex II, column 3

2. Each Party shall require the owner or operator of a ~~installation~~ referred to in paragraph 1 to submit the information specified in ~~article 5 and article 7~~ paragraphs 5 and 6, and in accordance with the requirements therein, with respect to those pollutants, ~~products~~ and wastes ~~within the shortest possible timeframes.~~

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3. In order to achieve the objective of this Protocol, a Party ~~should report on the release, manufacture, process or use~~ ~~information~~, provided that this increases the relevant information on releases or transfers available in its register.

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4. Each Party shall ensure that its competent authority collects, or shall designate one or more public authorities or competent bodies to collect, the information on releases of pollutants from diffuse sources ~~and products~~ specified in paragraphs 7 and 8, for inclusion in its register.

5. Each Party shall require the owners or operators of the ~~installation~~ required to report under paragraph 2 to complete and submit to its competent authority, the following information on a ~~installation~~ specific basis:

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(a) The name, street address, geographical location and the activity or activities of the reporting

| installation, and the name of the owner or operator, and, as appropriate, company;

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(b) The name and numerical identifier of each pollutant or product group category required to be reported pursuant to paragraph 2;

(c) The amount of each pollutant required to be reported pursuant to paragraph 2 released from the installation or product to the environment in the reporting year, both in aggregate and according to whether the release is to air, to water or to land, including by underground injection;

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(i) The amount of each pollutant required to be reported pursuant to paragraph 2 that is transferred off-site in the reporting year, distinguishing between the amounts transferred for disposal and for recovery, and the name, address, type and recycling efficiency of management of waste of the installation receiving the transfer; and

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(ii) The amount of waste received by waste management installations or other installations as well as transferred off-site in the reporting year, distinguishing between hazardous waste and other waste with hazard classification codes and other information on pollutants content, for any operations of recovery or disposal, indicating respectively with 'R' or 'D' for each waste flow in accordance to relevant waste classification codes whether the waste is destined for recovery or disposal pursuant to annex III and, for transboundary movements of hazardous waste, the name, address, hazard classification codes and type and recycling efficiency of management of waste of the recoverer or disposer of the waste and the actual recovery or disposal site receiving the transfer;

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(d) The amount of each pollutant in waste water required to be reported pursuant to paragraph 2 transferred off-site in the reporting year; and

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(e) The type of methodology used to derive the information referred to in subparagraphs (c) to (e), according to article 9, paragraph 2, indicating whether the information is based on measurement, calculation or estimation.

6. The information referred to in paragraph 5 (c) to (e) shall include information on releases and transfers resulting from routine activities and from extraordinary events.

7. Each Party shall present on its register, in an adequate spatial disaggregation, the information on releases of pollutants from diffuse sources and products listed in part A and B of Annex [VI], The product category list is considered as a minimal list and shall be updated every [5] years.

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An expert group, comprised by an equal number of representatives from public servants from Parties to this Protocol, NGO promoting environmental protection, NGO promoting consumer interests, trade unions and industry shall establish the minimal list of pollutants and product groups to consider, release estimation methodology, format of the information to be disseminated whilst ensuring that the release estimation methods and type of information gathered can be streamlined with other databases on chemical management at a global level.

a) The release emission techniques and factors set out in section 1 of part B of Annex VI shall apply to the product groups specified in part A of that Annex as from [1 year after entry into force];

b) the expert group shall agree on the release emission techniques and factors to be used for the pollutants and product groups set out in Section 2 of Annex VI. That agreement shall be based on a qualified majority between the various five interest group categories pre-cited.

c) If the expert group cannot obtain a qualified majority pursuant to point (b) within [insert 2 years after entry into force], the default release estimation factors and minimal pollutants list as specified in part B section 2 of Annex VI shall apply for the reporting purposes under this Protocol for the set product groups [by 3 years after entry into force].

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Deleted: take measures to initiate reporting on releases of relevant pollutants from one or more diffuse sources in accordance with its national priorities.

8. The information referred to in paragraph 7 shall include information on the type of methodology used to derive the information and whether the information is based on calculated or measured data.

## Article 8

### REPORTING CYCLE

1. Each Party shall ensure that the information required to be incorporated in its register is publicly available, compiled and presented on the register by calendar year. The reporting year is the calendar year to which that information relates. For each Party, the first reporting year is the calendar year after the Protocol enters into force for that Party. The reporting required under article 7 shall be annual.

2. Each Party that is not a regional economic integration organization shall ensure that the information is incorporated into its register within 1 month from the end of each reporting year unless if the data is generated by automotive monitoring systems (AMS) for which the dissemination deadline should not exceed one month following the measurement date.

3. Each Party that is a regional economic integration organization shall ensure that the information for a particular reporting year is incorporated into its register three months after the Parties that are not regional economic integration organizations are required to do so.

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## Article 9

### DATA COLLECTION AND RECORD- KEEPING

1. Each Party shall require the owners or operators of the facilities subject to the reporting requirements of article 7 to collect the data needed to determine, in accordance with paragraph 2 below and with appropriate frequency, the facility's releases and off-site transfers subject to reporting under article 7 and to keep available for the competent authorities the records of the data from which the reported information was derived for a period of five years, starting from the end of the reporting year concerned. These records shall also describe the methodology used for data gathering. Where the monitoring of releases is generated through automotive monitoring systems (AMS) that data should be reported on real time to the relevant centralized country register or regional register where this concerns several constituencies of various parties. In case of periodic measurements, the information shall be disseminated within 1 week after obtaining the results of the monitoring campaign by the accredited monitoring body.

**Commented [CS9]:** For the EU this should be able to be uploaded to ONE centralized register at EU level. (please reformulate to make this clear). It is a nightmare for citizens to have to look in various registers at local or county level. There should be at least a country level (federal) register centralizing the access.

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2. Each Party shall require the owners or operators of the installation subject to reporting under article 7 to use the best available information, which shall include monitoring data for any pollutant subject to an emission limit. Emission factors, mass balance equations, indirect monitoring or other calculations, engineering judgments and other methods could be used when these are scientifically equally robust. Monitoring shall be carried out in accordance to internationally approved methodologies and standards, with indication about subtraction of any confidence interval or monitoring uncertainty and indication of last calibrations of the monitoring devices.

## Article 10

### QUALITY ASSESSMENT

1. Each Party shall require the owners or operators of the facilities subject to the reporting requirements of article 7, paragraph 1, to assure the quality of the information that they report.

2. Each Party shall ensure that the data contained in its register are subject to quality assessment by the competent authority, in particular as to their completeness, consistency and credibility, taking into account any guidelines that may be developed by the Meeting of the Parties.

## Article 11

### PUBLIC ACCESS TO INFORMATION

1. Each Party shall ensure public access to information contained in its pollutant release and transfer register, without an interest having to be stated, and according to the provisions of this Protocol, primarily by ensuring that its register provides for direct electronic access through public telecommunications networks.

2. Where the information contained in its register is not easily publicly accessible by direct electronic means, each Party shall ensure that its competent authority upon request provides that information by any other effective means, as soon as possible and at the latest within one month after the request has been submitted.

3. Subject to paragraph 4, each Party shall ensure that access to information contained in its register is free of charge, complete, up to date and where possible, communicated in real time.

4. Each Party may allow its competent authority to make a charge for reproducing and mailing other specific information not listed in Annex V to this protocol, unless this concerns further information not available in electronic format. referred to in paragraph 2, but such charge shall not exceed a reasonable amount.

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5. Where the information contained in its register is not easily publicly accessible by direct electronic means, each Party shall facilitate electronic access to its register in publicly accessible locations, for example in public libraries, offices of local authorities or other appropriate places.

## **Article 12**

### **CONFIDENTIALITY**

1. Each Party may authorize the competent authority to keep information held on the register confidential where public disclosure of that information would adversely affect:

(a) International relations, national defence or public security;

(b) The course of justice, the ability of a person to receive a fair trial or the ability of a public authority to conduct an enquiry of a criminal or disciplinary nature, unless the judicial proceeding concerns an alleged breach of permit conditions;

(c) The confidentiality of commercial and industrial information, where such confidentiality is protected by law in order to protect a legitimate economic interest;

(d) Intellectual property rights; or

(e) The confidentiality of personal data and/or files relating to a natural person if that person has not consented to the disclosure of the information to the public, where such confidentiality is provided for in national law.

The aforementioned grounds for confidentiality shall be interpreted in a restrictive way, taking into account the public interest served by disclosure and whether the information relates to releases into the environment. Any information relating to releases into the environment such as listed in Annex V is deemed to be non-confidential for which an overriding interest for disclosure exists.

2. Within the framework of paragraph 1 (b), (c) and (d), any information on releases which is relevant for the protection of the environment or is listed in Annex V shall be subject to disclosure,

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3. Whenever information is kept confidential according to paragraph 1, the register shall indicate what type of information has been withheld, through, for example, providing generic chemical information if possible, and for what reason it has been withheld.

## **Article 13**

### **PUBLIC PARTICIPATION IN THE DEVELOPMENT OF NATIONAL POLLUTANT RELEASE AND TRANSFER REGISTERS**

1. Each Party shall ensure appropriate opportunities for early and effective public participation in the development of its national pollutant release and transfer register or any subsequent changes to design or structure or content, within the framework of its national law.

2. For the purpose of paragraph 1, each Party shall provide the opportunity for free public access to the information on the proposed measures concerning the development of its national pollutant release and transfer register and for the submission of any comments, information, analyses or opinions that are relevant to the decision-making process, and the relevant authority shall take due account of such public input.

3. Each Party shall ensure that, when a decision to establish or change its register has been taken, information on the decision and the considerations on which it is based are made publicly available in a timely manner and subject to pre-consultation with a 2 months minimal time period with focal points of NGOs representing environmental citizens.

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#### **Article 14**

##### **ACCESS TO JUSTICE**

1. Each Party shall, within the framework of its national legislation, ensure that any person who considers that his or her [right to participation under article 13, paragraph 1, or](#) request for information under article 11, paragraph 2, has been ignored, wrongfully refused, whether in part or in full, inadequately answered, or otherwise not dealt with in accordance with the provisions of that paragraph has access to a review procedure before a court of law or another independent and impartial body established by law.
2. The requirements in paragraph 1 are without prejudice to the respective rights and obligations of Parties under existing treaties applicable between them dealing with the subject matter of this article.

#### **Article 15**

##### **CAPACITY- BUILDING**

1. Each Party shall promote public awareness of its pollutant release and transfer register, and shall ensure that assistance and guidance are provided in accessing its register and in understanding and using the information contained in it.
2. Each Party should provide adequate capacity-building for and guidance to the responsible authorities and bodies to assist them in carrying out their duties under this Protocol.

#### **Article 16**

##### **INTERNATIONAL COOPERATION**

1. The Parties shall, as appropriate, cooperate and assist each other:
  - (a) In international actions in support of the objectives of this Protocol;
  - (b) On the basis of mutual agreement between the Parties concerned, in implementing national systems in pursuance of this Protocol;
  - (c) In sharing information under this Protocol on releases and transfers within border areas; and
  - (d) In sharing information under this Protocol concerning transfers among Parties.
2. The Parties shall encourage cooperation among each other and with relevant international organizations, as appropriate, to promote:
  - (a) Public awareness at the international level;
  - (b) The transfer of technology [and best practice on pollution prevention measures at source](#); and
  - (c) The provision of technical assistance to Parties that are developing countries and Parties with economies in transition in matters relating to this Protocol.

#### **Article 17**

##### **MEETING OF THE PARTIES**

1. A Meeting of the Parties is hereby established. Its first session shall be convened no later than two years after the entry into force of this Protocol. Thereafter, ordinary sessions of the Meeting of the Parties

shall be held sequentially with or parallel to ordinary meetings of the Parties to the Convention, unless otherwise decided by the Parties to this Protocol. The Meeting of the Parties shall hold an extraordinary session if it so decides in the course of an ordinary session or at the written request of any Party provided that, within six months of it being communicated by the Executive Secretary of the Economic Commission for Europe to all Parties, the said request is supported by at least one third of these Parties.

2. The Meeting of the Parties shall keep under continuous review the implementation and development of this Protocol on the basis of regular reporting by the Parties and, with this purpose in mind, shall:

(a) Review the development of pollutant release and transfer registers, and promote their progressive strengthening and convergence;

(b) Establish guidelines facilitating reporting by the Parties to it, bearing in mind the need to avoid duplication of effort in this regard;

(c) Establish a programme of work;

(d) Consider and, where appropriate, adopt measures to strengthen international cooperation in accordance with article 16;

(e) Establish such subsidiary bodies as it deems necessary;

(f) Consider and adopt proposals for such amendments to this Protocol and its annexes as are deemed necessary for the purposes of this Protocol, in accordance with the provisions of article 20;

(g) At its first session, consider and by consensus adopt rules of procedure for its sessions and those of its subsidiary bodies, taking into account any rules of procedure adopted by the Meeting of the Parties to the Convention;

(h) Consider establishing financial arrangements by consensus and technical assistance mechanisms to facilitate the implementation of this Protocol;

(i) Seek, where appropriate, the services of other relevant international bodies in the achievement of the objectives of this Protocol; and

(j) Consider and take any additional action that may be required to further the objectives of this Protocol, such as the adoption of guidelines and recommendations which promote its implementation.

3. The Meeting of the Parties shall facilitate the exchange of information on the experience gained in reporting transfers using the pollutant-specific and waste-specific approaches, and shall review that experience in order to investigate the possibility of convergence between the two approaches, taking into account the public interest in information in accordance with article 1 and the overall effectiveness of national pollutant release and transfer registers.

4. The United Nations, its specialized agencies and the International Atomic Energy Agency, as well as any State or regional economic integration organization entitled under article 24 to sign this Protocol but which is not a Party to it, and any intergovernmental organization qualified in the fields to which the Protocol relates, shall be entitled to participate as observers in the sessions of the Meeting of the Parties. Their admission and participation shall be subject to the rules of procedure adopted by the Meeting of the Parties.

5. Any non-governmental organization qualified in the fields to which this Protocol relates which has informed the Executive Secretary of the Economic Commission for Europe of its wish to be represented at a session of the Meeting of the Parties shall be entitled to participate as an observer unless one third of the Parties present at the session raise objections. Their admission and participation shall be subject to the rules of procedure adopted by the Meeting of the Parties.



**Article 18**

**RIGHT TO VOTE**

1. Except as provided for in paragraph 2, each Party to this Protocol shall have one vote.
2. Regional economic integration organizations, in matters within their competence, shall exercise their right to vote with a number of votes equal to the number of their member States which are Parties. Such organizations shall not exercise their right to vote if their member States exercise theirs, and vice versa.

**Article 19**

**ANNEXES**

Annexes to this Protocol shall form an integral part thereof and, unless expressly provided otherwise, a reference to this Protocol constitutes at the same time a reference to any annexes thereto.

**Article 20**

**AMENDMENTS**

1. Any Party may propose amendments to this Protocol.
2. Proposals for amendments to this Protocol shall be considered at a session of the Meeting of the Parties.
3. Any proposed amendment to this Protocol shall be submitted in writing to the secretariat, which shall communicate it at least six months before the session at which it is proposed for adoption to all Parties, to other States and regional economic integration organizations that have consented to be bound by the Protocol and for which it has not yet entered into force and to Signatories.
4. The Parties shall make every effort to reach agreement on any proposed amendment to this Protocol by consensus. If all efforts at consensus have been exhausted, and no agreement reached, the amendment shall as a last resort be adopted by a three-fourths majority vote of the Parties present and voting at the session.
5. For the purposes of this article, "Parties present and voting" means Parties present and casting an affirmative or negative vote.
6. Any amendment to this Protocol adopted in accordance with paragraph 4 shall be communicated by the secretariat to the Depositary, who shall circulate it to all Parties, to other States and regional economic integration organizations that have consented to be bound by the Protocol and for which it has not yet entered into force and to Signatories.
7. An amendment, other than one to an annex, shall enter into force for those Parties having ratified, accepted or approved it on the ninetieth day after the date of receipt by the Depositary of the instruments of ratification, acceptance or approval by at least three fourths of those which were Parties at the time of its adoption. Thereafter it shall enter into force for any other Party on the ninetieth day after that Party deposits its instrument of ratification, acceptance or approval of the amendment.
8. In the case of an amendment to an annex, a Party that does not accept such an amendment shall so notify the Depositary in writing within twelve months from the date of its circulation by the Depositary. The Depositary shall without delay inform all Parties of any such notification received. A Party may at any time withdraw a notification of non-acceptance, whereupon the amendment to an annex shall enter into force for that Party.

9. On the expiry of twelve months from the date of its circulation by the Depositary as provided for in paragraph 6, an amendment to an annex shall enter into force for those Parties which have not submitted a notification to the Depositary in accordance with paragraph 8, provided that, at that time, not more than one third of those which were Parties at the time of the adoption of the amendment have submitted such a notification.

10. If an amendment to an annex is directly related to an amendment to this Protocol, it shall not enter into force until such time as the amendment to this Protocol enters into force.

#### **Article 21**

##### **SECRETARIAT**

The Executive Secretary of the Economic Commission for Europe shall carry out the following secretariat functions for this Protocol:

- (a) The preparation and servicing of the sessions of the Meeting of the Parties;
- (b) The transmission to the Parties of reports and other information received in accordance with the provisions of this Protocol;
- (c) The reporting to the Meeting of the Parties on the activities of the secretariat; and
- (d) Such other functions as may be determined by the Meeting of the Parties on the basis of available resources.

#### **Article 22**

##### **REVIEW OF COMPLIANCE**

At its first session, the Meeting of the Parties shall by consensus establish cooperative procedures and institutional arrangements of a non-judicial, non-adversarial and consultative nature to assess and promote compliance with the provisions of this Protocol and to address cases of non-compliance. In establishing these procedures and arrangements, the Meeting of the Parties shall consider, *inter alia*, whether to allow for information to be received from members of the public on matters related to this Protocol.

#### **Article 23**

##### **SETTLEMENT OF DISPUTES**

1. If a dispute arises between two or more Parties about the interpretation or application of this Protocol, they shall seek a solution by negotiation or by any other peaceful means of dispute settlement acceptable to the parties to the dispute.

2. When signing, ratifying, accepting, approving or acceding to this Protocol, or at any time thereafter, a State may declare in writing to the Depositary that, for a dispute not resolved in accordance with paragraph 1, it accepts one or both of the following means of dispute settlement as compulsory in relation to any Party accepting the same obligation:

- (a) Submission of the dispute to the International Court of Justice;
- (b) Arbitration in accordance with the procedure set out in annex IV.

A regional economic integration organization may make a declaration with like effect in relation to arbitration in accordance with the procedures referred to in subparagraph (b).

3. If the parties to the dispute have accepted both means of dispute settlement referred to in paragraph 2, the dispute may be submitted only to the International Court of Justice, unless the parties to the dispute agree otherwise.

#### **Article 24**

##### **SIGNATURE**

This Protocol shall be open for signature at Kiev (Ukraine) from 21 to 23 May 2003 on the occasion of the fifth Ministerial Conference “Environment for Europe,” and thereafter at United Nations Headquarters in New York until 31 December 2003, by all States which are members of the United Nations and by regional economic integration organizations constituted by sovereign States members of the United Nations to which their member States have transferred competence over matters governed by this Protocol, including the competence to enter into treaties in respect of these matters.

#### **Article 25**

##### **DEPOSITARY**

The Secretary-General of the United Nations shall act as the Depositary of this Protocol.

Commented [CS10]: To update

#### **Article 26**

##### **RATIFICATION, ACCEPTANCE, APPROVAL AND ACCESSION**

1. This Protocol shall be subject to ratification, acceptance or approval by signatory States and regional economic integration organizations referred to in article 24.

2. This Protocol shall be open for accession as from 1 January 2004 by the States and regional economic integration organizations referred to in article 24.

3. Any regional economic integration organization referred to in article 24 which becomes a Party without any of its member States being a Party shall be bound by all the obligations under this Protocol. If one or more member States of such an organization is a Party, the organization and its member States shall decide on their respective responsibilities for the performance of their obligations under this Protocol. In such cases, the organization and the member States shall not be entitled to exercise rights under this Protocol concurrently.

4. In their instruments of ratification, acceptance, approval or accession, the regional economic integration organizations referred to in article 24 shall declare the extent of their competence with respect to the matters governed by this Protocol. These organizations shall also inform the Depositary of any substantial modifications to the extent of their competence.

Commented [CS11]: To update

#### **Article 27**

##### **ENTRY INTO FORCE**

1. This Protocol shall enter into force on the ninetieth day after the date of deposit of the sixteenth instrument of ratification, acceptance, approval or accession.

2. For the purposes of paragraph 1, any instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by the States members of such an organization.

3. For each State or regional economic integration organization which ratifies, accepts or approves this Protocol or accedes thereto after the deposit of the sixteenth instrument of ratification, acceptance, approval or accession, the Protocol shall enter into force on the ninetieth day after the date of deposit by such State or organization of its instrument of ratification, acceptance, approval or accession.

#### **Article 28**

#### **RESERVATIONS**

No reservations may be made to this Protocol.

#### **Article 29**

#### **WITHDRAWAL**

At any time after three years from the date on which this Protocol has come into force with respect to a Party, that Party may withdraw from the Protocol by giving written notification to the Depositary. Any such withdrawal shall take effect on the ninetieth day after the date of its receipt by the Depositary.

#### **Article 30**

#### **AUTHENTIC TEXTS**

The original of this Protocol, of which the English, French and Russian texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

IN WITNESS WHEREOF the undersigned, being duly authorized thereto, have signed this Protocol.

DONE at Kiev, this twenty-first day of May, two thousand and three.

Commented [CS12]: To update

#### **ANNEX XX [5]**

#### **Minimal list of type of information and format to be reported at installation and activity level**

##### **A: permitting and compliance related documents**

- 1. Environmental Impact Assessment reports;**
- 2. Inspection reports, in electronic format;**
- 3. Annual compliance reports (permit conditions and information allowing to assess compliance with those permit conditions), in electronic format covering all life cycle impacts of the industrial activity;**
- 4. Operating permit in force (consolidated version), in electronic format, with possibility to automatically extract and sort within the register the emission limits applied and comparison with average level of emission limits applied for similar activity in the same country;**
- 5. Decision making status concerning the industrial activity including the date of the latest permit review, upcoming permit reviews and contact information of competent authority with at least email address.**

**B: Environmental performance information**

- 6. Flow rates for air emissions (flue gas volume expressed in Nm<sup>3</sup>/year) and flow rates to water discharge (m<sup>3</sup>/year)**
- 7. Concentration values of pollutants released (expressed in mg/Nm<sup>3</sup> or µg/Nm<sup>3</sup>) and in absolute loads per production volumes, comparison with country wide average for same sector activity;**
- 8. Quantities of materials, chemicals, resources including fuels manufactured, produced and used at the installation or facility;**
- 9. Quantities of chemicals incorporated into products;**
- 10. Water consumption (per type of water: collected rainwater, surface water, groundwater, seawater, other water)**
- 11. Amount of waste / residues generated and waste management details (e.g. recycling efficiencies), listed with relevant hazard classification codes**
- 12. Production volumes (outputs). For energy the information should be at least differentiated by type of fuel input and output basis (renewable/non renewable);**
- 13. Information on pollution prevention techniques and source reduction measures, with possible search filters according to types of various Best Available Techniques / Best Environmental Practices as well as abatement efficiencies achieved;**
- 14. Where available, information on state of soil and site in regards to presence of any pollutants and remediation actions taken;**
- 15. Information on liability provisions applied, in particular for high risk activities;**
- 16. Other contextual information about industry performance;**
- 17. Possibility for freeform text submissions by the operators (e.g. explanations of change in performance information, investments or research made in pollution prevention, specific SDG goals reporting).**

**Annex XXX [6]**

**Product release list and default emission factors**

**PART A : product group and priority pollutants to target**

<b><u>Column A</u></b> <b><u>Product group</u></b>	<b><u>Priority pollutant to target</u></b>	<b><u>Possible affected Environmental compartment</u></b>	<b><u>Existing Default Release Estimation Factor to apply (in accordance to part B)</u></b>
<b><u>Biocides</u></b>			
<u>Antifouling paints</u>	<u>Cu</u>	<u>Soil, water</u>	<u>Cu</u>
<u>Fungicides, herbicides, algaecides</u>	<u>Cu</u>	<u>Soil</u>	<u>Cu, HCB</u>
<u>Pesticides</u>	<u>Chemicals and remains as impurities in pesticides: HCB, HCBd, NP/NPE (DDT) (permethrin)</u>	<u>Soil</u>	<u>HCB, Cu, NP/NPE</u>
<b><u>Building and construction</u></b>			
<u>Adhesives</u>	<u>NPE, PCB</u>	<u>Water</u>	<u>NPE, PCB</u>

<u>Backfill material when lead to soil</u>	<u>SCCP</u>	<u>Soil</u>	<u>-</u>
<u>Cleaning agents (when lead to soil)</u>	<u>NPE</u>	<u>Soil</u>	<u>NPE</u>
<u>Colouring agents and paint</u>	<u>NPEs, SCCPs, Cr, Pb,</u> <u>antifouling: Cr, TBT</u>	<u>Water, air</u>	<u>NPEs, SCCPs, Cr, Pb, TBT</u>
<u>Concrete constructions</u>	<u>NP/NPE, MCCP, PCB</u>	<u>Water</u>	<u>NP/NPE, MCCP</u>
<u>Floor and wall covering (plastic)</u>	<u>NP/NPE, PCB, Pb, phtalates</u>	<u>Water</u>	<u>NP/NPE</u>
<u>Insulating material</u>	<u>BFR</u>	<u>Air, water</u>	<u>BFR</u>
<u>Jointing compounds if lead to soil</u>	<u>phtalates, PAH, BFR</u>	<u>Soil, water, air</u>	<u>BFR</u>
<u>Roofing, flashings, pipes</u>	<u>Pb, Cr, Ni, Cu</u>	<u>Soil, water</u>	<u>Pb, Cu</u>
<u>Sealants, fillers when lead to soil</u>	<u>PCB, MCCP, PCN</u>	<u>Soil</u>	<u>MCCP, PCB</u>
<u>Surface coating, paints</u>	<u>PCB, SCCP</u>	<u>Soil, water</u>	<u>PCB, SCCP</u>
<u>Wood preservatives and impregnation agents</u>	<u>PAH, Cr, As, Cu</u>	<u>Soil</u>	<u>PAH, CCA: Cr, As, Cu</u>
<u>Bitumen Roofing products</u>	<u>PAH</u>	<u>AIR / Soil</u>	<u>PAH</u>

**Car and boat care products** (NMVOC emissions and other existing release data to be transferred to PRTRs)

<u>Coolants, if released to soil</u>	<u>anti-foulants, corrosion inhibitors, buffering and pH agents, heavy metals</u>	<u>Soil</u>	<u>-</u>
<u>Antifreezing agents if lead to soil</u>	<u>glycols, additives</u>	<u>Soil</u>	
<u>Car shampoo and car care products if lead to soil</u>	<u>NP/NPE, Cationic surfactants (DTDMAC, DSDMAC, DHTDMAC), detergents</u>	<u>Soil, water</u>	<u>NP/NPE, Cationic surfactants (DTDMAC, DSDMAC, HTDMAC), detergents</u>
<u>Underbody compounds, stone hit guards if lead to soil</u>	<u>TBT from antifouling paint</u>	<u>Water, Soil</u>	<u>TBT</u>
<u>Anti-knock agent if released to soil</u>	<u>MMT, iron pentacarbonyl, solvents</u>	<u>Soil</u>	<u>-</u>

**Electrical and electronic products** (F-gas emissions and other existing release data to be transferred to PRTRs)

<u>Batteries</u>	<u>Hg, Pb, Cd (breakage/leakage from batteries manufactured earlier)</u>	<u>Air, water</u>	<u>Pb, Hg</u>
<u>Cables and wires</u>	<u>MCCPs, BFRs, PCB, phtalates</u>	<u>Air, water, soil</u>	<u>MCCPs, DEHP</u>
<u>Electrical equipment containing mercury</u>	<u>Hg (breakage/leakage)</u>	<u>Air, water</u>	<u>Hg</u>
<u>Enclosures and monitors</u>	<u>BRFs, PCB, PBDE</u>	<u>Air, water</u>	<u>BRFs</u>
<u>Light sources (breakage)</u>	<u>Hg (breakage/leakage)</u>	<u>Air, water, soil</u>	<u>Hg</u>
<u>Transformers, capacitors (leaks)</u>	<u>PCBs, HCBDS, PCNs</u>	<u>Air, water, soil</u>	<u>PCBs</u>

**Fishing and hunting**

<u>Ammunition, gun powder, explosives (if to soil)</u>	<u>Pb, (HCBs from tracer bullets)</u>	<u>Soil, water</u>	<u>Pb</u>
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<u>Fishing gear, lead containing weights and impregnation agents in fishing nets</u>	<u>Pb</u>	<u>Water</u>	<u>Pb</u>
<b><u>Packages and plastic bags (in cases where left in the environment)</u></b>			
<u>Plastics (leach out e.g. plastic bags)</u>	<u>phthalates, heavy metals, HDPE, PCB, PAH</u>	<u>Soil and water</u>	<u>NM VOC, heavy metals</u>
<u>Packaging material, if released to soil or water</u>	<u>BPA, NP/NPE</u>	<u>Soil and water</u>	<u>NP/NPE</u>
<b><u>Personal care products (in cases of direct releases to the environment)</u></b>			
<u>Detergents, cosmetics (in cases of direct releases to the environment)</u>	<u>NPEs, musk compounds, PFOA/PFOS, LAS, NH<sub>3</sub>, phthalates, triclosan, heavy metals</u>	<u>Water</u>	<u>NPE, musk compounds</u>
<u>Pharmaceuticals (in cases of direct releases to the environment)</u>	<u>APIs, NPEs</u>	<u>Water, Soil, Air</u>	<u>NPEs, APIs</u>
<u>Sunscreens</u>	<u>E.g. EHMC, MBC, OC, BMDMB, BP3, siloxanes</u>	<u>Water</u>	<u>General method</u>
<b><u>Textile, leather, furniture</u></b>			
<u>Carpets</u>	<u>formaldehyde, phthalates, heavy metals, PFCs pesticides</u>	<u>Water</u>	
<u>Furniture foam and textiles</u>	<u>BFRs</u>	<u>Air, water</u>	<u>BFRs</u>
<u>Plastic furniture</u>	<u>phthalates, heavy metals</u>	<u>Soil</u>	
<u>Textiles</u>	<u>HCB, BFRs, DMF, triclosan, NP, alkylphenols</u>	<u>Air, water</u>	<u>BFRs, NP</u>
<u>Wooden furniture (open air use when releases directly to soil)</u>	<u>PAH, formaldehyde, heavy metals, PFOA, HCB</u>	<u>Soil</u>	<u>Cr, Cu, As</u>
<b><u>Vehicle brakes and tyres</u></b>	<u>Heavy metals / dust / micropollutants</u>	<u>Soil</u>	
<b><u>Fertilisers</u></b>	<u>Heavy metals / micropollutants</u>	<u>Soil</u>	<u>Cd</u>

**PART B: Default Release estimation factors to apply pursuant to paragraph 7 of Article 7**

**Section 1:** The release emissions factors are applied pursuant to the information contained in the Annex to the Resource compendium of PRTR release estimation techniques part IV of the OECD ENV/JM/PRTR(2016) 2/ANN.

The Release Estimation Factors shall apply to the set of products and substances listed therein, namely

- Bitumen roofing products – PAH
- Boat underseal treatment – copper
- Car care products – ethanol
- Fish farming nets – copper
- Sealants in building and construction- PCBs
- Vehicle brake wear – heavy metals
- Vehicle tyre wear – heavy metals
- Various products - mercury

Parties to this protocol may apply emission factors that would provide for more precautionary estimates (over-estimates) of releases from products as for provided under this Annex.

**Section 2:** By [insert 2 years after entry into force] parties shall apply the release emission factors established pursuant to Article 7 to the other product groups and pollutants listed to part A of this Annex.

If no release estimation techniques (RET) has been established, the following Emission factors shall apply as default:

**1. Release of mercury from other sources for which no RET has been established as to Section 1:**

Dental amalgam	Water	$E = Ef \cdot A$ E=Hg emission (kg) Ef= kg emitted per person A= number of persons	60 µg/24 h and person
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**2. Release of Brominated Flame Retardants from various products**

Product	Release	Equation	Emission factor
Furniture foam and textiles	Air	$E = Ef \cdot A$ E = BFR release (kg) Ef = emission factor (kg/kg) A = amount of BFR in the product (kg)	0.05 %
	Water		0.05 % (with WWTP) 0.7 % (without WWTP)
Insulating material in construction work	Air		0.05 %
	Water		0.05 % (indoor use) 0.7 % (outdoor use)
Flame retardants in textiles	Air		0.05 %
	Water		0.05 % (indoor use) 0.7 % (outdoor use)
Enclosures and monitors	Air		0.05 %
	Water		0.05 % (indoor use) 0.7 % (outdoor use)

**3. Generic RET to quantify released from products of Cr, Cu and As**

Product	Release	Equation	Emission factor
As, Cr and Cu from wooden toys	Treated wooden play structures to soil	$E = Ef \cdot A$ E = heavy metal emission (kg) Ef = emission factor (kg/kg) A = amount of substance used (proportion in CCA) (kg)	0.01 kg/kg (1 %)
As, Cr and Cu from wooden furniture	Soil	Distribution between air, water and soil: 0 % to air 0 % to water 30 % to soil during 30-50 years (1 % per year for 30 years).	0.01 kg/kg (1 %)



**4. Generic RET to quantify released from products of Pb**

Product	Release	Equation	Emission factor
Lead sheet	Water, soil	$E = Ef \cdot A$ E = Pb emission (kg) Ef = emission factor (g/m <sup>2</sup> ) or (%) A = area of Pb sheet (m <sup>2</sup> ) or amount of Pb in the sheet (kg)	5 g/m <sup>2</sup> (corrosion rate), to water 0,008 %, to soil 0,006 %
	Roofing, water, soil	$E = Ef \cdot Df \cdot A$ E = Pb emission (in solid form) (kg) Df = division factor:	5 g/m <sup>2</sup> (run-off rate),
	Flahings, water, soil	Df-Soil: 0.3 residential buildings 0.8 utility buildings; Df-Water 0.15 residential buildings 0.2 utility buildings Ef = run-off factor for Pb (g/m <sup>2</sup> ) A = exposed area of Pb roofing (m <sup>2</sup> )	0.88 g/m <sup>2</sup> (run-off rate),
Lead pipes	Waste-water	$E = Ef \cdot A$ E = Pb emission (mg) Ef = emission factor (mg/capita) A = capita in a given year	1.014 mg/capita
Paint	Soil	$E = Ef \cdot A$ E = Pb emission (kg) Ef = emission factor (kg/kg) A = population in a given year	0.1 kg/kg (10 %)

**5. Generic RET to quantify releases from products nonylphenol (NP) and nonylphenol ethoxylate (NPE)**

Product	Release	Equation	Emission factor
Plastic toys Plastic packages	Storm water	$E = Ef \cdot A$ E = NP release (kg) Ef = emission factor A = used amount of plastics annually (m <sup>2</sup> )  The weight of PVC plastics can be assumed to be 2000 g for an area of 1 m <sup>2</sup> with a thickness of 1.5 mm, no distinction between product groups.	2.78*10 <sup>-12</sup> kg/m <sup>2</sup> (hard plastics) 4.64*10 <sup>-12</sup> kg/m <sup>2</sup> (soft plastics)
Concrete	Storm water	$E = Ef \cdot A$ E = NP release (kg) Ef = emission factor, mg/m <sup>2</sup> A = surface of construction (m <sup>2</sup> )	0.2 mg/m <sup>2</sup>
Wall and floor coverings	Storm water	$E = Ef \cdot A$ E = NP release (kg) Ef = emission factor (kg/m <sup>2</sup> ) A = used amount of plastics annually (m <sup>2</sup> )  The weight of PVC plastics can be assumed to be 2000 g for an area of 1 m <sup>2</sup> with a thickness of 1.5 mm, no distinction between product groups.	2.78*10 <sup>-12</sup> kg/m <sup>2</sup> (hard plastics) 4.64*10 <sup>-12</sup> kg/m <sup>2</sup> (soft plastics)
Paints and varnishes	Wastewater	$E = Ef \cdot A$ E = NP release (kg) Ef = emission factor (kg/kg) A = chemical content in paints (t/a)	0.005 kg/kg (0.5 %)
Adhesives	Wastewater	$E = Ef \cdot A$ E = NP release (kg) Ef = emission factor (kg/kg) A = chemical content in paints (t/a)	0.01 kg/kg (1 %)
Plastic toys	Water	$E = Ef \cdot A$ E = NP release (kg) Ef = emission factor (kg/m <sup>2</sup> ) A = used amount of plastics annually (m <sup>2</sup> )  The weight of PVC plastics can be assumed to be 2000 g for an area of 1 m <sup>2</sup> with a thickness of 1.5 mm, no distinction between product groups.	2.78*10 <sup>-12</sup> kg/m <sup>2</sup> (hard plastics) 4.64*10 <sup>-12</sup> kg/m <sup>2</sup> (soft plastics)
Additives in pesticides	Soil	$E = Ef \cdot A$	0.85 kg/kg (85 %)
	Surface waters	$E = Ef \cdot A$	0.1 kg/kg (10 %)
	Air	E = NP release (kg) Ef = emission factor (kg/kg) A = used amount of NPEs in pesticides (import + manufacturing – export) (kg)	0.05 kg/kg (5 %)

Pharmaceuticals	APIs to wastewater	$E = D * F_e * F_p * C_{WWTP} * F_f$ E = API release (mass unit) D = Daily dose consumed per inhabitant (mg inh <sup>-1</sup> d <sup>-1</sup> ) F <sub>e</sub> = Fraction of parent compound excreted after metabolism (%) F <sub>p</sub> = Percentage of market penetration (%) (proportion of population daily treated with the specific drug substance; default 0.01) C <sub>WWTP</sub> = Capacity of a local WWTP (population equivalent) F <sub>f</sub> = Fraction of residue in effluent (%)	
	NPEs to soil	$E = Ef \cdot A$	0.85 kg/kg (85 %)
	NPEs to water		0.1 kg/kg (10 %)
	NPEs to air (veterinary medicinal products)	E = NPE release (kg) Ef = emission factor (kg/kg) A = amount of NPEs in the medicine (import + manufacturing – export) (kg)	0.05 kg/kg (5 %)
Detergents and auxiliaries in textile & leather products	Water	$E = Ef \cdot A$ E = NP release (kg) Ef = emission factor (kg/t) A = import – export of textiles (tonnes)	0,250 kg/t
Cleaning products, cosmetics and hygiene products	Wastewater	$E = Ef \cdot A$	0.9 kg/kg (90 %)
	Air	E = NPE release (kg) Ef = emission factor (kg/kg) A = amount of NPE (import + manufacturing – export of cleaning agents) (kg)	0.0025 kg/kg (0.25 %)
Car care products, detergents, cleaners	Water	$E = Ef \cdot A$ E = NP release (kg) Ef = emission factor (kg/kg) A = used amount of product	0.2 kg/kg (20 %) not connected to WWTPs; 0.28 kg/kg (28 %) connected to WWTPs
	Soil		0.136 kg/kg (13.6 %)
Textiles	Wastewater	$E = Ef \cdot A$ E = Emission (kg) EF = Emission factor (g/person) A = number of persons	0.7-1.6 g NP <sub>eq</sub> /person and year
Cleaning agents	Wastewater	$E = Ef \cdot A$ E = Emission (kg) EF = Emission factor (g/person) A = number of persons	0.1 g NP <sub>eq</sub> /person and year

6. RET to quantify releases of POPs and NMVOCs from products

End-product group	Re-lease	Equation	Emission factor
Cationic surfactants, DTDMAC, DSDMAC, DHTDMAC from car care products (washing agents, wax etc.) and other products	Water	$E = Ef \cdot A$	0.2 kg/kg (20%)
	Soil	E = Surfactant emission (kg) Ef = Emission factor (kg/kg) A = amount of the specific cationic surfactant in the product (kg)	0.4 kg/kg (40%)
DEHP from cables in the soil	Soil	$E = Ef \cdot A$ E = DEHP emission (mass unit) Ef = Emission factor (%) A = DEHP content in the cable	1.2%/a
DEHP from roofing	Water and soil		0.985 g/m <sup>2</sup> /a (general) 2,31 g/m <sup>2</sup> /a (graveled roofs)
DEHP from vinyl products	Air (indoor)	$E = Ef \cdot A$ E = DEHP emission (g) Ef = Emission factor (g/m <sup>2</sup> ) A = surface area of the product	9.5 mg/m <sup>2</sup> /a
Detergents from soaps	Waste-water	$E = \frac{A \cdot 10^6}{Y \cdot 365}$ E = Detergent discharge (g) A = Volume of applied detergent (t/a) Y = Population of area or number of people consuming the detergent	The maximum authorised concentration in finished cosmetic products is given in EU Directive 76/768/EEC concerning cosmetic products Annex III Part 1 (List of substances which cosmetic products must not contain except subject to the restrictions and conditions laid down). Due to the high number of chemicals listed in the Annex only reference to the document is provided here.
HCB from fungicides, herbicides and algaecides	Air	$E = Ef \cdot A$ E = HCB emission (mass unit) Ef = Emission factor (%) A = HCB content in biocides	40% of HCB volume applied during field use
		$E = Ef \cdot A$ E = HCB emission (mg) Ef = Emission factor (mg/ha) A = area of land treated (ha)	50-150 mg/ha (total arable land and permanent crop) per year

		$E = Ef \cdot A$ E = HCB emission (mg) Ef = Emission factor (mg/ha) A = area of land treated (ha)	100 mg/ha (arable land and permanent crops)
		$E = Ef \cdot A$ E = HCB emission (t) Ef = Emission factor (mg/ha) A = volume of HCB field application (t)	0.40 t/t (field application) 0.20 t/t (greenhouses)
		$E = Ef \cdot A$ E = HCB emission (t) Ef = Emission factor (mg/ha) A = volume of HCB field application (t)	0.50 t/t (<0.1% of total fungicide consumption)
HCB from chlorinated solvents	Air	$E = Ef \cdot A$	3 ng/ml
	Air	E = HCB emission (mass unit) Ef = Emission factor (mass/mass) A = amount of HCB in the solvent	0,2 kg/t
PAHs from treated wood	Air	$E = Ef \cdot A$	0.01 kg/kg (1%)
	Soil	E = PAH release (kg) Ef = Emission factor (kg/kg) A = amount of PAH in product (kg)	0.02 kg/kg (2%)
PCBs from transformers	Leaks	$E = Ef \cdot A$	Default volume of leaks 0.06 kg/t Emission factor to air: 0

		E = PCB emission (kg) Ef = Emission factor (kg/t) A = Activity data	Default volume of leaks 0.3 kg/t Emission factor to air:0
			Default volume of leaks 0.3 kg/t Emission factor to air 0.06 kg/t
			Default volume of leaks 0.006-0.5 g/capita/year Recommended emission factor 0.13 g/capita/year
PCBs from capacitors	Leaks	$E = Ef \cdot A$  E = PCB release (kg) Ef = Emission factor (kg/t) A = Number of capacitors * proportion of products with leaks	0.06 % 1.6 % (large capacitors)
			Volume of leaks expected 1.6 kg/t Emission factor to air: none
			Volume of leaks expected 4.2 kg/t Emission factor to air: none
			Volume of leaks expected 2.0 kg/t (leaks) Emission factor to air 0.8 kg/t
PCBs from surface coatings and adhesives	Air	$E = Ef \cdot A$  E = PCB emission (kg) Ef = Emission factor (kg/t) A = amount of PCB in product (t/a)	80 kg/t
MCCPs from cables and wires	Air	$E = Ef \cdot A$	0.0025 kg/kg (0.25%)
	Water	E = MCCP release (kg) Ef = Emission factor (kg/kg) A = amount of MCCP in the product (kg)	0.0325 kg/kg (3.25%)
	Soil		0.015 kg/kg (1.5%)
MCCPs from building and construction products	Air	$E = Ef \cdot A$	0.0025 kg/kg (0.25%)
	Water		0.0325 kg/kg (3.25%)
	Soil	E = MCCP release(kg) Ef = Emission factor (kg/kg) A = amount of MCCP in the product (kg)	0.015 kg/kg (1.5%)
SCCPs from paint and anticorrosive coating	Soil and water	$E = Ef \cdot A$  E = SCCP release (kg) Ef = Emission factor (kg/kg) A = SCCP volume in paints (t/a)	0.165 kg/kg (16.5%)

Musk compounds from the use of detergents and cosmetics	Waste-water	$E = Ef \cdot A$ E = musk releases (kg) Ef = emission factor (kg/kg)	0.2 kg/kg (20%) not connected to WWTPs; 0.008 kg/kg (8%) connected to WWTPs
	Soil	A = amount of musk compounds in the product (kg)	0.36 kg/kg (36%)
Substances used in sunscreens (e.g. EHMC, MBC, OC, BMDBM, BP3, siloxanes)	Water	$E = U \cdot D \cdot N \cdot C$ E = Release of the substance (kg) U = Average daily use (average dose application multiplied by average full body surface and number of daily uses; default 20*2 g) D = Duration of a sun-bathing period (default 5 days) N = Number of tourists in the area C = Proportion of sunscreens washed off during swimming and bathing (default 25 %)	0.25 kg/kg (25%)

Annex VI

Essential reporting elements to achieving the Sustainable Development Goals

Parties shall lay down adequate reporting requirements that would enable the public to track progress towards the achievement of the Sustainable Development Goals.

For that purpose, Parties shall ensure that the following design features and information are reported or incorporated and disseminated through the PRTRs:

A) design features

- enable evaluation of global trends
- enable evaluation of impacts of environmental policies and programmes
- improve knowledge into human and ecosystem health issues
- characterize transboundary impacts of releases, waste flows and resource consumption
- identify pollution prevention opportunities (release or consumption per unit of production, efficiency of pollution prevention techniques etc)
- enable review of environmental performance and efficiency.

B) possible indicators to apply to information;

- ratio of releases of PRTR covered chemicals and production outputs
- ratio of recyclability of resources and waste prevention per production outputs
- hazard ranking (hazard properties of substances used in industrial activities)
- environmental quality index (air, water, soil)
- environmental footprint index (per capita)
- social impacts (reduced health risks)
- effectiveness rating of measures taken to prevent pollution / reduce impact.