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Agenda item 4: Introduction to Pollutant Release and Transfer Register (PRTR) and Guidelines for Reporting

MEDPOL PRTR Implementation Guide

The meeting has been organized in collaboration with the European Union funded Project ENI SEIS II South Implementation of the Shared Environmental Information System (SEIS) principles and practices in the ENP South region – SEIS Support Mechanism

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ABBREVIATIONS

BREF	Best Available Techniques Reference Document
CAS	Chemical Abstracts Service
CORINAIR	Core Inventory of Air Emissions
EMAS	Eco-management and Audit Scheme
EMEP	European Monitoring and Evaluation Programme
EPA	Environmental Protection Agency
EPER	European Pollutants Emission Register
GIS	Geographic Information System
E-PRTR	European Pollutant Release and Transfer Register
EU	European Union
H2020	Horizon 2020
ISO	International Organisation for Standardisation
ISIC	International Standard Industrial Classification
IPCC	Intergovernmental Panel on Climate Change
NACE	Nomenclature of Economic Activities
NAP	National Action Plan
NBB	National Baseline Budget
OECD	Organisation for Economic Cooperation and Development
PRTR	Pollutant Release and Transfer Register
RET	Release Estimation Techniques
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNECE	United Nations Economic Commission for Europe
UNIDO	United Nations Industrial Development Organisation
UNITAR	United Nations Institute for Training and Research

WHO	World Health Organisation

INTRODUCTION

1. PRTR is a system for the inventory of potentially harmful releases or transfers to air, water and soil as well as waste transported off site for treatment or disposal. In addition to collecting data for PRTR from stationary sources, PRTR is also designed to include estimates of releases from diffuse sources such as agriculture and transport/traffic activities.

2. PRTR data are useful in identifying some of the sources of pollutants and their possible risks to human health, these data represent a portion of all chemical releases and transfers to the environment from a range of industrial and non-industrial sources.

The PRTR:

a) Is facility-specific with respect to reporting on point sources;
b) Is pollutant-specific or waste-specific, as appropriate;
c) Is multimedia, distinguishing among releases to air, land and water;
d) Includes information on transfers;
e) Is based on mandatory reporting on a periodic basis;
f) Includes standardized and timely data, a limited number of standardized reporting thresholds and limited provisions, if any, for confidentiality;
g) Is coherent and designed to be user-friendly and publicly accessible, including in electronic form;
h) Allows for public participation in its development and modification;
i) Is a structured, computerized database or several linked databases maintained by the competent authority.

3. The United Nations Conference on Environment and Development (UNCED) and the adoption of Agenda 21 at that conference awoke the interest of the international community and national governments for the creation of Pollutant Release and Transfer Registers (PRTRs) as a basic environmental management tool at the country level.

4. As a result, a wealth of experience has been developed internationally on this topic: PRTR programs now exist in the majority of developed countries, including the Toxic Release Inventory (TRI) in the U.S., the National Pollutant Release Inventory (NPRI) in Canada, the National Pollutant Inventory (NPI) in Australia, and the European pollution registry (previously EPER and now E-PRTR) in Europe.

5. In 2003 the UNECE Kiev Protocol was adopted which forms a broad PRTR framework which acted as basis for the E-PRTR introduction in Europe (EU Regulation 166/2006[1]).

6. In parallel to those developments UNITAR, in cooperation with the OECD, the World Health Organization (WHO), the United Nations Environment Programme (UNEP), and the United Nations Organization for Industrial Development (UNIDO), have pooled efforts to enable developing countries to introduce PRTRs for effective environmental management.

PRTR in the Mediterranean region

7. In the Mediterranean area, the PRTR implementation process started with a typical bottom-up approach by launching pilot proactive projects in different countries in 2003 under the framework of the collaboration between UNEP and UNIDO. Pilot projects have been carried out in Egypt (Alexandria), in Syria (Latakia) and in Turkey (Izmir). Other regional pilot projects followed. The general idea of promoting such pilot projects is that each of them should act as a seed for the growth of a PRTR at national level. The pilot project therefore is considered as a test system for setting up the

[1] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006R0166&from=EN

procedure, the workflow of information, the supporting tools, including the development of ad hoc software as well as to help the creation of a legal framework in which to operate the PRTR at national level.

8. The final goal of the activities carried out at regional level and then scaled up at national level is finalized at having similar systems in all the countries interested to the development of a national PRTR. The approach followed is a bottom-up strategy for the development of an integrated system for the Mediterranean area. The experience achieved so far in the pilot projects, starting from the pioneer one in Alexandria in Egypt allowed UNEP and UNIDO to set up a procedure and a suite of tools that guarantee uniformity in the workflow of the data collection and in the data structure. A conceptual schema for the data base has been developed and implemented in a logical and physical schema of a multi-language data base. Chemicals and methods are stored in the data base according to international standards (CAS number and international CODE).

9. The software tools have been developed by UN organizations and are distributed free of charge to the participants, thus guaranteeing ease of integration at national and international level as well as interoperability of the data. In this way, the final goal of developing an integrated, multi-language database of pollutants for the entire Mediterranean basin is reachable.

THE PRTR IMPLEMENTATION

The general idea of the PRTR scheme is depicted in figure 1, showing the role of the single entities.

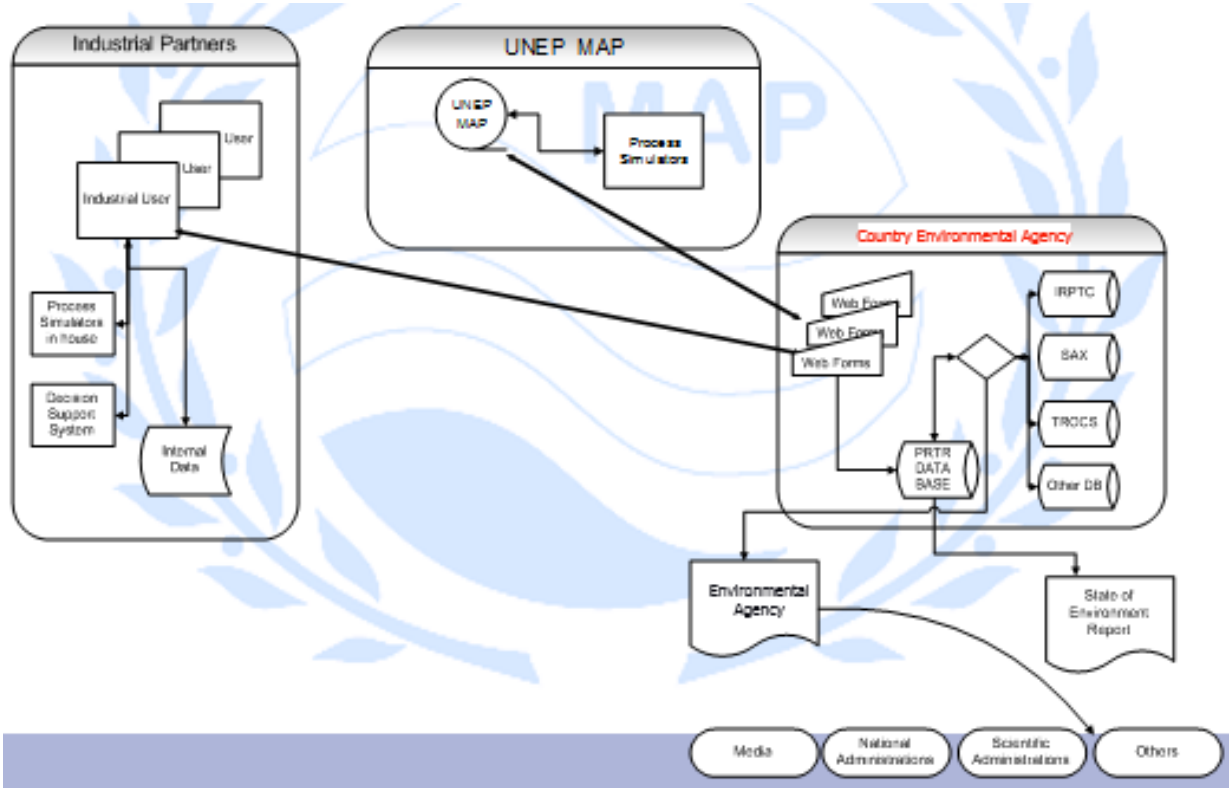

Figure 1: General schema of the PRTR procedure

10. UNEP-MAP provides the necessary support and SW to the specific country in which the PRTR should be implemented. The software is made up by the reporting system in web, the database with the GIS interface and the links to the pure component database necessary for the estimation of the physical data. The Industrial partners are trained on the use of the SW and on the meaning of each data to be stored in the PRTR database. They use the SW and they report the data directly to the environmental agency. The environmental agency prepares the report and distributes the data to the public.

THE SOFTWARE APPLICATION AND THE DATA BASE

11. The development and implementation of a PRTR system to national needs represents a mean for governments to track generation, release and the fate of various pollutants over time. A PRTR can therefore be an important tool in the total environment policy of a government by identifying the major actors who contribute the most in the overall pollution loads. The role of the database in the project is central. It is essential to develop an efficient system for storing all the data generated by the industrial partners and a system easy to be used to transfer data in the central database.

12. Reports are provided on regular basis (yearly normally) by the industrial partners on chemicals included in the list of chemicals of interest to the project. In some cases, data are generated by emission actors and/or material balances. Data are input in the database through Web forms using two different modes:

- Direct connection to a Web server;
- Organized in a local database and then transferred to the central data base

13. Once the database is filled by a representative set of data, the project personnel could take actions: the most important action is the reporting. Reports can be generated from the information reported by the facilities. For any given facility, one can create the following reports:

- Creating graphs for showing releases of each substance.
- Detailed information on the facility: addresses, contacts, etc.
- Multi-year reviews showing release trends.
- Creating maps for showing where facilities are located.

14. Data can be used for many activities, such as:
- Find out which facilities in the region have cut back their releases in recent period.
- Know which facilities take pollution prevention measures.
- Publicize the information among facility, designs makers and researchers.
- Work with facilities to improve local environmental quality.
- Know whether facilities in the area are releasing carcinogenic or toxic substances.
- Be able to undertake impact studies.

15. The software developed by UNEP-MAP and UNIDO is composed by a database containing all the necessary tables, views, stored procedures and functions, available in Microsoft SQL server version from 2008 above (it is compatible with all versions of SQL server) and web application that is used for reporting written in C# and compatible with Microsoft .NET 3.5 and above.

16. This Guidance document is aiming to support the implementation of the PRTR by addressing in particular:

- reporting procedures;
- the data to be reported;
- quality assurance and assessment;
- confidentiality;
- release determination, analytical methods and sampling methodologies;
- indication of parent companies;
- coding of activities.

17. The primary focus of the MEDPOL PRTR Regional Guidelines is the final link of the reporting chain, namely the information generated by facility operators and the quality of this information is assessed by the competent authorities. It is imperative that, without a reliable information flow (to be generated by the facilities operators) the authorities will not be able to access the actual pollutants releases and consequently use the PRTR system as a policy tool to introduce

mitigation measures. Therefore, the Guidelines form the general reporting framework to be used as a reference document describing the issues to be considered when facilities data has to be reported.

18. The aim of this MEDPOL PRTR Implementation Guide is to support the operators to collect, evaluate and report all pollutants releases into the environment by completing the "reporting format" (Appendix 8), on a regular basis, by the industrial activities. The format could be completed on a period or annual basis, as appropriate. Additionally, it gives some instructions to the competent authorities to tackle the reporting requirements described by the NAP/H2020 indicators (Appendix 9) by taking into consideration the information provided by the NBBs.

Which PRTR?

19. As stated above, there are several PRTR systems applied worldwide; the UNECE Protocol has defined a comprehensive PRTR system which forms a comprehensive framework also followed by the EU (E-PRTR).

20. The MEDPOL PRTR system is practically following the E-PRTR classification (Annex I of the 166/2006 Regulation) of activities and thresholds which are identical to those referred in the UNECE Protocol but avoid confusion (capacity and/or employees). Following the E-PRTR system will also ensure the harmonisation of PRTR procedures among all Mediterranean countries by avoiding a discrepancy between EU/non-EU countries.

21. There are several activities grouped by sectors (energy, metal production and processing, mineral industry, chemical industry, waste and waste-water management, paper/wood processing industries, intensive livestock and aquaculture, animal and vegetable products and others) which are referred in the UNECE Protocol as well as in the EU Regulation as subject to PRTR reporting with specific thresholds which, if exceeded, the relevant facilities' operators have to report the quantities emitted into the environment.

FACILITY IDENTIFICATION
Who has to report?

22. The activities are grouped in 9 activity sectors and listed in detail in Appendix 1:

1. Energy;
2. Production and processing of metals;
3. Mineral industry;
4. Chemical industry;
5. Waste and waste water management;
6. Paper and wood production and processing;
7. Intensive livestock production and aquaculture;
8. Animal and vegetable products from the food and beverage sector;
9. Other activities.

23. Reporting is required if the capacity threshold (Appendix 1) and release thresholds (Appendix 2) or off-site transfer thresholds for pollutants in waste water or for wastes are exceeded. If the thresholds are only equaled but not exceeded, reporting is not required. If no capacity threshold is specified (activities marked with *) all facilities of the relevant activity are subject to reporting if a release threshold is exceeded. If only the capacity thresholds are exceeded but the release or off-site transfer thresholds are not exceeded, reporting is not required.

24. If one operator carries out several activities falling under the same activity of the same facility at the same site, the capacities of such activities are added together. The sum of the capacities is then compared with the capacity threshold for the specific activity as listed in Appendix 1.

1.1. Reporting Period

25. This is the calendar period (1 year) to which the reported information applies, not the period in which you are submitting the report.

1.2. Certification

26. The certification statement must be signed by the owner or operator or a senior official of the facility with management responsibility for the person (or persons) completing the form. The owner, operator, or official must certify the accuracy and completeness of the information reported on the form by signing and dating the certification statement.

1.3. Facility Name and Location

27. Enter the name of your facility (plant site name or appropriate facility designation), street address, mailing address and city in the space provided.

1.3.1. Full or Partial Facility Information

28. As facility is meant any industrial unit(s) carrying out a distinctive activity of Appendix 1; that means that an integrated facility consisting of various activities has to report for each specific activity is performing.

Example 1: A factory producing fertilisers and having 2 different units on the same site for the production of the basic raw materials (4b ii) and of the fertiliser's product (4c) has to deliver 2 different reports.

Example 2: The main Appendix 1 activity of facility P is the production of paper and board and other primary wood products. The main Annex I activity of facility Q is the production of pulp from timber or fibrous materials. Facility Q also includes a combustion plant and a waste-water treatment plant all run by operator Q. In addition, operator Q runs another installation as part of facility Q, which is a non-Appendix 1 activity (figure 2). In table 1 the reporting requirements for each facility is presented.

Table 1: Example - Reporting requirements for facilities P + Q

Reporting facility	Activity	Release/ Off-site transfer	Reporting requirements
Facility P	Production of paper and board and other primary wood products	A	To be reported as release to air
		B	To be reported as release to water
		C	To be reported as off-site transfer of pollutants in waste water

Reporting facility	Activity	Release/ Off-site transfer	Reporting requirements
Facility Q	Production of pulp from timber or similar fibrous materials Thermal power station Waste-water treatment plant Other installation (non-Appendix 1)	D F E	Sum of releases to be reported as release to air Sum of all releases (E+F) to be reported as release to water

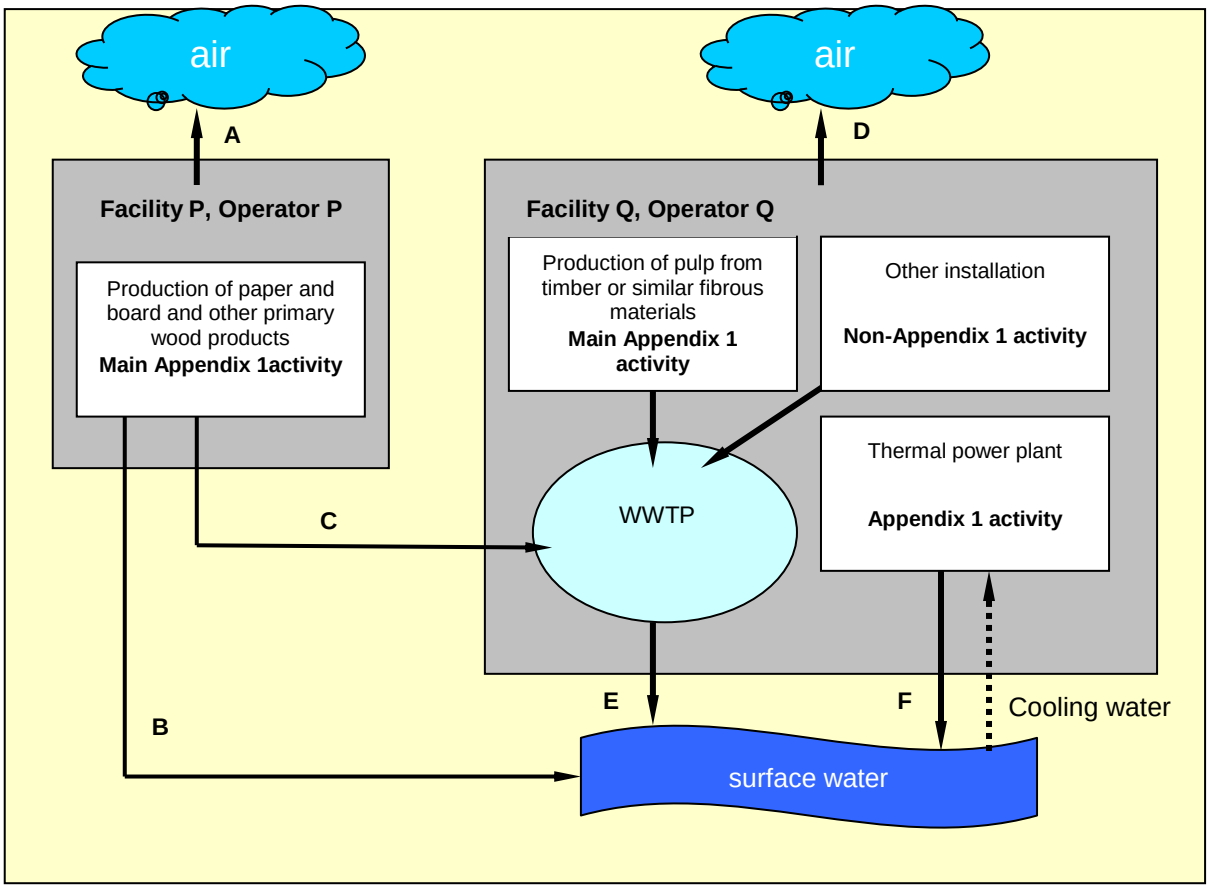

Figure 2: Example - Integrated facility P + Q

How is facility P classified?

29. The only Appendix 1 activity of facility P is the production of paper and board. Therefore, it is a 6 (b) activity (Industrial plants for the production of paper and board and other primary wood products (such as chipboard, fibreboard and plywood).

How is facility Q classified?

30. The main economic activity of facility Q is the production of pulp from timber or fibrous materials. This is also the **main** Appendix 1 activity to be reported. Facility Q also includes a combustion plant of a capacity greater than 50 MW, which is also an Appendix 1 activity. The waste water is treated in a wastewater treatment plant operated by the facility. Therefore (table 2):

Table 2: Example - Classification of facility Q

Activity	PRTR Code	Description
1 (main)	6 (a)	Industrial plants for the production of pulp from timber or similar fibrous materials
2	1 (c)	Thermal power stations and other combustion installations

1.3.2. Technical Contact

31. Enter the name and telephone number of a technical representative whom the competent authorities may contact for clarification of the information reported. This contact person does not have to be the same person who prepares the report or signs the certification statement and does not necessarily need to be someone at the location of the reporting facility. However, this person must be familiar with the details of the report so that he/she can answer questions about the information provided.

1.3.3. Public Contact

32. Enter the name and telephone number of a person who can respond to questions from the public about the report This contact person does not have to be the same person who prepares the report or signs the certification statement and does not necessarily need to be someone at the location of the reporting facility.

1.4. International Standard Industrial Classification (ISIC)/NACE Code

33. Use the United Nations International Standard Industrial Classification Code (4-digits) or the NACE Code (4-digits) to classify your activity. Both Codes have exactly the same items at the highest levels, where NACE is more detailed at lower levels. The ISIC classification is listed in Appendix 3.

1.5. Latitude and Longitude

34. Enter the latitudinal and longitudinal coordinates of your facility.

Latitude and longitude coordinates of your facility are very important for pinpointing the location of reporting facilities and are required elements.

1.6. Parent Company Information

35. Enter the name of the corporation or other business entity that is your ultimate parent company. If your facility has no parent company, check the NA box.

1.7. River Basin District Information

36. In the reporting format (Appendix 8) except the general information about the facilities its location in the relevant river basin district has also to be indicated thus allowing the competent authorities to assess the pollution loads accordingly. In doing so, the authorities should inform the operators about the exact name and codification of the relevant river basin district.

Summary:

1. Facilities falling into the activities listed in Appendix 1 and exceed (or equal to) the relevant production thresholds have to report their releases and off-site transfers;
2. Integrated facilities consisting of more than 1 installation which fall into more than 1 Appendix 1 activities have to report separately their releases and off-site transfers;
3. The economic activity of the facility is the main activity (in cases of more than 1 activities installed in the facility).

37. If an activity specified in Appendix 1 is carried out and the capacity threshold specified therein is exceeded, there is an obligation to report releases and off-site transfers: for 91 priority pollutants there is an obligation to report their emitted loads if they exceed the thresholds listed in Appendix 2. For some of the pollutants listed there the Chemical Abstracts Service (CAS) Registry Numbers[2] are also defined when available.

38. Releases of pollutants falling into several categories (of pollutants) shall be reported for each of these categories if the relevant thresholds are exceeded. Since, for example 1,2-dichloroethane is a NMVOC, releases of pollutant number 34 (1,2-dichloroethane) are also included under pollutant number 7 (NMVOC). In the case of tributyltin and triphenyltin (organotin compounds), the releases of pollutant number 74 (tributyltin and its compounds) and 75 (triphenyltin and its compounds) are also included under pollutant number 69 (Organotin compounds as total Sn).

39.
Reported releases and off-site transfers are totals of releases and off-site transfers from all **accidental, routine and non-routine** activities at the site of the facility.

- **Accidental** releases are all releases which are not deliberate, routine or non-routine and result from uncontrolled developments

- **Non-routine** activities are extraordinary activities that are carried out under controlled operation and may lead to increased releases of pollutants e.g. shut-down and start-up processes before and after maintenance operations.

40. Accidental/non-routine releases have to be added to those from the routine operation of the facility. Usually it is possible to quantify accidental releases e.g. by considering the duration of an accidental release and relating this to assumed flow rates. Since these cases do occur rarely they have to be also noted as separate data set in the reporting format (Appendix 8).

41. For each activity there is a typical set of pollutants[3] released into the air (Appendix 4) and into the water (Appendix 5). Both tables are indicative only and should not be interpreted as a standard list of parameters for specific sub-sectors. To decide which parameters are relevant to each specific installation, information contained in Environmental Impact Assessments (EIA), permit applications, site inspection reports, process flow sheets, material balances etc. have to be taken into consideration. Therefore, it might be possible that for a certain activity fewer or possibly more pollutants than indicated have to be considered and it is in the hands of operators/authorities to decide which will be the final list of pollutants for PRTR reporting.

[2] http://support.cas.org/content/chemical-substances
[3] Guidance Document for the implementation of the European PRTR, EU Commission (2006)

42. In table 3 the reporting requirements are summarized.

Table 3: Reporting requirements

Releases		**Quantity** [1]	**M/C/E** [3]	**Method used** [4]		
	to air	**kg/year** [2]	**X**	**X**		
	to water	**kg/year** [2]	**X**	**X**		
	to land	**kg/year** [2]	**X**	**X**		
Off-site transfers of:		**Quantity** [1]	**M/C/E** [3]	**Method used** [4]	**Name and address of recoverer/ disposer**	**Address of actual reco-very/disposal site receiving the transfer**
Pollutants in wastewater [5]		**kg/year** [2]	**X**	**x**		
Non-hazardous waste	for disposal (D[6])	**t/year**	**x**	**x**		
	for recovery (R[7])	**t/year**	**x**	**x**		
Hazardous waste within the country	for disposal (D)	**t/year**	**x**	**x**		
	for recovery (R)	**t/year**	**x**	**x**		
Hazardous waste transboundary	for recovery (R)	**t/year**	**x**	**x**	**x**	**x**
	for disposal (D	**t/year**	**x**	**x**	**x**	**x**

[1)] Quantities are totals of releases from all deliberate, accidental, routine and non-routine activities at the site of the facility or of off-site transfers.

[2)] The total quantity of each pollutant that exceeds the threshold value specified in Appendix 2. In addition, any data that relate to accidental releases have to be reported separately whenever available.

[3)] It has to be indicated whether the reported information is based on measurement (M), calculation (C) or estimation (E).

[4)] Where data are measured or calculated, the method of measurement and/or the method for calculation shall be indicated.

[5)] Off-site transfer of each pollutant destined for waste-water treatment that exceeds the threshold value specified in Appendix 2

[6)] Disposal process coding (see Appendix 7)

[7)] Recycling process coding (see Appendix 7)

2.1. Measurement, calculation, estimation methods

43. Sometimes the total release of a pollutant at a facility is determined by more than one determination method; in that case, the determination method with the highest amount of release is chosen for reporting. Example: The release of an air pollutant occurs at two stacks (stack A and stack B). The total release exceeds the relevant release threshold. The release at stack A is measured and amounts 100 kg/year. The release at stack B is calculated and amounts 50 kg/year. Since the highest amount of release (100 kg/year) is measured, the total release (150 kg/year) has to be indicated as being based on measurement.

2.1.1. Measurement (M)

44. For facilities of capacities mentioned in Appendix 1 it is expected that most of the released pollutants are measured and recorded. In this case the relevant measuring method should be cited. In Appendix 6 an indicative list of internationally approved measuring methods for releases of air and water pollutants is presented.

45. "M" is used when the releases of a facility are derived from direct monitoring results for specific processes at the facility, based on actual continuous or discontinuous measurements of pollutant concentrations for a given release route. "M" should also be used when the annual releases are determined based on the results of short term and spot measurements.

2.1.2. Calculation (C)

46. "C" is used when the releases are based on calculations using activity data (fuel used, production rate, etc.) and emission factors or mass balances.
A good guidance is the set of emission indicators developed by MEDPOL which relate production capacities with releases (UNEP(DEPI)/MED WG. 399/Inf.3); however not all releases are covered by these factors. In that case the operator has to report which calculation method has been considered.

47. Other Internationally approved calculation methods are:

- EU Guidelines for the monitoring and reporting for greenhouse gas emissions under the Emission Trading Scheme[4]
- IPCC Guidelines[5]
- EMEP/CORINAIR Emission Inventory Guidebook[6]

2.1.3. Estimation (E)

"E" is used when the releases are determined by best assumptions (e.g. mass balances) or expert guesses which are not based on publicly available references or in case of absence of recognized emission estimation methodologies or good practice guidelines.

2.1.4. Additional information sources for the determination of releases

48. Other information on release determination methods can be found at the following sources:

- The BREF document "Reference Document on the General Principles of Monitoring"[7] contains a list of CEN-standards and pre-standards for determination of releases.
- The United Nations Institute for Training and Research (UNITAR) "Guidance for Facilities on PRTR Data Estimation and Reporting"[8]
- The website of the OECD "Resource Centre for PRTR Release Estimation Techniques" (RETs)[9] provides a clearing-house of guidance manuals/documents of release estimation techniques for the principal pollutant release and transfer registries developed by OECD member countries.
- Information about air emission factors can be found in the US EPA website[10]

[4] https://ec.europa.eu/clima/sites/clima/files/ets/monitoring/docs/gd1_guidance_installations_en.pdf
[5] http://www.ipcc-nggip.iges.or.jp/public/gl/invs1.html
[6] https://www.eea.europa.eu/publications/emep-eea-guidebook-2016
[7] http://eippcb.jrc.ec.europa.eu/reference/BREF/mon_bref_0703.pdf
[8] http://cwm.unitar.org/publications/publications/cw/prtr/prtr_en/prtr_tech_support_2_nov2003.pdf
[9] http://www.oecd.org/env/prtr/rc
[10] https://www.epa.gov/air-emissions-factors-and-quantification/basic-information-air-emissions-factors-and-quantification

2.1.5. Other calculation/estimation techniques

49. The operator may use "equivalent" methodologies other than internationally approved methodologies, even when available, if one or more of the conditions are fulfilled which are listed in table 4: there should also be a short description of the methodology applied (see example in table 5).

Table 4: Codification of M/C/E methodologies

Method used for determination of releases/off-site transfers	Designation of the method used
Measurement methodologies	
Internationally approved measurement standard	short designation of the relevant standard (e.g. EN 14385:2004)
Measurement methodology already prescribed by the competent authority in a license or an operating permit for that facility	PER
National or regional binding measurement methodology prescribed by legal act for the pollutant and facility concerned	NRB
Alternative Measurement Method in accordance with existing CEN/ISO measurement standards	ALT
Measurement methodology the performance of which is demonstrated by means of certified reference materials and accepted by competent authority	CRM
Other measurement methodology	OTH
Calculation methodologies	
Internationally approved calculation method	short designation of the method used: ETS, IPCC, UNECE/EMEP
Calculation methodology already prescribed by the competent authority in a license or an operating permit for that facility	PER
National or regional binding calculation methodology prescribed by legal act for the pollutant and facility concerned	NRB
Mass balance method which is accepted by the competent authority	MAB
European-wide sector specific calculation method	SSC
Other calculation methodology	OTH

Table 5: Example of M/C/E methodologies description

Releases to air						
Pollutant		Method			Quantity	
No[1].	Name	M/C/E	Method used		T (total) (kg/year)	A (accidental) kg/year
			Code	Designation or description		
1	CH_4	**C**	**NRB**	regional binding measurement methodology using specific gas chromatography	125,000	-
3	CO_2	**C**	**ETS**	-	244,000,000	-

14	HCFCs	**E**	-	-	1.28	1.28
18	Cd	**M**	**EN 14385: 2004**	-	12.5	-
72	PAH	**M**	**NRB**	**VDI 3873**	122	-

[1)] As numbered in Appendix 2

2.2. Examples of releases

50. All releases have to be accurately reported so that the necessary information is complete and comprehensive; that means that, except of the pollutants quantities data about the method used, the accidental releases and the total loads should be mentioned.

2.2.1. Releases to air

51. A total of 60 substances are specified as relevant air pollutants. Releases from a facility of air pollutants in excess of the threshold values in column 1a (Appendix 2) must be reported.

52. An example of releases to air from an oil refinery installation is presented in table 4

Table 6: Releases to air (example: oil refinery)

			Releases to air			
Pollutant			Method		Quantity	
No[1]	CAS Number	Name	M/C/E	Method used	T (total) (kg/year)	A (accidental) kg/year
1	74-82-8	Methane (CH_4)	C	IPCC	521,000	-
3	124-38-9	Carbon dioxide (CO_2)	M	ISO 12039:2001	413,000,000	-
21		Mercury	M	EN 13211:2001	17.0	2.00

[1)] As numbered in Appendix 2

2.2.2. Releases to water

53. A total of 71 substances are specified as relevant water pollutants. Releases of water pollutants which exceed the threshold values in column 1b (Appendix 2) must be reported by the facility.

54. An example of releases to water from a plant for the pre-treatment of fibres and textiles is presented in table 5.

Table 7: Releases to water (example: pre-treatment of fibres and textiles)

		Releases to water				
Pollutant			Method		Quantity	
No[1]	CAS Number	Name	M/C/E	Method used	T (total) kg/year	A (accidental) kg/year
63		Brominated diphenylethers (PBDE)	E		25.5	20.0
76		Total organic carbon (TOC)	M	EN 1484:1997	304,000	-
N						

[1)] As numbered in Appendix 2

2.2.3. Releases to land

55. As releases to land are those pollutants contained in wastes which are subject to land treatment (D 1) e.g. spreading of oily sludges and/or deep injection (D 3) e.g. of saline solutions as described in Appendix 7. Sludge and manure spreading are recovery operations and therefore not reported as releases to land.

56. A total of 61 substances are specified as relevant pollutants for releases to land.

57. Accidental releases of pollutants onto the soil on the site of a facility (e.g. spillages) do not have to be reported. Accidental releases to land are theoretically possible (e.g. due to the leakage of a pipeline at the location of deep injection) but it is expected that they will only occur in very rare cases.

58. An example of releases to land by deep injection of liquid wastes is presented in table 6.

Table 8: Releases to land (example: deep injection)

	Releases to land					
Pollutant			Method		Quantity	
No[1]	CAS Number	Name	M/C/E	Method used	T (total) kg/year	A (accidental) kg/year
24		Zinc and compounds (as Zn)	M	EN ISO 11885:1997	125	-
79		Chloride (as total Cl)	M	EN ISO 10304-1	2,850,000	-
n						

1) As numbered in Appendix 2

2.3. Off-site transfers

2.3.1. Off-site transfers to water

59. An off-site transfer of pollutants in waste water means the movement beyond the boundaries of a facility of pollutants in wastewater destined for wastewater treatment including industrial waste water treatment. The off-site transfer may be carried out via a sewer or any other means such as containers or (road) tankers.

60. Operators shall report off-site transfers of any pollutant specified in Appendix 2 in waste water destined for waste-water treatment for which the threshold value specified in column 1b of the table in Appendix 2 is exceeded.

61. An example of off-site transfer of wastewaters (containing nitrogen and phosphorous) is given in table 9.

Table 9: Off-site transfer of wastewaters (example)

Off-site transfers of pollutants in waste water					
Pollutant		Method		Quantity	
No[1]	Name	M/C/E	Method used	T (total) kg/year	A (accidental) kg/year
12	Total nitrogen	M	EN 12260	76,400,000	-
13	Total phosphorus	M	EN ISO 6878:2004	10,900,000	-

[1)] As numbered in Appendix 2

2.3.2. Off-site transfer of waste

62. An off-site transfer of waste means the movement beyond the boundaries of a facility of waste destined for disposal or recovery. Operators shall report off-site transfers of

- hazardous waste (HW) exceeding 2 tons per year
- non-hazardous waste (non-HW) exceeding 2,000 tons per year

63. for any operations of recovery or disposal (see Appendix 7) with the exception of the disposal operations of land treatment and deep injection, as these have to be reported as releases to land.

64. The operator has to indicate whether the waste is destined for recovery ("R") or for disposal ("D"). If the waste is destined for waste treatment that includes both recovery and disposal operations (e.g. sorting), the treatment operation (R or D) for which more than 50% of the waste is destined should be reported. In cases where the facility is not able to trace whether more than 50% of the waste is disposed or recovered, then code "D" should be used.
An example of off-site transfer of wastes is given in table 10.

Table 10: Off-transfer of wastes (example)

Off-site transfer of waste	Quantity (t/year)	Waste treatment operation	M/C/E	**Method used**
Hazardous waste within the country	10.5	R	M	weighing
Non-hazardous waste	2,500	D	C	PER

65. The indication of the method used for the off-site transfer of hazardous waste is based on "weighing", that of non-hazardous waste on calculation by using a methodology prescribed by the competent authority in the operating permit for the facility (method name to be reported).

2.4. Quality assurance

2.4.1. Operators

66. The reported data by the facility operators must be:

Complete: the reported data should cover all releases and off-site transfers of all pollutants and wastes exceeding thresholds for all facilities with Appendix 1 activities above the capacity thresholds. The data should also contain all additionally required information (e.g. description of calculation methods).

Consistent: the data shall be reported on the basis of unambiguous and uniform definitions, source identification and reliable methodologies for the determination of the releases. Consistent reporting by facilities will enable the competent authorities to carry out consistent reporting in standardised formats to MEDPOL and any other institutions (e.g. EEA) concerned. This will enable comparison of the reported data with previous release data of reporting facilities or with

data of similar sources in other countries. In this respect a consistent use of the identification number of facilities and of the pollutants is essential.

Credible: the data must be authentic, reliable, comparable and transparent. In the context of pollutant release and transfer registers credibility is closely linked to consistency. If the approaches and data sources used in an inventory development project are considered consistent, then users will have an acceptable degree of confidence in the releases data developed from those techniques.

2.4.2. Authorities

67. Competent authorities shall assess the data provided against information that is already available, as appropriate. For example, competent authorities may wish to check the data received against the following:

- information received by the competent authorities arisen as part of licensing procedures or compliance checking of permits;
- information received as a result of self-monitoring by facilities that is reported to the authorities;
- information related to the application by the facilities of eco-management and audit scheme (EMAS) or ISO 14001

68. In the case of any discrepancies, uncertainties or doubts in respect of the information provided by facilities, the competent authority could ask for clarification from the facility concerned. The facility could also be asked to amend the information supplied if appropriate. This includes examination by the competent authorities of the records held by operators especially the data from which the reported information was derived and the description of the methodology used for data gathering.

69. The E-PRTR validation tool[11] can support the authorities; it is a software application which can easily detect erroneous data such as incorrect co-ordinates and figures, pollutants reported twice and facilities with no reported releases.

2.5. Confidentiality

70. If an operator of a facility has justifiable reasons that specific information concerning releases or off-site transfers should be kept confidential, he has to inform the competent authorities and justify this decision. The authorities have to approve which data has to be kept confidential (possibly upon an indication to that effect by the operator) and inform the MEDPOL Secretariat accordingly.

71. In practice, this means that only the name of the pollutant should be kept confidential and instead should be replaced by the name of a group of pollutants. The method of measurement/calculation should not be reported either.

72. An example of confidential data reporting is given in table 11.

Table 11: Confidential data reporting (example)

	Pollutant No[1]	Pollutant name/category	M/C/E	Method used	Quantity kg/year
Confidential data	-	Heavy metal	M	-	8.45

[1)] As numbered in Appendix 2

[11] https://www.eionet.europa.eu/schemas/eprtr/EPRTRUserManual.pdf

73. The groups of pollutants can be seen in table 12.

Table 12: Groups of pollutants

Groups of pollutants	No. of pollutant according to Appendix 2
Greenhouse gases	1, 3, 4, 5, 9, 10
Other gases	2, 6, 7, 8, 11, 14, 15, 16, 80, 84, 85
Heavy metals	17-24
Pesticides	25-30, 32, 33, 36-39, 41, 44-46, 51, 59, 67, 74, 75, 77, 89
Chlorinated organic substances	31, 34, 35, 40, 42, 43, 47-50, 52-58, 60, 63, 90
Other organic substances	61, 62, 64-66, 68-73, 76, 78, 87, 88, 91
Inorganic substances	12, 13, 79, 81-83, 86.

74. In case that the name of the facility should be confidential the reporting format is presented in table 13. The geographical coordinates of the facility shall not be kept confidential in this case in order to enable the public to look at the total of industrial releases and off-site transfers in their neighbourhood.

Name	Address	Geogra-phical co-ordinates	Pollutant no.	Pollutant	M/C/E	Method used	Quantity (total in kg/year)	Quantity (accidental in kg/year)	Reason for confi-dentiality
-	-	8.665055 48.576678	1	Methane (CH_4)	C	IPCC	550,000	-	

3. PRTR – NBB

75. The National Baseline Budget (NBB) and the PRTR aim both at the most accurate assessment of pollutants released into the environment. Their set-up and content are of similar characteristics; however there are some discrepancies which are presented in table 13.

Table 13: E-PRTR/NBB comparison

Issue	NBB	PRTR
Geographical scope	Administrative regions located in drainage basins that outflow into the Mediterranean.	All regions and river basin districts
Source type	Point sources (industry and urban centres).	Industrial facilities and diffuse sources
Scope of point sources	All point sources irrespective of their capacity.	Only if the facility exceeds the following thresholds: falls under at least one of the 65 PRTR economic activities listed in Appendix 1 and exceeds at least one of the PRTR capacity thresholds transfers waste off-site which exceed specific thresholds releases pollutants which exceed specific thresholds specified for each media - air, water and land in Appendix 2

Issue	NBB	PRTR
Media	Water and air	Amounts of pollutant releases to air, water and land as well as off-site transfers of waste and of pollutants in waste water
Emission scope	Direct emissions to drainage basins or into the sea.	Direct emissions and indirect emissions (going to an external treatment plant).
Sector categories	Sectors according to LBS Protocol 30 categories Subsectors: 97 categories	Appendix 1 of the E-PRTR Regulation: 9 sector categories NACE Main Economic Activity 65 categories
Groups of pollutants	Hydrocarbons Metals and compounds Nutrients, SS and BOD/TOC Organohalogen Other atmospheric pollutants Other inorganic compounds Other organic compounds	Greenhouse gases Other gases Heavy metals Pesticides Chlorinated organic substances Other organic substances Inorganic substances
Method of quantification	Measurement of the concentration levels of emissions at the source and quantification using additional data on the source activity. Estimation of emissions based on emission factors and industrial activity rates, material flow, etc.	Measured (M): Release data are based on measurements. Additional calculations are needed to convert the results of measurements into annual release data. Calculated (C): Release data are based on calculations using activity data (fuel used, production rate, etc.) and emission factors or mass balances. Estimated (E): Release data are based on non-standardized estimations.

76. In principal the PRTR system is focusing on bigger point sources and on a more detailed inventory of pollutants (by including off-site transfers); on the other hand some main pollutants for the assessment of water pollution i.e. BOD, suspended solids (SS) are covered by the NBB reporting requirements.

77. In order to get the necessary information for the assessment of the pollutants releases into the Mediterranean environment both systems, NBB and PRTR, should be used and harmonised to the largest possible extent by applying the following selection criteria:

1) To select/filter only regions and river basin districts located in drainage basins that outflow into the Mediterranean
2) To compare the sector and subsectors dictionaries under NBB and under PRTR in order to identify the corresponding loads source categories and to identify not fully matching sectors/subsectors. Consequently:

    - dictionary entries not corresponding to any coded item in any list should be left in the NBB dictionaries;
    - the sector dictionaries are the union of the PRTR and NBB sector dictionaries;
    - for a specific sector the subsectors dictionaries are the union of the PRTR and NBB subsectors dictionaries;

3. To gather all emission data from industrial facilities regardless of specific capacity thresholds set by the PRTR or, alternatively, ensure that data collected are representative of the total discharges from such sector/subsector at national level, i.e.:
    - For NBB reporting purposes, it is recommended neither to adopt PRTR capacity thresholds nor to set national capacity thresholds;

- If national capacity thresholds are set, to ensure that emissions gathered from each industrial sector/subsector in the country are representative of the total sector/subsector emissions in the country, i.e. they are at least 80% of the total emissions per sector/subsector. It is then up to each country to set such national capacity thresholds;

4. To compare the pollutant dictionaries under NBB and under PRTR in order to identify the corresponding loads of pollutants and to identify not matching pollutants:
   - dictionary entries not corresponding to any coded item in any list should be left in the NBB dictionaries;
   - the pollutant dictionaries in the NBB are the union of the PRTR and NBB pollutant dictionaries.

5. To gather all emission data from industrial facilities regardless of specific pollutant thresholds set in Appendix 2 or, alternatively, ensure that data collected are representative of the total discharges from such pollutants at national level, i.e.:

   - For NBB reporting purposes it is recommended neither to adopt PRTR pollutant thresholds nor to set national pollutant thresholds;
   - If national pollutant thresholds are set, to ensure that pollutant emissions gathered in the country are representative of the total pollutant emissions in the country, i.e. they are at least 80% of the total emissions per pollutant. It is then up to each country to set such specific pollutant thresholds.

6. In order to assure the coherency among NBB data and PRTR it is proposed to use in the NBB the same codification of the method of estimation of emissions used in the PRTR. For the sectors which do not allow the PRTR coding it is proposed to add a text field where the operator can draft the estimation method used.

7. PRTR data can be massively uploaded from an XML into the database. However, since E-PRTR data provide only a portion of the NBB data, the solution envisaged is to allow 2 different types of prefilling:

   - prefilling of every data, using the old NBB data. In this case the Data Provider can recover all the NBB data and then update them to create the new NBB report.
   - prefilling of the old PRTR data. In this case the Data Provider can recover only the PRTR portion of the NBB data and then update only the integration to the PRTR data in order to create the new NBB data.

4. AUTHORITIES REPORTING

4.1. General framework – NAP/H2020 indicators

78. After having accessed the reported data and checked its reliability from all relevant facilities the competent authorities should define their involvement in the reporting process and in particular the path towards a comprehensive and targeted report to the MEDPOL system in light of the NAP/H2020 indicators set. In doing so, the received information has to be focused on:

1. The priority industrial sectors which prevail in the Mediterranean region. The major industrial sectors are:

- Petroleum refineries
- Food industries and food processing
- Fertilizers and inorganic chemicals
- Metallurgy
- Leather processing

- Cement
- Textile dyeing
- Paper and pulp
- Organic chemicals
- Energy production
- Gas production
- Pharmaceuticals

2. The grouping of the data in such a way that the envisaged NAP/H2020 indicators can be populated. These indicators focus not only on pressures to the environment (i.e. releases) but also on remediation measures (i.e. response indicators) taken so far to reduce the pollution loads (e.g. treatment installations, legal/administrative measures etc.).

79. The work on the preparation/updating of the NAP/H2020 indicators has resulted to the set presented in Table 13.

Table 14: NAP/H2020 indicators

No.	Title of indicator	Sub-indicators	Type
IND 6.1	**Release of nutrients from industrial sectors**	6.1.1. Total BOD load discharged from industrial installations to the Mediterranean marine environment. 6.1.2. Total Nitrogen load discharged from industrial installations to the Mediterranean marine environment 6.1.3. Total Phosphorus load discharged from industrial installations to the Mediterranean marine environment.	Pressure indicator
IND 6.2	**Release of toxic substances from industrial sectors**	6.2.1. Total heavy metals load released from industrial installations to the Mediterranean marine environment. 6.2.2. Furans and dioxins load released from industrial installations to the Mediterranean marine environment. 6.2.3. Polycyclic aromatic hydrocarbons (PAH) load released from industrial installations to the Mediterranean marine environment. 6.2.4. Volatile organic compounds (VOC) load released from industrial installations to the Mediterranean marine environment.	Pressure indicator
IND 6.3	**Industrial hazardous waste disposed in environmentally sound manner**	6.3.1. Total quantity of generated hazardous waste from industrial installations. 6.3.2. Quantity of industrial hazardous waste disposed in environmentally sound manner relative to total quantity of generated hazardous waste from industrial installations.	Response indicator
IND 6.4	**Compliance measures aiming at the reduction and/or elimination of pollutants generated by industrial sectors**	6.4.1. Number of industrial installations reporting periodically loads of pollutants discharged to the marine and coastal environments relative to the total number of industrial installations. 6.4.2. Number of environmental inspections carried out by enforcement authorities in which industrial installations were found to be in breach of laws	Response indicator

No.	Title of indicator	Sub-indicators	Type
		and regulations relative to the total number of executed inspections. 6.4.3. Number of eliminated hotspots identified in the updated NAPs relative to the 2001 and 2015 baselines.	

4.2. NAP/H2020 reporting

80. In order to fulfil the reporting requirements associated with the NAP/H2020 indicators there are some methodological activities to be undertaken by the competent authorities (if not already applied) namely:

a. Define the river basin districts which directly/indirectly affect the Mediterranean environment;
b. Get the cumulative loads of the water pollutants referring to indicators 6.1 and 6.2;
c. Identify the areas from where air emissions are likely to influence the Mediterranean environment. In doing so, geographical and climatic considerations have to be considered i.e. the wind directions/intensities and the proximity to the Mediterranean coast;
d. Map all point sources within the river basin for which PRTR data exists;
e. Get the cumulative loads of the relevant air emissions referring to indicator 6.2;
f. Group all relevant loads as required by the indicator 6.3 (hazardous/non-hazardous waste).

81. These actions are also foreseen in the framework of the NBB preparation; that means that the reporting requirements for the indicators 6.1, 6.2 and 6.3 can be met by the authorities responsible for the NBB exercise.

82. Indicator 6.4, a response indicator, is focusing on mitigation measures of technical (treatment plants), regulatory/administrative (permitting/inspection) nature. That means that the authorities have to:

- Review/evaluate issued permits for “strategic” facilities i.e. for those which are considered, according to the PRTR data, as major pollutants
- Assess the already performed inspection reports by listing any interventions implied by the relevant authorities
- Report the administrative/technical measures taken by these facilities to improve their environmental performance i.e. revised permits with stricter emission limit values, treatment plants, recycling/prevention measures etc.

83. In Appendix 9 the format for meeting the reporting requirements of indicator 6.4.2 is presented.

Annex I
Activities

Activities

No	Activity	Capacity threshold
1.	Energy sector	
(a)	Mineral oil and gas refineries	*
(b)	Installations for gasification and liquefaction	*
(c)	Thermal power stations and other combustion installations	With a heat input of 50 megawatts (MW)
(d)	Coke ovens	*
(e)	Coal rolling mills	With a capacity of 1 tonne per hour
(f)	Installations for the manufacture of coal products and solid smokeless fuel	*
2.	Production and processing of metals	
(a)	Metal ore (including sulphide ore) roasting or sintering installations	*
(b)	Installations for the production of pig iron or steel (primary or secondary melting) including continuous casting	With a capacity of 2,5 tonnes per hour
(c)	Installations for the processing of ferrous metals: (i) Hot-rolling mills (ii) Smitheries with hammers (iii) Application of protective fused metal coats	 With a capacity of 20 tonnes of crude steel per hour With an energy of 50 kilojoules per hammer, where the calorific power used exceeds 20 MW With an input of 2 tonnes of crude steel per hour
(d)	Ferrous metal foundries	With a production capacity of 20 tonnes per day
(e)	Installations: (i) For the production of non-ferrous crude metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic processes (ii) For the smelting, including the alloying, of non-ferrous metals, including recovered products (refining, foundry casting, etc.)	 * With a melting capacity of 4 tonnes per day for lead and cadmium or 20 tonnes per day for all other metals
(f)	Installations for surface treatment of metals and plastic materials using an electrolytic or chemical process	Where the volume of the treatment vats equals 30 m^3
3.	Mineral industry	
(a)	Underground mining and related operations	*
(b)	Opencast mining and quarrying	Where the surface of the area effectively under extractive operation equals 25 hectares
(c)	Installations for the production of: (i) Cement clinker in rotary kilns (ii) Lime in rotary kilns (iii) Cement clinker or lime in other furnaces	 With a production capacity of 500 tonnes per day With a production capacity of 50 tonnes per day With a production capacity of 50 tonnes per day

(d)	Installations for the production of asbestos and the manufacture of asbestos-based products	*
No	Activity	Capacity threshold
(e)	Installations for the manufacture of glass, including glass fibre	With a melting capacity of 20 tonnes per day
(f)	Installations for melting mineral substances, including the production of mineral fibres	With a melting capacity of 20 tonnes per day
(g)	Installations for the manufacture of ceramic products by firing, in particular roofing tiles, bricks, refractory bricks, tiles, stoneware or porcelain	With a production capacity of 75 tonnes per day, or with a kiln capacity of 4 m3 and with a setting density per kiln of 300 kg/m3
4. (a)	Chemical industry Chemical installations for the production on an industrial scale of basic organic chemicals, such as: (i) Simple hydrocarbons (linear or cyclic, saturated or unsaturated, aliphatic or aromatic) (ii) Oxygen-containing hydrocarbons such as alcohols, aldehydes, ketones, carboxylic acids, esters, acetates, ethers, peroxides, epoxy resins (iii) Sulphurous hydrocarbons (iv) Nitrogenous hydrocarbons such as amines, amides, nitrous compounds, nitro compounds or nitrate com- pounds, nitriles, cyanates, isocyanates (v) Phosphorus-containing hydrocarbons (vi) Halogenic hydrocarbons (vii) Organometallic compounds (viii) Basic plastic materials (polymers, synthetic fibres and cellulose-based fibres) (ix) Synthetic rubbers (x) Dyes and pigments (xi) Surface-active agents and surfactants	*
(b)	Chemical installations for the production on an industrial scale of basic inorganic chemicals, such as: (i) Gases, such as ammonia, chlorine or hydrogen chloride, fluorine or hydrogen fluoride, carbon oxides, sulphur com- pounds, nitrogen oxides, hydrogen, sulphur dioxide, carbonyl chloride (ii) Acids, such as chromic acid, hydrofluoric acid, phosphoric acid, nitric acid, hydrochloric acid, sulphuric acid, oleum, sulphurous acids (iii) Bases, such as ammonium hydroxide, potassium hydroxide, sodium hydroxide (iv) Salts, such as ammonium chloride, potassium chlorate, potassium carbonate, sodium carbonate, perborate, silver nitrate (v) Non-metals, metal oxides or other inorganic compounds such as calcium carbide, silicon, silicon carbide	*

(c)	Chemical installations for the production on an industrial scale of phosphorous, nitrogen- or potassium-based fertilisers (simple or compound fertilisers)	*
(d)	Chemical installations for the production on an industrial scale of basic plant health products and of biocides	*
(e)	Installations using a chemical or biological process for the production on an industrial scale of basic pharmaceutical products	*
(f)	Installations for the production on an industrial scale of explosives and pyrotechnic products	*
5.	Waste and wastewater management	
(a)	Installations for the recovery or disposal of hazardous waste	Receiving 10 tonnes per day
(b)	Installations for the incineration of non-hazardous waste in the scope of Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste (2)	With capacity of 3 tonnes per hour
(c)	Installations for the disposal of non-hazardous waste	With a capacity of 50 tonnes per day
(d)	Landfills (excluding landfills of inert waste and landfills, which were definitely closed before 16.7.2001 or for which the after-care phase required by the competent authorities according to Article 13 of Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (3) has expired)	Receiving 10 tonnes per day or with a total capacity of 25 000 tonnes
(e)	Installations for the disposal or recycling of animal carcasses and animal waste	With a treatment capacity of 10 tonnes per day
(f)	Urban waste-water treatment plants	With a capacity of 100000 population equivalents
(g)	Independently operated industrial waste-water treatment plants which serve one or more activities of this annex	With a capacity of 10 000 m^3 per day (4)
6.	Paper and wood production and processing	
(a)	Industrial plants for the production of pulp from timber or similar fibrous materials	*
(b)	Industrial plants for the production of paper and board and other primary wood products (such as chipboard, fibreboard and plywood)	With a production capacity of 20 tonnes per day
(c)	Industrial plants for the preservation of wood and wood products with chemicals	With a production capacity of 50 m^3 per day
7.	Intensive livestock production and aquaculture	
(a)	Installations for the intensive rearing of poultry or pigs	(i) With 40 000 places for poultry (ii) With 2 000 places for production pigs (over 30 kg) (iii) With 750 places for sows
(b)	Intensive aquaculture	With a production capacity of 1 000 tonnes of fish or shellfish per year

8.	Animal and vegetable products from the food and beverage sector	
(a)	Slaughterhouses	With a carcass production capacity of 50 tonnes per day
(b)	Treatment and processing intended for the production of food and beverage products from:	
	(i) Animal raw materials (other than milk)	With a finished product production capacity of 75 tonnes per day
	(ii) Vegetable raw materials	With a finished product production capacity of 300 tonnes per day (average value on a quarterly basis)
(c)	Treatment and processing of milk	With a capacity to receive 200 tonnes of milk per day (average value on an annual basis)
9.	Other activities	
(a)	Plants for the pre-treatment (operations such as washing, bleaching, mercerisation) or dyeing of fibres	With a treatment capacity of 10 tonnes per day
(b)	Plants for the tanning of hides and skins	With a treatment capacity of 12 tonnes of finished product per day
(c)	Installations for the surface treatment of substances, objects or products using organic solvents, in particular for dressing, printing, coating, degreasing, waterproofing, sizing, painting, cleaning or	With a consumption capacity of 150 kg per hour or 200 tonnes per year
(d)	Installations for the production of carbon (hard-burnt coal) or electro-graphite by means of incineration or	*
(e)	Installations for the building of, and painting or removal of paint from ships	With a capacity for ships 100 m long

**No threshold (any capacity)*

Annex II
Pollutants

Pollutants

No	CAS number	Pollutant (1)	Threshold for releases (column 1)		
			to air (column 1a) kg/year	to water (column 1b) kg/year	to land (column 1c) kg/year
1	74-82-8	Methane (CH_4)	100 000	— (2)	—
2	630-08-0	Carbon monoxide (CO)	500 000	—	—
3	124-38-9	Carbon dioxide (CO_2)	100 million	—	—
4		Hydro-fluorocarbons (HFCs)	100	—	—
5	10024-97-2	Nitrous oxide (N_2O)	10 000	—	—
6	7664-41-7	Ammonia (NH_3)	10 000	—	—
7		Non-methane volatile organic compounds	100 000	—	—
8		Nitrogen oxides (NO_x/NO_2)	100 000	—	—
9		Perfluorocarbons (PFCs) (4)	100	—	—
10	2551-62-4	Sulphur hexafluoride (SF_6)	50	—	—
11		Sulphur oxides (SO_x/SO_2)	150 000	—	—
12		Total nitrogen	—	50 000	50 000
13		Total phosphorus	—	5 000	5 000
14		Hydrochlorofluorocarbons (HCFCs) (5)	1	—	—
15		Chlorofluorocarbons (CFCs) (6)	1	—	—
16		Halons (7)	1	—	—
17		Arsenic and compounds (as As) (8)	20	5	5
18		Cadmium and compounds (as Cd) (8)	10	5	5
19		Chromium and compounds (as Cr) (8)	100	50	50
20		Copper and compounds (as Cu) (8)	100	50	50
21		Mercury and compounds (as Hg) (8)	10	1	1
22		Nickel and compounds (as Ni) (8)	50	20	20
23		Lead and compounds (as Pb)	200	20	20
24		Zinc and compounds (as Zn)	200	100	100
25	15972-60-8	Alachlor	—	1	1
26	309-00-2	Aldrin	1	1	1
27	1912-24-9	Atrazine	—	1	1
28	57-74-9	Chlordane	1	1	1

			Threshold for releases (column

No	CAS number	Pollutant (1)	to air (column 1a) kg/year	to water (column 1b) kg/year	to land (column 1c) kg/year
29	143-50-0	Chlordecone	1	1	1
30	470-90-6	Chlorfenvinphos	—	1	1
31	85535-84-8	Chloro-alkanes, C_{10}-C_{13}	—	1	1
32	2921-88-2	Chlorpyrifos	—	1	1
33	50-29-3	DDT	1	1	1
34	107-06-2	1,2-dichloroethane (EDC)	1 000	10	10
35	75-09-2	Dichloromethane (DCM)	1 000	10	10
36	60-57-1	Dieldrin	1	1	1
37	330-54-1	Diuron	—	1	1
38	115-29-7	Endosulphan	—	1	1
39	72-20-8	Endrin	1	1	1
40		Halogenated organic compounds	—	1 000	1 000
41	76-44-8	Heptachlor	1	1	1
42	118-74-1	Hexachlorobenzene (HCB)	10	1	1
43	87-68-3	Hexachlorobutadiene (HCBD)	—	1	1
44	608-73-1	1,2,3,4,5,6-hexachlorocyclohexane(HCH)	10	1	1
45	58-89-9	Lindane	1	1	1
46	2385-85-5	Mirex	1	1	1
47		PCDD + PCDF (dioxins + furans) (as Teq) (10)	0,0001	0,0001	0,0001
48	608-93-5	Pentachlorobenzene	1	1	1
49	87-86-5	Pentachlorophenol (PCP)	10	1	1
50	1336-36-3	Polychlorinated biphenyls	0,1	0,1	0,1
51	122-34-9	Simazine	—	1	1
52	127-18-4	Tetrachloroethylene (PER)	2 000	10	—
53	56-23-5	Tetrachloromethane (TCM)	100	1	—
54	12002-48-1	Trichlorobenzenes (TCBs) (all isomers)	10	1	—
55	71-55-6	1,1,1-trichloroethane	100	—	—
56	79-34-5	1,1,2,2-tetrachloroethane	50	—	—
57	79-01-6	Trichloroethylene	2 000	10	—
58	67-66-3	Trichloromethane	500	10	—
59	8001-35-2	Toxaphene	1	1	1
60	75-01-4	Vinyl chloride	1 000	10	10
61	120-12-7	Anthracene	50	1	1

No	CAS number	Pollutant (1)	Threshold for releases (column 1)		
			to air (column 1a) kg/year	to water (column 1b) kg/year	to land (column 1c) kg/year
62	71-43-2	Benzene	1 000	200 (as BTEX) (11)	200 (as BTEX) (11)
63		Brominated diphenylethers (PBDE) (12)	—	1	1
64		Nonylphenol and Nonylphenol ethoxylates (NP/NPEs)	—	1	1
65	100-41-4	Ethyl benzene	—	200 (as BTEX) (11)	200 (as BTEX) (11)
66	75-21-8	Ethylene oxide	1 000	10	1
67	34123-59-6	Isoproturon	—	1	1
68	91-20-3	Naphthalene	100	10	1
69		Organotin compounds(as total	—	50	50
70	117-81-7	Di-(2-ethyl hexyl) phthalate (DEHP)	10	1	1
71	108-95-2	Phenols (as total C) (13)	—	20	20
72		Polycyclic aromatic hydrocarbons	50	5	5
73	108-88-3	Toluene	—	200 (as BTEX) (11)	200 (as BTEX) (11)
74		Tributyltin and compounds	—	1	1
75		Triphenyltin and compound	—	1	1
76		Total organic carbon (TOC) (as total C or COD/3)	—	50 000	—
77	1582-09-8	Trifluralin	—	1	1
78	1330-20-7	Xylenes (17)	—	200 (as BTEX) (11)	200 (as BTEX) (11)
79		Chlorides (as total Cl)	—	2 million	2
80		Chlorine and inorganic com-	10 000	—	—
81	1332-21-4	Asbestos	1	1	1
82		Cyanides (as total CN)	—	50	5
83		Fluorides (as total F)	—	2 000	2 000
84		Fluorine and inorganic com-	5 000	—	—

85	74-90-8	Hydrogen cyanide (HCN)	200	—	—
86		Particulate matter (PM_{10})	50 000	—	—
87	1806-26-4	Octylphenols and Octylphenol ethoxylates	—	1	—
No	CAS number	Pollutant (1)	Threshold for releases (column 1)		
			to air (column 1a) kg/year	to water (column 1b) kg/year	to land (column 1c)
88	206-44-0	Fluoranthene	—	1	—
89	465-73-6	Isodrin	—	1	—
90	36355-1-8	Hexabromobiphenyl	0.1	0,1	0,1
91	191-24-2	Benzo(g,h,i)perylene		1	
92		Biochemical Oxygen Demand (expressed as BOD_5)	-	10,000	-
93		Chemical Oxygen Demand (expressed as COD)	-	20,000	-
94		Suspended Solids	-	20,000	-

(1) Unless otherwise specified any pollutant shall be reported as the total mass of that pollutant or, where the pollutant is a group of substances, as the total mass of the group.

(2) A hyphen (—) indicates that the parameter and medium in question do not trigger a reporting requirement.

(3) Total mass of hydrogen fluorocarbons: sum of HFC23, HFC32, HFC41, HFC4310mee, HFC125, HFC134, HFC134a, HFC152a, HFC143, HFC143a, HFC227ea, HFC236fa, HFC245ca, HFC365mfc.

(4) Total mass of perfluorocarbons: sum of CF_4, C_2F_6, C_3F_8, C_4F_{10}, c-C_4F_8, C_5F_{12}, C_6F_{14}.

(5) Total mass of substances including their isomers.

(6) Total mass of substances including their isomers.

(7) Total mass of substances including their isomers.

(8) All metals shall be reported as the total mass of the element in all chemical forms present in the release.

(9) Halogenated organic compounds which can be adsorbed to activated carbon expressed as chloride.

(10) Expressed as I-TEQ.

(11) Single pollutants are to be reported if the threshold for BTEX (the sum parameter of benzene, toluene, ethyl benzene, xylenes) is exceeded.

(12) Total mass of the following brominated diphenylethers: penta-BDE, octa-BDE and deca-BDE.

(13) Total mass of phenol and simple substituted phenols expressed as total carbon.

(14) Polycyclic aromatic hydrocarbons (PAHs) are to be measured for reporting of releases to air as benzo(a)pyrene (50-32-8), benzo(b)fluo- ranthene (205-99-2), benzo(k)fluoranthene (207-08-9), indeno(1,2,3-cd)pyrene (193-39-5).

(15) Total mass of tributyltin compounds, expressed as mass of tributyltin.

(16) Total mass of triphenyltin compounds, expressed as mass of triphenyltin.

(17) Total mass of xylene (ortho-xylene, meta-xylene, para-xylene).

Annex 3
ISIC Codes

ISIC Codes

Section	Divisions	Description	LBS Protocol Activities (Annex I)
A	01–03	Agriculture, forestry and fishing	Agriculture (19)
B	05–09	Mining and quarrying	Mining (10)
C	10–33	Manufacturing	Fertilizer production (2) Production and formulation of biocides (3) Pharmaceutical industry (4) Paper and paper-pulp industry (6) Cement production (7) Tanning industry (8) Metal industry (9) Textile industry (13) Electronic industry (14) Other sectors of the organic chemical industry (16) Other sectors of the inorganic chemical industry (17) Food processing (21)
D	35	Electricity, gas, steam and air conditioning supply	
E	36–39	Water supply; sewerage, waste management and remediation	Treatment and disposal of domestic waste water (24)
F	41–43	Construction	
G	45–47	Wholesale and retail trade; repair of motor vehicles and motorcycles	
H	49–53	Transportation and storage	
I	55–56	Accommodation and food service activities	
J	58–63	Information and communication	
K	64–66	Financial and insurance activities	
L	68	Real estate activities	
M	69–75	Professional, scientific and technical activities	
N	77–82	Administrative and support service activities	
O	84	Public administration and defence; compulsory social security	
P	85	Education	
Q	86–88	Human health and social work activities	
R	90–93	Arts, entertainment and recreation	
S	94–96	Other service activities	
T	97–98	Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	
U	99	Activities of extraterritorial organizations and bodies	

Annex 4
Indicative list of sector air pollutants

Indicative list of sector air pollutants

Pollutant no			1	2	3	4	5	6	7	8	9	10	11	14	15	16	17	18	19	20	21	22	23	24	26	28	29	33	34	35	36	39	41
		Pollutant name	Methane (CH_4)	Carbon monoxide (CO)	Carbon dioxide (CO_2)	Hydro-fluorocarbons (HFCs)	Nitrous oxide (N_2O)	Ammonia (NH_3)	Non-methane volatile organic compounds (NMVOC)	Nitrogen oxides (NO_x/NO_2)	Perfluorocarbons (PFCs)	Sulphur hexafluoride (SF_6)	Sulphur oxides (SO_x/SO_2)	Hydrochlorofluorocarbons (HCFCs)	Chlorofluorocarbons (CFCs)	Halons	Arsenic and compounds (as As)	Cadmium and compounds (as Cd)	Chromium and compounds(as Cr)	Copper and compounds (as Cu)	Mercury and compounds (as Hg)	Nickel and compounds (as Ni)	Lead and compounds (as Pb)	Zinc and compounds (as Zn)	Aldrin	Chlordane	Chlordecone	DDT	1,2-dichloroethane (EDC)	Dichloromethane (DCM)	Dieldrin	Endrin	Heptachlor
no	b	activity																															
1		**Energy sector**																															
	(a)	Mineral oil and gas refineries	☐	☐	☐	☐	☐	☐	☐	☐			☐	☐			☐	☐	☐	☐	☐	☐	☐	☐									
	(b)	Installations for gasification and liquefaction	☐	☐	☐	☐	☐	☐	☐	☐			☐	☐			☐	☐	☐	☐	☐	☐	☐	☐									
	(c)	Thermal power stations and other combustion installations	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐			☐	☐	☐	☐	☐	☐	☐	☐									
	(d)	Coke ovens	☐	☐	☐			☐	☐	☐			☐				☐	☐	☐	☐	☐	☐	☐	☐									
	(e)	Coal rolling mills	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐				☐	☐	☐	☐	☐	☐	☐	☐									
	(f)	Installations for the manufacture of coal products and solid smokeless fuel	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐				☐	☐	☐	☐	☐	☐	☐	☐									
2		**Production and processing of metals**																															
	(a)	Metal ore (including sulphide ore) roasting or sintering installations	☐	☐	☐		☐	☐	☐	☐			☐				☐	☐	☐	☐	☐	☐	☐	☐									
	(b)	Installations for the production of pig iron or steel (primary or secondary melting) including continuous casting	☐	☐	☐	☐	☐	☐	☐	☐			☐				☐	☐	☐	☐	☐	☐	☐	☐									
	(c)	Installations for the processing of ferrous metals	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐						☐			

	(d)	Ferrous metal foundries	□	□	□			□	□	□			□		□		□	□	□	□	□	□	□	□												
	(e)	Installations for the production of non-ferrous crude metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic processes and for the smelting, including the alloying, of non-ferrous metals, including recovered products (refining, foundry casting, etc.)	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□						□						
	(f)	Installations for surface treatment of metals and plastic materials using an electrolytic or chemical process	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□						□						

Pollutant no			42	44	45	46	47	48	49	50	52	53	54	55	56	57	58	59	60	61	62	66	68	70	72	80	81	84	85	86	90
		Pollutant name	Hexachlorobenzene (HCB)	1,2,3,4,5, 6 -hexachlorocyclohexane (HCH)	Lindane	Mirex	PCDD + PCDF (dioxins + furans) (as Teq)	Pentachlorobenzene	Pentachlorophenol (PCP)	Polychlorinated biphenyls (PCBs)	Tetrachloroethylene (PER)	Tetrachloromethane (TCM)	Trichlorobenzenes (TCBs) (all isomers)	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	Trichloroethylene	Trichloromethane	Toxaphene	Vinyl chloride	Anthracene	Benzene	Ethylene oxide	Naphthalene	Di-(2-ethyl hexyl) phthalate (DEHP)	Polycyclic aromatic hydrocarbons (PAHs)	Chlorine and inorganic compounds (as HCl)	Asbestos	Fluorine and inorganic compounds (as HF)	Hydrogen cyanide (HCN)	Particulate matter (PM_{10})	Hexabromobiphenyl
no	b	activity																													
1		**Energy sector**																													
	(a)	Mineral oil and gas refineries																			□				□	□				□	
	(b)	Installations for gasification and liquefaction																			□				□	□				□	
	(c)	Thermal power stations and other combustion installations					□									□					□				□	□				□	
	(d)	Coke ovens					□													□	□		□		□				□	□	
	(e)	Coal rolling mills																			□				□	□				□	
	(f)	Installations for the manufacture of coal products and solid smokeless fuel																			□				□	□				□	
2		**Production and processing of metals**																													
	(a)	Metal ore (including sulphide ore) roasting or sintering installations					□	□	□	□					□						□				□	□		□	□	□	
	(b)	Installations for the production of pig iron or steel (primary or secondary melting) including continuous casting					□	□	□	□					□					□	□		□		□	□		□	□	□	
	(c)	Installations for the processing of ferrous metals	□				□	□	□	□	□					□					□				□	□		□	□	□	
	(d)	Ferrous metal foundries					□													□	□		□		□	□		□	□	□	
	(e)	Installations for the production of non-ferrous crude metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic processes and for the smelting, including the alloying, of non-ferrous metals, including	□				□	□	□	□	□					□					□				□	□		□	□	□	

Pollutant no			42	44	45	46	47	48	49	50	52	53	54	55	56	57	58	59	60	61	62	66	68	70	72	80	81	84	85	86	90
		Pollutant name	Hexachlorobenzene (HCB)	1,2,3,4,5, 6 -hexachlorocyclohexane (HCH)	Lindane	Mirex	PCDD + PCDF (dioxins + furans) (as Teq)	Pentachlorobenzene	Pentachlorophenol (PCP)	Polychlorinated biphenyls (PCBs)	Tetrachloroethylene (PER)	Tetrachloromethane (TCM)	Trichlorobenzenes (TCBs) (all isomers)	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	Trichloroethylene	Trichloromethane	Toxaphene	Vinyl chloride	Anthracene	Benzene	Ethylene oxide	Naphthalene	Di-(2-ethyl hexyl) phthalate (DEHP)	Polycyclic aromatic hydrocarbons (PAHs)	Chlorine and inorganic compounds (as HCl)	Asbestos	Fluorine and inorganic compounds (as HF)	Hydrogen cyanide (HCN)	Particulate matter (PM_{10})	Hexabromobiphenyl
		recovered products (refining, foundry casting, etc.)																													
	(f)	Installations for surface treatment of metals and plastic materials using an electrolytic or chemical process	☐				☐	☐	☐	☐	☐					☐					☐			☐	☐	☐		☐	☐	☐	☐

Pollutant no			1	2	3	4	5	6	7	8	9	10	11	14	15	16	17	18	19	20	21	22	23	24	26	28	29	33	34	35	36	39	41
		Pollutant name	Methane (CH_4)	Carbon monoxide (CO)	Carbon dioxide (CO_2)	Hydro-fluorocarbons (HFCs)	Nitrous oxide (N_2O)	Ammonia (NH_3)	Non-methane volatile organic compounds (NMVOC)	Nitrogen oxides (NO_x/NO_2)	Perfluorocarbons (PFCs)	Sulphur hexafluoride (SF_6)	Sulphur oxides (SO_x/SO_2)	Hydrochlorofluorocarbons (HCFCs)	Chlorofluorocarbons (CFCs)	Halons	Arsenic and compounds (as As)	Cadmium and compounds (as Cd)	Chromium and compounds(as Cr)	Copper and compounds (as Cu)	Mercury and compounds (as Hg)	Nickel and compounds (as Ni)	Lead and compounds (as Pb)	Zinc and compounds (as Zn)	Aldrin	Chlordane	Chlordecone	DDT	1,2-dichloroethane (EDC)	Dichloromethane (DCM)	Dieldrin	Endrin	Heptachlor
no	b	activity																															
3		**Mineral industry**																															
	(a)	Underground mining and related operations	□	□	□					□			□				□	□	□	□		□	□	□								
	(b)	Opencast mining and quarrying	□	□	□					□			□				□	□	□	□		□	□	□								
	(c)	Installations for the production of cement clinker in rotary kilns, lime in rotary kilns, cement clinker or lime in other furnaces		□	□		□	□	□	□			□				□	□	□	□	□	□	□	□								
	(d)	Installations for the production of asbestos and the manufacture of asbestos-based products																															
	(e)	Installations for the manufacture of glass, including glass fibre		□	□	□	□	□	□	□			□				□	□	□	□	□	□	□	□								
	(f)	Installations for melting mineral substances, including the production of mineral fibres		□	□	□	□	□	□	□			□				□	□	□	□	□	□	□	□								
	(g)	Installations for the manufacture of ceramic products by firing, in particular roofing tiles, bricks, refractory bricks, tiles, stoneware or porcelain		□	□				□	□			□				□	□	□	□	□	□	□	□								
4		**Chemical industry**																															
	(a)	Chemical installations for the production on an	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□

Pollutant no			1	2	3	4	5	6	7	8	9	10	11	14	15	16	17	18	19	20	21	22	23	24	26	28	29	33	34	35	36	39	41
		Pollutant name	Methane (CH_4)	Carbon monoxide (CO)	Carbon dioxide (CO_2)	Hydro-fluorocarbons (HFCs)	Nitrous oxide (N_2O)	Ammonia (NH_3)	Non-methane volatile organic compounds (NMVOC)	Nitrogen oxides (NO_x/NO_2)	Perfluorocarbons (PFCs)	Sulphur hexafluoride (SF_6)	Sulphur oxides (SO_x/SO_2)	Hydrochlorofluorocarbons (HCFCs)	Chlorofluorocarbons (CFCs)	Halons	Arsenic and compounds (as As)	Cadmium and compounds (as Cd)	Chromium and compounds(as Cr)	Copper and compounds (as Cu)	Mercury and compounds (as Hg)	Nickel and compounds (as Ni)	Lead and compounds (as Pb)	Zinc and compounds (as Zn)	Aldrin	Chlordane	Chlordecone	DDT	1,2-dichloroethane (EDC)	Dichloromethane (DCM)	Dieldrin	Endrin	Heptachlor
		industrial scale of basic organic chemicals																															
	(b)	Chemical installations for the production on an industrial scale of basic inorganic chemicals	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□					□	□			
	(c)	Chemical installations for the production on an industrial scale of phosphorous-, nitrogen- or potassium-based fertilizers (simple or compound fertilizers)	□	□	□	□	□	□	□	□	□	□	□				□	□	□	□	□	□	□	□					□	□			
	(d)	Chemical installations for the production on an industrial scale of basic plant health products and of biocides			□	□	□	□	□	□			□				□	□	□	□	□	□	□	□					□	□	□	□	□
	(e)	Installations using a chemical or biological process for the production on an industrial scale of basic pharmaceutical products			□	□	□	□	□	□			□				□	□	□	□	□	□	□	□					□				
	(f)	Installations for the production on an industrial scale of explosives and pyrotechnic products			□	□	□	□	□	□			□				□	□	□	□	□	□	□	□					□	□			

Pollutant no			42	44	45	46	47	48	49	50	52	53	54	55	56	57	58	59	60	61	62	66	68	70	72	80	81	84	85	86	90
		Pollutant name	Hexachlorobenzene (HCB)	1,2,3,4,5, 6 -hexachlorocyclohexane (HCH)	Lindane	Mirex	PCDD + PCDF (dioxins + furans) (as Teq)	Pentachlorobenzene	Pentachlorophenol (PCP)	Polychlorinated biphenyls (PCBs)	Tetrachloroethylene (PER)	Tetrachloromethane (TCM)	Trichlorobenzenes (TCBs) (all isomers)	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	Trichloroethylene	Trichloromethane	Toxaphene	Vinyl chloride	Anthracene	Benzene	Ethylene oxide	Naphthalene	Di-(2-ethyl hexyl) phthalate (DEHP)	Polycyclic aromatic hydrocarbons (PAHs)	Chlorine and inorganic compounds (as HCl)	Asbestos	Fluorine and inorganic compounds (as HF)	Hydrogen cyanide (HCN)	Particulate matter (PM_{10})	Hexabromobiphenyl
no	b	activity																													
3		**Mineral industry**																													
	(a)	Underground mining and related operations																								□				□	
	(b)	Opencast mining and quarrying																								□				□	
	(c)	Installations for the production of cement clinker in rotary kilns, lime in rotary kilns, cement clinker or lime in other furnaces					□			□										□	□		□	□	□	□		□	□	□	
	(d)	Installations for the production of asbestos and the manufacture of asbestos-based products														□										□	□			□	
	(e)	Installations for the manufacture of glass, including glass fibre					□			□											□				□	□		□		□	
	(f)	Installations for melting mineral substances, including the production of mineral fibres					□			□											□				□	□		□		□	
	(g)	Installations for the manufacture of ceramic products by firing, in particular roofing tiles, bricks, refractory bricks, tiles, stoneware or porcelain																			□				□	□		□		□	
4		**Chemical industry**																													
	(a)	Chemical installations for the production on an industrial scale of basic organic chemicals	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□		□	□	□	
	(b)	Chemical installations for the production on an industrial scale of basic inorganic chemicals	□	□			□	□	□		□	□	□	□	□	□	□		□		□				□	□		□	□	□	
	(c)	Chemical installations for the production on an industrial scale of phosphorous-, nitrogen- or potassium-based fertilizers (simple or compound fertilizers)	□	□			□	□	□		□	□	□	□	□	□	□		□							□				□	
	(d)	Chemical installations for the production on an industrial scale of basic plant health products and of biocides			□	□		□							□	□		□	□	□		□	□	□		□				□	
	(e)	Installations using a chemical or biological process for the production on an industrial scale of basic pharmaceutical products					□	□			□	□			□	□	□		□					□		□			□	□	
	(f)	Installations for the production on an industrial scale of explosives and pyrotechnic products						□								□			□							□				□	

Pollutant no			1	2	3	4	5	6	7	8	9	10	11	14	15	16	17	18	19	20	21	22	23	24	26	28	29	33	34	35	36	39	41
		Pollutant name	Methane (CH_4)	Carbon monoxide (CO)	Carbon dioxide (CO_2)	Hydro-fluorocarbons (HFCs)	Nitrous oxide (N_2O)	Ammonia (NH_3)	Non-methane volatile organic compounds (NMVOC)	Nitrogen oxides (NO_x/NO_2)	Perfluorocarbons (PFCs)	Sulphur hexafluoride (SF_6)	Sulphur oxides (SO_x/SO_2)	Hydrochlorofluorocarbons (HCFCs)	Chlorofluorocarbons (CFCs)	Halons	Arsenic and compounds (as As)	Cadmium and compounds (as Cd)	Chromium and compounds(as Cr)	Copper and compounds (as Cu)	Mercury and compounds (as Hg)	Nickel and compounds (as Ni)	Lead and compounds (as Pb)	Zinc and compounds (as Zn)	Aldrin	Chlordane	Chlordecone	DDT	1,2-dichloroethane (EDC)	Dichloromethane (DCM)	Dieldrin	Endrin	Heptachlor
no	b	activity																															
5		**Waste and wastewater management**																															
	(a)	Installations for the disposal or recovery of hazardous waste	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□						□	□	□	□
	(b)	Installations for the incineration of non-hazardous waste	□	□	□		□	□	□	□			□				□	□	□	□	□	□	□	□									
	(c)	Installations for the disposal of non-hazardous waste	□		□	□	□	□	□	□		□					□	□	□	□	□	□	□	□									
	(d)	Landfills	□	□	□		□	□		□			□				□	□	□	□	□	□		□									
	(e)	Installations for the disposal or recycling of animal carcasses and animal waste	□		□	□		□		□			□																				
	(f)	Urban waste-water treatment plants	□	□	□		□	□	□	□			□																□	□			
	(g)	Independently operated industrial waste-water treatment plants which serve one or more activities	□	□	□	□	□	□	□	□	□	□	□																				
6		**Paper and wood production and processing**																															
	(a)	Industrial plants for the production of pulp from timber or similar fibrous materials	□	□	□	□	□	□	□	□			□				□	□	□	□	□	□	□	□									
	(b)	Industrial plants for the production of paper and board and other primary wood products (such as chipboard, fibreboard and plywood)	□	□	□	□	□	□	□	□			□				□	□		□	□	□	□	□									
	(c)	Industrial plants for the preservation of wood and wood products with chemicals						□	□								□		□	□													
7		**Intensive livestock production and aquaculture**																															
	(a)	Installations for the intensive rearing of poultry or pigs	□				□	□																									
	(b)	Intensive aquaculture																															

Pollutant no			42	44	45	46	47	48	49	50	52	53	54	55	56	57	58	59	60	61	62	66	68	70	72	80	81	84	85	86	90
		Pollutant name	Hexachlorobenzene (HCB)	1,2,3,4,5, 6 -hexachlorocyclohexane (HCH)	Lindane	Mirex	PCDD + PCDF (dioxins + furans) (as Teq)	Pentachlorobenzene	Pentachlorophenol (PCP)	Polychlorinated biphenyls (PCBs)	Tetrachloroethylene (PER)	Tetrachloromethane (TCM)	Trichlorobenzenes (TCBs) (all isomers)	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	Trichloroethylene	Trichloromethane	Toxaphene	Vinyl chloride	Anthracene	Benzene	Ethylene oxide	Naphthalene	Di-(2-ethyl hexyl) phthalate (DEHP)	Polycyclic aromatic hydrocarbons (PAHs)	Chlorine and inorganic compounds (as HCl)	Asbestos	Fluorine and inorganic compounds (as HF)	Hydrogen cyanide (HCN)	Particulate matter (PM_{10})	Hexabromobiphenyl
no	b	activity																													
5		**Waste and wastewater management**																													
	(a)	Installations for the disposal or recovery of hazardous waste	□	□			□	□			□	□	□		□	□	□		□		□	□	□	□	□	□		□	□	□	
	(b)	Installations for the incineration of non-hazardous waste	□				□	□			□					□					□				□	□		□		□	
	(c)	Installations for the disposal of non-hazardous waste	□				□	□				□		□																□	
	(d)	Landfills	□				□																							□	
	(e)	Installations for the disposal or recycling of animal carcasses and animal waste					□	□																	□					□	
	(f)	Urban waste-water treatment plants	□					□			□	□		□		□	□				□										
	(g)	Independently operated industrial wastewater treatment plants which serve one or more activities						□			□	□	□	□		□	□				□				□	□		□	□		
6		**Paper and wood production and processing**																													
	(a)	Industrial plants for the production of pulp from timber or similar fibrous materials					□				□					□	□				□					□		□		□	
	(b)	Industrial plants for the production of paper and board and other primary wood products (such as chipboard, fibreboard and plywood)					□				□					□	□				□			□		□		□		□	
	(c)	Industrial plants for the preservation of wood and wood products with chemicals									-									□	□		□		□					□	
7		**Intensive livestock production and aquaculture**																													
	(a)	Installations for the intensive rearing of poultry or pigs																												□	
	(b)	Intensive aquaculture																													

Pollutant no			1	2	3	4	5	6	7	8	9	10	11	14	15	16	17	18	19	20	21	22	23	24	26	28	29	33	34	35	36	39	41
		Pollutant name	Methane (CH_4)	Carbon monoxide (CO)	Carbon dioxide (CO_2)	Hydro-fluorocarbons (HFCs)	Nitrous oxide (N_2O)	Ammonia (NH_3)	Non-methane volatile organic compounds (NMVOC)	Nitrogen oxides (NO_x/NO_2)	Perfluorocarbons (PFCs)	Sulphur hexafluoride (SF_6)	Sulphur oxides (SO_x/SO_2)	Hydrochlorofluorocarbons (HCFCs)	Chlorofluorocarbons (CFCs)	Halons	Arsenic and compounds (as As)	Cadmium and compounds (as Cd)	Chromium and compounds(as Cr)	Copper and compounds (as Cu)	Mercury and compounds (as Hg)	Nickel and compounds (as Ni)	Lead and compounds (as Pb)	Zinc and compounds (as Zn)	Aldrin	Chlordane	Chlordecone	DDT	1,2-dichloroethane (EDC)	Dichloromethane (DCM)	Dieldrin	Endrin	Heptachlor
no	b	activity																															
8		**Animal and vegetable products from the food and beverage sector**																															
	(a)	Slaughterhouses	□	□	□	□	□	□	□	□			□				□	□			□	□								□			
	(b)	Treatment and processing intended for the production of food and beverage products from animal raw materials (other than milk) and vegetable raw materials	□	□	□	□	□	□	□	□			□				□	□			□	□								□			
	(c)	Treatment and processing of milk	□	□	□	□	□	□	□	□			□				□	□			□	□								□			
9		**Other activities**																															
	(a)	Plants for the pretreatment (operations such as washing, bleaching, mercerization) or dyeing of fibres or textiles		□	□			□	□	□			□																				
	(b)	Plants for the tanning of hides and skins			□			□	□	□																				□			
	(c)	Installations for the surface treatment of substances, objects or products using organic solvents, in particular for dressing, printing, coating, degreasing, waterproofing, sizing, painting, cleaning or impregnating		□	□	□	□	□	□	□	□	□	□					□	□	□	□	□	□	□	□					□	□			
	(d)	Installations for the production of carbon (hard-burnt coal) or electro-graphite by means of incineration or graphitization		□					□	□			□							□	□		□										
	(e)	Installations for the building of, and painting or removal of paint from ships		□	□	□	□	□	□	□	□	□	□				□	□	□	□	□	□	□	□					□	□			

Pollutant no			42	44	45	46	47	48	49	50	52	53	54	55	56	57	58	59	60	61	62	66	68	70	72	80	81	84	85	86	90
		Pollutant name	Hexachlorobenzene (HCB)	1,2,3,4,5, 6 -hexachlorocyclohexane (HCH)	Lindane	Mirex	PCDD + PCDF (dioxins + furans) (as Teq)	Pentachlorobenzene	Pentachlorophenol (PCP)	Polychlorinated biphenyls (PCBs)	Tetrachloroethylene (PER)	Tetrachloromethane (TCM)	Trichlorobenzenes (TCBs) (all isomers)	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	Trichloroethylene	Trichloromethane	Toxaphene	Vinyl chloride	Anthracene	Benzene	Ethylene oxide	Naphthalene	Di-(2-ethyl hexyl) phthalate (DEHP)	Polycyclic aromatic hydrocarbons (PAHs)	Chlorine and inorganic compounds (as HCl)	Asbestos	Fluorine and inorganic compounds (as HF)	Hydrogen cyanide (HCN)	Particulate matter (PM_{10})	Hexabromobiphenyl
no	b	activity																													
8		**Animal and vegetable products from the food and beverage sector**																													
	(a)	Slaughterhouses					□	□																		□				□	
	(b)	Treatment and processing intended for the production of food and beverage products from animal raw materials (other than milk) and vegetable raw materials					□	□																		□				□	
	(c)	Treatment and processing of milk					□	□																		□				□	
9		**Other activities**																													
	(a)	Plants for the pre-treatment (operations such as washing, bleaching, mercerization) or dyeing of fibres or textiles									□					□								□					□	□	
	(b)	Plants for the tanning of hides and skins									□																				
	(c)	Installations for the surface treatment of substances, objects or products using organic solvents, in particular for dressing, printing, coating, degreasing, waterproofing, sizing, painting, cleaning or impregnating	□	□			□	□	□		□	□	□	□		□	□				□			□	□	□				□	
	(d)	Installations for the production of carbon (hard-burnt coal) or electro-graphite by means of incineration or graphitization																			□				□			□		□	
	(e)	Installations for the building of, and painting or removal of paint from ships					□			□				□		□	□				□			□	□	□		□		□	

Annex V
Indicative list of sector water pollutants*

Indicative list of sector water pollutants*

Pollutant no			12	13	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
		Pollutant name	Total nitrogen	Total phosphorus	Arsenic and compounds (as	Cadmium and compounds	Chromium and	Copper and compounds (as	Mercury and compounds (as	Nickel and compounds (as	Lead and compounds (as	Zinc and compounds (as	Alachlor	Aldrin	Atrazine	Chlordane	Chlordecone	Chlorfenvinphos	Chloro-alkanes, C_{10}-C_{13}	Chlorpyrifos	DDT	1,2-dichloroethane (EDC)	Dichloromethane (DCM)	Dieldrin	Diuron	Endosulphan	Endrin	Halogenated organic	Heptachlor	Hexachlorobenzene (HCB)	Hexachlorobutadiene	1,2,3,4,5, 6 -	Lindane	Mirex	PCDD + PCDF (dioxins +	Pentachlorobenzene	Pentachlorophenol (PCP)	Polychlorinated biphenyls
no	b	activity																																				
1		**Energy sector**																																				
	(a)	Mineral oil and gas refineries	□	□	□	□	□	□	□	□	□	□											□					□							□	□		
	(b)	Installations for gasification and liquefaction	□	□	□	□	□	□	□	□	□	□											□					□							□	□		
	(c)	Thermal power stations and other combustion installations	□	□	□	□	□	□	□	□	□	□																□							□			
	(d)	Coke ovens	□	□	□				□		□																	□							□		□	
	(e)	Coal rolling mills																																				
	(f)	Installations for the manufacture of coal products and solid smokeless fuel	□	□	□	□	□	□	□	□	□	□							□				□					□										
2		**Production and**																																				

Pollutant no			12	13	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
		Pollutant name	Total nitrogen	Total phosphorus	Arsenic and compounds (as	Cadmium and compounds	Chromium and	Copper and compounds (as	Mercury and compounds (as	Nickel and compounds (as	Lead and compounds (as	Zinc and compounds (as	Alachlor	Aldrin	Atrazine	Chlordane	Chlordecone	Chlorfenvinphos	Chloro-alkanes, C_{10}-C_{13}	Chlorpyrifos	DDT	1,2-dichloroethane (EDC)	Dichloromethane (DCM)	Dieldrin	Diuron	Endosulphan	Endrin	Halogenated organic	Heptachlor	Hexachlorobenzene (HCB)	Hexachlorobutadiene	1,2,3,4,5, 6 -	Lindane	Mirex	PCDD + PCDF (dioxins +	Pentachlorobenzene	Pentachlorophenol (PCP)	Polychlorinated biphenyls
		processing of metals																																				
	(a)	Metal ore (including sulphide ore) roasting or sintering installations	□	□	□	□	□	□	□	□	□	□																□										
	(b)	Installations for the production of pig iron or steel (primary or secondary melting) including continuous casting	□	□	□	□	□	□	□	□	□	□																□										
	(c)	Installations for the processing of ferrous metals	□	□	□	□	□	□	□	□	□	□																□										
	(d)	Ferrous metal foundries	□	□	□	□	□	□	□	□	□	□																										
	(e)	Installations for the production of non-ferrous crude	□	□	□	□	□	□	□	□	□	□																□										

Pollutant no			12	13	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
		Pollutant name	Total nitrogen	Total phosphorus	Arsenic and compounds (as	Cadmium and compounds	Chromium and	Copper and compounds (as	Mercury and compounds (as	Nickel and compounds (as	Lead and compounds (as	Zinc and compounds (as	Alachlor	Aldrin	Atrazine	Chlordane	Chlordecone	Chlorfenvinphos	Chloro-alkanes, C_{10}-C_{13}	Chlorpyrifos	DDT	1,2-dichloroethane (EDC)	Dichloromethane (DCM)	Dieldrin	Diuron	Endosulphan	Endrin	Halogenated organic	Heptachlor	Hexachlorobenzene (HCB)	Hexachlorobutadiene	1,2,3,4,5, 6 -	Lindane	Mirex	PCDD + PCDF (dioxins +	Pentachlorobenzene	Pentachlorophenol (PCP)	Polychlorinated biphenyls
		metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic processes and for the smelting, including the alloying, of non-ferrous metals, including recovered products (refining, foundry casting, etc.)																																				
	(f)	Installations for surface treatment of metals and plastic materials using an electrolytic	□	□	□	□	□	□	□	□	□	□																□										

Pollutant no			12	13	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
		Pollutant name	Total nitrogen	Total phosphorus	Arsenic and compounds (as	Cadmium and compounds	Chromium and	Copper and compounds (as	Mercury and compounds (as	Nickel and compounds (as	Lead and compounds (as	Zinc and compounds (as	Alachlor	Aldrin	Atrazine	Chlordane	Chlordecone	Chlorfenvinphos	Chloro-alkanes, C_{10}-C_{13}	Chlorpyrifos	DDT	1,2-dichloroethane (EDC)	Dichloromethane (DCM)	Dieldrin	Diuron	Endosulphan	Endrin	Halogenated organic	Heptachlor	Hexachlorobenzene (HCB)	Hexachlorobutadiene	1,2,3,4,5, 6 -	Lindane	Mirex	PCDD + PCDF (dioxins +	Pentachlorobenzene	Pentachlorophenol (PCP)	Polychlorinated biphenyls
		or chemical process																																				

Pollutant no			51	52	53	54	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	81	82	83	87	88	89	90	91
		Pollutant name	Simazine	Tetrachloroethylene (PER)	Tetrachloromethane (TCM)	Trichlorobenzenes (TCBs) (all isomers)	Trichloroethylene	Trichloromethane	Toxaphene	Vinyl chloride	Anthracene	Benzene	Brominated diphenylethers (PBDE)	Nonylphenol and Nonylphenol	Ethyl benzene	Ethylene oxide	Isoproturon	Naphthalene	Organotin compounds (as total Sn)	Di-(2-ethyl hexyl) phthalate (DEHP)	Phenols (as total C)	Polycyclic aromatic hydrocarbons (PAHs)	Toluene	Tributyltin and compounds	Triphenyltin and compounds	Total organic carbon (TOC) (as total C or	Trifluralin	Xylenes	Chlorides (as total Cl)	Asbestos	Cyanides (as total CN)	Fluorides (as total F)	Octylphenols and Octylphenol	Fluoranthene	Isodrin	Hexabromobiphenyl	Benzo(g,h,i)perylene
no	b	activity																																			
1		**Energy sector**																																			
	(a)	Mineral oil and gas refineries										□			□						□	□	□			□		□	□		□	□		□			□
	(b)	Installations for gasification and liquefaction										□			□						□	□	□			□		□	□		□	□		□			□
	(c)	Thermal power stations and other combustion installations																			□	□				□			□			□		□			□
	(d)	Coke ovens										□			□					□	□	□	□			□		□	□		□	□		□			□
	(e)	Coal rolling mills																																			
	(f)	Installations for the manufacture of coal products and solid smokeless fuel													□						□	□	□			□		□	□		□	□		□			□

Pollutant no		Pollutant name	51 Simazine	52 Tetrachloroethylene (PER)	53 Tetrachloromethane (TCM)	54 Trichlorobenzenes (TCBs) (all isomers)	57 Trichloroethylene	58 Trichloromethane	59 Toxaphene	60 Vinyl chloride	61 Anthracene	62 Benzene	63 Brominated diphenylethers (PBDE)	64 Nonylphenol and Nonylphenol	65 Ethyl benzene	66 Ethylene oxide	67 Isoproturon	68 Naphthalene	69 Organotin compounds (as total Sn)	70 Di-(2-ethyl hexyl) phthalate (DEHP)	71 Phenols (as total C)	72 Polycyclic aromatic hydrocarbons (PAHs)	73 Toluene	74 Tributyltin and compounds	75 Triphenyltin and compounds	76 Total organic carbon (TOC) (as total C or	77 Trifluralin	78 Xylenes	79 Chlorides (as total Cl)	81 Asbestos	82 Cyanides (as total CN)	83 Fluorides (as total F)	87 Octylphenols and Octylphenol	88 Fluoranthene	89 Isodrin	90 Hexabromobiphenyl	91 Benzo(g,h,i)perylene
2		**Production and processing of metals**																																		
	(a)	Metal ore (including sulphide ore) roasting or sintering installations																			□	□				□			□		□		□			□
	(b)	Installations for the production of pig iron or steel (primary or secondary melting) including continuous casting																			□	□				□			□		□		□			□
	(c)	Installations for the processing of ferrous metals																			□	□				□			□		□		□			□
	(d)	Ferrous metal foundries																			□	□				□			□		□		□			□

Pollutant no			51	52	53	54	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	81	82	83	87	88	89	90	91
		Pollutant name	Simazine	Tetrachloroethylene (PER)	Tetrachloromethane (TCM)	Trichlorobenzenes (TCBs) (all isomers)	Trichloroethylene	Trichloromethane	Toxaphene	Vinyl chloride	Anthracene	Benzene	Brominated diphenylethers (PBDE)	Nonylphenol and Nonylphenol	Ethyl benzene	Ethylene oxide	Isoproturon	Naphthalene	Organotin compounds (as total Sn)	Di-(2-ethyl hexyl) phthalate (DEHP)	Phenols (as total C)	Polycyclic aromatic hydrocarbons (PAHs)	Toluene	Tributyltin and compounds	Triphenyltin and compounds	Total organic carbon (TOC) (as total C or	Trifluralin	Xylenes	Chlorides (as total Cl)	Asbestos	Cyanides (as total CN)	Fluorides (as total F)	Octylphenols and Octylphenol	Fluoranthene	Isodrin	Hexabromobiphenyl	Benzo(g,h,i)perylene
	(e)	Installations for the production of non-ferrous crude metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic processes and for the smelting, including the alloying, of non-ferrous metals, including recovered products (refining, foundry casting, etc.)																			□	□				□			□		□	□		□			□
	(f)	Installations for surface treatment of metals and																		□	□	□				□			□		□	□		□			□

Pollutant no			51	52	53	54	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	81	82	83	87	88	89	90	91
		Pollutant name	Simazine	Tetrachloroethylene (PER)	Tetrachloromethane (TCM)	Trichlorobenzenes (TCBs) (all isomers)	Trichloroethylene	Trichloromethane	Toxaphene	Vinyl chloride	Anthracene	Benzene	Brominated diphenylethers (PBDE)	Nonylphenol and Nonylphenol	Ethyl benzene	Ethylene oxide	Isoproturon	Naphthalene	Organotin compounds (as total Sn)	Di-(2-ethyl hexyl) phthalate (DEHP)	Phenols (as total C)	Polycyclic aromatic hydrocarbons (PAHs)	Toluene	Tributyltin and compounds	Triphenyltin and compounds	Total organic carbon (TOC) (as total C or	Trifluralin	Xylenes	Chlorides (as total Cl)	Asbestos	Cyanides (as total CN)	Fluorides (as total F)	Octylphenols and Octylphenol	Fluoranthene	Isodrin	Hexabromobiphenyl	Benzo(g,h,i)perylene
		plastic materials using an electrolytic or chemical process																																			

Pollutant no			12	13	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
		Pollutant name	Total nitrogen	Total phosphorus	Arsenic and compounds (as As)	Cadmium and compounds (as Cd)	Chromium and compounds(as Cr)	Copper and compounds (as Cu)	Mercury and compounds (as Hg)	Nickel and compounds (as Ni)	Lead and compounds (as Pb)	Zinc and compounds (as Zn)	Alachlor	Aldrin	Atrazine	Chlordane	Chlordecone	Chlorfenvinphos	Chloro-alkanes, C_{10}-C_{13}	Chlorpyrifos	DDT	1,2-dichloroethane (EDC)	Dichloromethane (DCM)	Dieldrin	Diuron	Endosulphan	Endrin	Halogenated organic compounds	Heptachlor	Hexachlorobenzene (HCB)	Hexachlorobutadiene (HCBD)	1,2,3,4,5, 6 -	Lindane	Mirex	PCDD + PCDF (dioxins + furans)	Pentachlorobenzene	Pentachlorophenol (PCP)	Polychlorinated biphenyls (PCBs)
no	b	activity																																				
3		**Mineral industry**																																				
	(a)	Underground mining and related operations	□	□	□	□	□	□		□	□	□																										
	(b)	Opencast mining and quarrying	□	□	□	□	□	□		□	□	□																										
	(c)	Installations for the production of cement clinker in rotary kilns, lime in rotary kilns, cement clinker or lime in other furnaces			□	□	□		□	□	□																							□			
	(d)	Installations for the production of asbestos and the manufacture of asbestos-based products					□																					□										
	(e)	Installations for the	□	□	□	□	□	□	□	□	□	□																							□	□		

Pollutant no			12	13	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
		Pollutant name	Total nitrogen	Total phosphorus	Arsenic and compounds (as As)	Cadmium and compounds (as Cd)	Chromium and compounds(as Cr)	Copper and compounds (as Cu)	Mercury and compounds (as Hg)	Nickel and compounds (as Ni)	Lead and compounds (as Pb)	Zinc and compounds (as Zn)	Alachlor	Aldrin	Atrazine	Chlordane	Chlordecone	Chlorfenvinphos	Chloro-alkanes, C_{10}-C_{13}	Chlorpyrifos	DDT	1,2-dichloroethane (EDC)	Dichloromethane (DCM)	Dieldrin	Diuron	Endosulphan	Endrin	Halogenated organic compounds	Heptachlor	Hexachlorobenzene (HCB)	Hexachlorobutadiene (HCBD)	1,2,3,4,5, 6 -	Lindane	Mirex	PCDD + PCDF (dioxins + furans)	Pentachlorobenzene	Pentachlorophenol (PCP)	Polychlorinated biphenyls (PCBs)
		manufacture of glass, including glass fibre																																				
	(f)	Installations for melting mineral substances, including the production of mineral fibres	□	□	□	□	□	□	□	□	□	□																							□			
	(g)	Installations for the manufacture of ceramic products by firing, in particular roofing tiles, bricks, refractory bricks, tiles, stoneware or porcelain	□	□	□	□	□	□	□	□	□	□																□										
4		**Chemical industry**																																				
	(a)	Chemical installations for the production on	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□

Pollutant no		12	13	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
		Pollutant name	Total nitrogen	Total phosphorus	Arsenic and compounds (as As)	Cadmium and compounds (as Cd)	Chromium and compounds(as Cr)	Copper and compounds (as Cu)	Mercury and compounds (as Hg)	Nickel and compounds (as Ni)	Lead and compounds (as Pb)	Zinc and compounds (as Zn)	Alachlor	Aldrin	Atrazine	Chlordane	Chlordecone	Chlorfenvinphos	Chloro-alkanes, C_{10}-C_{13}	Chlorpyrifos	DDT	1,2-dichloroethane (EDC)	Dichloromethane (DCM)	Dieldrin	Diuron	Endosulphan	Endrin	Halogenated organic compounds	Heptachlor	Hexachlorobenzene (HCB)	Hexachlorobutadiene (HCBD)	1,2,3,4,5, 6 -	Lindane	Mirex	PCDD + PCDF (dioxins + furans)	Pentachlorobenzene	Pentachlorophenol (PCP)	Polychlorinated biphenyls (PCBs)
		an industrial scale of basic organic chemicals																																			
	(b)	Chemical installations for the production on an industrial scale of basic inorganic chemicals	□	□	□	□	□	□	□	□	□	□										□	□					□		□	□	□			□	□		
	(c)	Chemical installations for the production on an industrial scale of phosphorous-, nitrogen- or potassium-based fertilizers (simple or compound fertilizers)	□	□	□	□	□	□	□	□	□	□										□	□					□				□			□	□	□	
	(d)	Chemical installations for the production on	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□		□	□	□	□	□	□	□	□	□			□	□	□	□	□	□	□

Pollutant no		12	13	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
		Pollutant name	Total nitrogen	Total phosphorus	Arsenic and compounds (as As)	Cadmium and compounds (as Cd)	Chromium and compounds(as Cr)	Copper and compounds (as Cu)	Mercury and compounds (as Hg)	Nickel and compounds (as Ni)	Lead and compounds (as Pb)	Zinc and compounds (as Zn)	Alachlor	Aldrin	Atrazine	Chlordane	Chlordecone	Chlorfenvinphos	Chloro-alkanes, C_{10}-C_{13}	Chlorpyrifos	DDT	1,2-dichloroethane (EDC)	Dichloromethane (DCM)	Dieldrin	Diuron	Endosulphan	Endrin	Halogenated organic compounds	Heptachlor	Hexachlorobenzene (HCB)	Hexachlorobutadiene (HCBD)	1,2,3,4,5, 6 -	Lindane	Mirex	PCDD + PCDF (dioxins + furans)	Pentachlorobenzene	Pentachlorophenol (PCP)	Polychlorinated biphenyls (PCBs)
		an industrial scale of basic plant health products and of biocides																																			
	(e)	Installations using a chemical or biological process for the production on an industrial scale of basic pharmaceutical products	□	□	□	□	□	□	□	□	□	□										□						□			□			□	□		
	(f)	Installations for the production on an industrial scale of explosives and pyrotechnic products	□	□	□	□	□	□	□	□	□	□										□	□					□			□			□	□		

Pollutant no			51	52	53	54	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	81	82	83	87	88	89	90	91
		Pollutant name	Simazine	Tetrachloroethylene (PER)	Tetrachloromethane (TCM)	Trichlorobenzenes (TCBs) (all	Trichloroethylene	Trichloromethane	Toxaphene	Vinyl chloride	Anthracene	Benzene	Brominated diphenylethers (PBDE)	Nonylphenol and Nonylphenol	Ethyl benzene	Ethylene oxide	Isoproturon	Naphthalene	Organotin compounds (as total Sn)	Di-(2-ethyl hexyl) phthalate (DEHP)	Phenols (as total C)	Polycyclic aromatic hydrocarbons	Toluene	Tributyltin and compounds	Triphenyltin and compounds	Total organic carbon (TOC) (as total	Trifluralin	Xylenes	Chlorides (as total Cl)	Asbestos	Cyanides (as total CN)	Fluorides (as total F)	Octylphenols and Octylphenol	Fluoranthene	Isodrin	Hexabromobiphenyl	Benzo(g,h,i)perylene
no	b	activity																																			
3		**Mineral industry**																																			
	(a)	Underground mining and related operations																								□			□								
	(b)	Opencast mining and quarrying																								□			□								
	(c)	Installations for the production of cement clinker in rotary kilns, lime in rotary kilns, cement clinker or lime in other furnaces																			□					□											
	(d)	Installations for the production of asbestos and the manufacture of asbestos-based products																								□				□			□				

Pollutant no		Pollutant name	51 Simazine	52 Tetrachloroethylene (PER)	53 Tetrachloromethane (TCM)	54 Trichlorobenzenes (TCBs) (all	57 Trichloroethylene	58 Trichloromethane	59 Toxaphene	60 Vinyl chloride	61 Anthracene	62 Benzene	63 Brominated diphenylethers (PBDE)	64 Nonylphenol and Nonylphenol	65 Ethyl benzene	66 Ethylene oxide	67 Isoproturon	68 Naphthalene	69 Organotin compounds (as total Sn)	70 Di-(2-ethyl hexyl) phthalate (DEHP)	71 Phenols (as total C)	72 Polycyclic aromatic hydrocarbons	73 Toluene	74 Tributyltin and compounds	75 Triphenyltin and compounds	76 Total organic carbon (TOC) (as total	77 Trifluralin	78 Xylenes	79 Chlorides (as total Cl)	81 Asbestos	82 Cyanides (as total CN)	83 Fluorides (as total F)	87 Octylphenols and Octylphenol	88 Fluoranthene	89 Isodrin	90 Hexabromobiphenyl	91 Benzo(g,h,i)perylene
	(e)	Installations for the manufacture of glass, including glass fibre										□			□						□		□					□	□		□	□	□				
	(f)	Installations for melting mineral substances, including the production of mineral fibres										□			□						□		□					□	□		□	□					
	(g)	Installations for the manufacture of ceramic products by firing, in particular roofing tiles, bricks, refractory bricks, tiles, stoneware or porcelain																											□				□				
4		**Chemical industry**																																			
	(a)	Chemical installations	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□

Pollutant no			51	52	53	54	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	81	82	83	87	88	89	90	91
		Pollutant name	Simazine	Tetrachloroethylene (PER)	Tetrachloromethane (TCM)	Trichlorobenzenes (TCBs) (all	Trichloroethylene	Trichloromethane	Toxaphene	Vinyl chloride	Anthracene	Benzene	Brominated diphenylethers (PBDE)	Nonylphenol and Nonylphenol	Ethyl benzene	Ethylene oxide	Isoproturon	Naphthalene	Organotin compounds (as total Sn)	Di-(2-ethyl hexyl) phthalate (DEHP)	Phenols (as total C)	Polycyclic aromatic hydrocarbons	Toluene	Tributyltin and compounds	Triphenyltin and compounds	Total organic carbon (TOC) (as total	Trifluralin	Xylenes	Chlorides (as total Cl)	Asbestos	Cyanides (as total CN)	Fluorides (as total F)	Octylphenols and Octylphenol	Fluoranthene	Isodrin	Hexabromobiphenyl	Benzo(g,h,i)perylene
		for the production on an industrial scale of basic organic chemicals																																			
	(b)	Chemical installations for the production on an industrial scale of basic inorganic chemicals										□		□	□						□	□	□			□		□	□	□	□	□	□			□
	(c)	Chemical installations for the production on an industrial scale of phosphorous-, nitrogen- or potassium-based fertilizers (simple or compound fertilizers)			□	□	□	□				□		□	□						□	□	□			□		□	□		□	□	□			□

Pollutant no			51	52	53	54	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	81	82	83	87	88	89	90	91
		Pollutant name	Simazine	Tetrachloroethylene (PER)	Tetrachloromethane (TCM)	Trichlorobenzenes (TCBs) (all	Trichloroethylene	Trichloromethane	Toxaphene	Vinyl chloride	Anthracene	Benzene	Brominated diphenylethers (PBDE)	Nonylphenol and Nonylphenol	Ethyl benzene	Ethylene oxide	Isoproturon	Naphthalene	Organotin compounds (as total Sn)	Di-(2-ethyl hexyl) phthalate (DEHP)	Phenols (as total C)	Polycyclic aromatic hydrocarbons	Toluene	Tributyltin and compounds	Triphenyltin and compounds	Total organic carbon (TOC) (as total	Trifluralin	Xylenes	Chlorides (as total Cl)	Asbestos	Cyanides (as total CN)	Fluorides (as total F)	Octylphenols and Octylphenol	Fluoranthene	Isodrin	Hexabromobiphenyl	Benzo(g,h,i)perylene
	(d)	Chemical installations for the production on an industrial scale of basic plant health products and of biocides	□		□	□	□		□	□	□	□		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□		□	□		□	□		□
	(e)	Installations using a chemical or biological process for the production on an industrial scale of basic pharmaceutical products		□	□		□	□				□		□					□	□	□	□	□			□		□	□		□	□		□			□
	(f)	Installations for the production on an industrial scale of explosives and			□	□	□			□		□			□				□		□		□			□		□	□		□	□				

Pollutant no			51	52	53	54	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	81	82	83	87	88	89	90	91
		Pollutant name	Simazine	Tetrachloroethylene (PER)	Tetrachloromethane (TCM)	Trichlorobenzenes (TCBs) (all	Trichloroethylene	Trichloromethane	Toxaphene	Vinyl chloride	Anthracene	Benzene	Brominated diphenylethers (PBDE)	Nonylphenol and Nonylphenol	Ethyl benzene	Ethylene oxide	Isoproturon	Naphthalene	Organotin compounds (as total Sn)	Di-(2-ethyl hexyl) phthalate (DEHP)	Phenols (as total C)	Polycyclic aromatic hydrocarbons	Toluene	Tributyltin and compounds	Triphenyltin and compounds	Total organic carbon (TOC) (as total	Trifluralin	Xylenes	Chlorides (as total Cl)	Asbestos	Cyanides (as total CN)	Fluorides (as total F)	Octylphenols and Octylphenol	Fluoranthene	Isodrin	Hexabromobiphenyl	Benzo(g,h,i)perylene
		pyrotechnic products																																			

Pollutant no			12	13	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
		Pollutant name	Total nitrogen	Total phosphorus	Arsenic and compounds (as As)	Cadmium and compounds (as Cd)	Chromium and compounds(as Cr)	Copper and compounds (as Cu)	Mercury and compounds (as Hg)	Nickel and compounds (as Ni)	Lead and compounds (as Pb)	Zinc and compounds (as Zn)	Alachlor	Aldrin	Atrazine	Chlordane	Chlordecone	Chlorfenvinphos	Chloro-alkanes, C_{10}-C_{13}	Chlorpyrifos	DDT	1,2-dichloroethane (EDC)	Dichloromethane (DCM)	Dieldrin	Diuron	Endosulphan	Endrin	Halogenated organic compounds	Heptachlor	Hexachlorobenzene (HCB)	Hexachlorobutadiene (HCBD)	1,2,3,4,5, 6 - Lindane	Mirex	PCDD + PCDF (dioxins + furans)	Pentachlorobenzene	Pentachlorophenol (PCP)	Polychlorinated biphenyls (PCBs)
no	b	activity																																				
5		**Waste and wastewater management**																																				
	(a)	Installations for the disposal or recovery of hazardous waste	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
	(b)	Installations for the incineration of non-hazardous waste	□	□	□	□	□	□	□	□	□	□										□	□					□							□	□		
	(c)	Installations for the disposal of non-hazardous waste	□	□	□	□	□	□	□	□	□	□											□					□							□	□		

Pollutant no			12	13	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
	(d)	Landfills	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
	(e)	Installations for the disposal or recycling of animal carcasses and animal waste	□	□			□	□				□																							□	□		
	(f)	Urban waste-water treatment plants	□	□	□	□	□	□	□	□	□	□			□							□	□		□			□		□			□			□	□	
	(g)	Independently operated industrial waste-water treatment plants which serve one or more activities of this annex	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
6		**Paper and wood production and processing**																																				
	(a)	Industrial plants for the	□	□	□	□	□	□	□	□	□	□																□					□		□			

Pollutant no			12	13	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
		production of pulp from timber or similar fibrous materials																																				
	(b)	Industrial plants for the production of paper and board and other primary wood products (such as chipboard, fibreboard and plywood)	□	□	□	□	□	□	□	□	□	□																□					□		□		□	
	(c)	Industrial plants for the preservation of wood and wood products with chemicals	□	□	□		□	□				□																□										
7		**Intensive livestock production and aquaculture**																																				
	(a)	Installations for the intensive	□	□				□				□																										

Pollutant no			12	13	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
		rearing of poultry or pigs																																				
	(b)	Intensive aquaculture	☐	☐				☐				☐																							☐				

Pollutant no			51	52	53	54	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	81	82	83	87	88	89	90	91
		Pollutant name	Simazine	Tetrachloroethylene (PER)	Tetrachloromethane (TCM)	Trichlorobenzenes (TCBs) (all	Trichloroethylene	Trichloromethane	Toxaphene	Vinyl chloride	Anthracene	Benzene	Brominated diphenylethers	Nonylphenol and Nonylphenol	Ethyl benzene	Ethylene oxide	Isoproturon	Naphthalene	Organotin compounds (as total	Di-(2-ethyl hexyl) phthalate	Phenols (as total C)	Polycyclic aromatic	Toluene	Tributyltin and compounds	Triphenyltin and compounds	Total organic carbon (TOC) (as	Trifluralin	Xylenes	Chlorides (as total Cl)	Asbestos	Cyanides (as total CN)	Fluorides (as total F)	Octylphenols and Octylphenol	Fluoranthene	Isodrin	Hexabromobiphenyl	Benzo(g,h,i)perylene
no	b	activity																																			
5		**Waste and wastewater management**																																			
	(a)	Installations for the disposal or recovery of hazardous waste	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
	(b)	Installations for the incineration of non-hazardous waste		□			□					□			□				□		□	□	□			□		□	□		□	□	□	□			□
	(c)	Installations for the disposal of non-hazardous waste			□	□	□												□		□					□			□		□	□	□				
	(d)	Landfills	□	□	□	□	□	□		□	□	□	□	□	□		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
	(e)	Installations for the disposal or recycling of animal																								□											

Pollutant no			51	52	53	54	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	81	82	83	87	88	89	90	91
		carcasses and animal waste																																			
	(f)	Urban waste-water treatment plants	□	□	□		□	□				□		□			□	□	□	□	□	□	□	□	□	□		□	□		□	□	□	□			□
	(g)	Independently operated industrial waste-water treatment plants which serve one or more activities of this annex	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
6		**Paper and wood production and processing**																																			
	(a)	Industrial plants for the production of pulp from timber or similar fibrous materials		□			□	□														□				□							□	□			□
	(b)	Industrial plants for the production of paper and board and other primary wood products (such as chipboard, fibreboard		□			□	□												□		□				□							□	□			□

Pollutant no			51	52	53	54	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	81	82	83	87	88	89	90	91
		and plywood)																																			
	(c)	Industrial plants for the preservation of wood and wood products with chemicals									□							□		□		□	□			□		□	□			□		□			□
7		**Intensive livestock production and aquaculture**																																			
	(a)	Installations for the intensive rearing of poultry or pigs																								□											
	(b)	Intensive aquaculture																								□											

Pollutant no			12	13	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
		Pollutant name	Total nitrogen	Total phosphorus	Arsenic and compounds (as As)	Cadmium and compounds (as Cd)	Chromium and compounds(as Cr)	Copper and compounds (as Cu)	Mercury and compounds (as Hg)	Nickel and compounds (as Ni)	Lead and compounds (as Pb)	Zinc and compounds (as Zn)	Alachlor	Aldrin	Atrazine	Chlordane	Chlordecone	Chlorfenvinphos	Chloro-alkanes, C_{10}-C_{13}	Chlorpyrifos	DDT	1,2-dichloroethane (EDC)	Dichloromethane (DCM)	Dieldrin	Diuron	Endosulphan	Endrin	Halogenated organic compounds	Heptachlor	Hexachlorobenzene (HCB)	Hexachlorobutadiene (HCBD)	1,2,3,4,5, 6 -	Lindane	Mirex	PCDD + PCDF (dioxins + furans)	Pentachlorobenzene	Pentachlorophenol (PCP)	Polychlorinated biphenyls (PCBs)
no	b	activity																																				
8		**Animal and vegetable products from the food and beverage sector**																																				
	(a)	Slaughterhouses	□	□	□	□	□	□	□	□	□	□																										
	(b)	Treatment and processing intended for the production of food and beverage products from animal raw materials (other than milk) and vegetable raw materials	□	□	□	□	□	□	□	□	□	□																										
	(c)	Treatment and processing of milk	□	□	□	□	□	□	□	□	□	□																										
9		**Other activities**																																				
	(a)	Plants for the pre-treatment or dyeing of fibres or textiles	□	□		□	□	□	□	□	□	□																□										
	(b)	Plants for the tanning of hides and skins	□	□	□		□	□																				□										
	(c)	Installations for the surface treatment of substances, objects or products using organic solvents, in particular for dressing, printing, coating, degreasing, waterproofing, sizing, painting, cleaning or impregnating	□	□	□	□	□	□		□	□	□							□				□					□						□	□	□	
	(d)	Installations for the production of carbon (hard-burnt coal) or electro-graphite by means of incineration or graphitization								□																												
	(e)	Installations for the building of, and painting or removal of paint from ships	□	□	□	□	□	□	□	□	□	□							□			□	□					□						□	□		□

Pollutant no			51	52	53	54	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	81	82	83	87	88	89	90	91
		Pollutant name	Simazine	Tetrachloroethylene (PER)	Tetrachloromethane (TCM)	Trichlorobenzenes (TCBs) (all	Trichloroethylene	Trichloromethane	Toxaphene	Vinyl chloride	Anthracene	Benzene	Brominated diphenylethers	Nonylphenol and Nonylphenol	Ethyl benzene	Ethylene oxide	Isoproturon	Naphthalene	Organotin compounds (as total	Di-(2-ethyl hexyl) phthalate	Phenols (as total C)	Polycyclic aromatic	Toluene	Tributyltin and compounds	Triphenyltin and compounds	Total organic carbon (TOC) (as	Trifluralin	Xylenes	Chlorides (as total Cl)	Asbestos	Cyanides (as total CN)	Fluorides (as total F)	Octylphenols and Octylphenol	Fluoranthene	Isodrin	Hexabromobiphenyl	Benzo(g,h,i)perylene
no	b	activity																																			
8		**Animal and vegetable products from the food and beverage sector**																																			
	(a)	Slaughterhouses																			□	□				□			□			□		□			□
	(b)	Treatment and processing intended for the production of food and beverage products from animal raw materials (other than milk) and vegetable raw materials																			□	□				□			□			□		□			□
	(c)	Treatment and processing of milk																			□	□				□			□			□		□			□
9		**Other activities**																																			
	(a)	Plants for the pre-treatment or dyeing of fibres or textiles										□	□	□	□					□	□	□	□			□		□	□			□	□			□

Pollutant no			51	52	53	54	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	81	82	83	87	88	89	90	91
	(b)	Plants for the tanning of hides and skins												□							□					□			□				□				
	(c)	Installations for the surface treatment of substances, objects or products using organic solvents, in particular for dressing, printing, coating, degreasing, waterproofing , sizing, painting, cleaning or impregnating	□	□	□	□	□	□						□					□	□	□	□				□			□		□	□	□	□			□
	(d)	Installations for the production of carbon (hard-burnt coal) or electro-graphite by means of incineration or graphitization		□	□			□						□							□	□				□						□	□			□
	(e)	Installations for the building of, and painting or removal of paint from ships	□		□	□	□	□				□	□	□					□	□	□	□	□			□		□	□		□	□	□	□			□

*The basic organic pollutants, BOD_5, COD, SS are not included in the list

Annex VI
List of internationally approved measuring methods for air and water pollutants

List of internationally approved measuring methods for air and water pollutants

No.	CAS number	Pollutant	EN or ISO standard Emission to air (Abbreviations see below)	EN or ISO standard Emission to water (Abbreviations see below)
1	74-82-8	Methane (CH_4)	ISO Standard in preparation by ISO/TC 146/SC 1/ WG 22 (for information only)	---
2	630-08-0	Carbon monoxide (CO)	EN 15058:2004 ISO 12039:2001	---
3	124-38-9	Carbon dioxide (CO_2)	ISO 12039:2001	---
4		Hydro-fluorocarbons (HFCs)		---
5	10024-97-2	Nitrous oxide (N_2O)	ISO Standard in preparation by ISO/TC 146/SC 1/ WG 19 (for information only)	---
6	7664-41-7	Ammonia (NH_3)		---
7		Non-methane volatile organic compounds (NMVOC)	EN 13649:2001	---
8		Nitrogen oxides (NO_x/NO_2)	EN 14792:2005 ISO 11564:1998 ISO 10849:1996	---
9		Perfluorocarbons (PFCs)		---
10	2551-62-4	Sulphur hexafluoride (SF_6)		---
11		Sulphur oxides (SO_x/SO_2)	EN 14791:2005 ISO 7934:1989 ISO 7935:1992 ISO 11632:1998	---
12		Total nitrogen	---	EN 12260:2003 EN ISO 11905-1:1998
13		Total phosphorus	---	EN ISO 15681-1:2004 EN ISO 15681-2:2004 EN ISO 11885:1997 EN ISO 6878:2004
14		Hydrochlorofluorocarbons (HCFCs)		---
15		Chlorofluorocarbons (CFCs)		---
16		Halons		---
17		Arsenic and compounds (as As)	EN 14385:2004	EN ISO 11969:1996 EN 26595:1992
18		Cadmium and compounds (as Cd)	EN 14385:2004	EN ISO 5961:1995 EN ISO 11885:1997
19		Chromium and compounds (as Cr)	EN 14385:2004	EN 1233:1996 EN ISO 11885:1997
20		Copper and compounds (as Cu)	EN 14385:2004	EN ISO 11885:1997
21		Mercury and compounds (as Hg)	EN 13211:2001 EN 14884:2005	EN 1483:1997 EN 12338:1998 EN 13506:2001 According to the level of concentration
22		Nickel and compounds (as Ni)	EN 14385:2004	EN ISO 11885:1997
23		Lead and compounds (as Pb)	EN 14385:2004	EN ISO 11885:1997
24		Zinc and compounds (as Zn)		EN ISO 11885:1997
25	15972-60-8	Alachlor	---	
26	309-00-2	Aldrin		EN ISO 6468:1996
27	1912-24-9	Atrazine	---	EN ISO 10695:2000
28	57-74-9	Chlordane		
29	143-50-0	Chlordecone		

No.	CAS number	Pollutant	EN or ISO standard Emission to air (Abbreviations see below)	EN or ISO standard Emission to water (Abbreviations see below)
30	470-90-6	Chlorfenvinphos	---	
31	85535-84-8	Chloro-alkanes, C_{10}-C_{13}	---	
32	2921-88-2	Chlorpyrifos	---	
33	50-29-3	DDT		EN ISO 6468:1996
34	107-06-2	1,2-dichloroethane (EDC)		EN ISO 10301:1997 EN ISO 15680:2003
35	75-09-2	Dichloromethane (DCM)		EN ISO 10301:1997 EN ISO 15680:2003
36	60-57-1	Dieldrin		EN ISO 6468:1996
37	330-54-1	Diuron	---	EN ISO 11369:1997
38	115-29-7	Endosulfan	---	EN ISO 6468:1996
39	72-20-8	Endrin		EN 6468:1996
40		Halogenated organic compounds (as AOX)	---	EN ISO 9562:2004
41	76-44-8	Heptachlor		EN ISO 6468:1996
42	118-74-1	Hexachlorobenzene (HCB)		EN ISO 6468:1996
43	87-68-3	Hexachlorobutadiene (HCBD)	---	
44	608-73-1	1,2,3,4,5, 6-hexachlorocyclohexane (HCH)		EN ISO 6468:1996
45	58-89-9	Lindane		EN ISO 6468:1996
46	2385-85-5	Mirex		
47		PCDD +PCDF (dioxins +furans) (as Teq)	EN 1948-1 to -3:2003	ISO 18073:2004
48	608-93-5	Pentachlorobenzene		EN ISO 6468:1996
49	87-86-5	Pentachlorophenol (PCP)		
50	1336-36-3	Polychlorinated biphenyls (PCBs)	(prCEN/TS 1948-4) for information only	EN ISO 6468:1996
51	122-34-9	Simazine	---	EN ISO 11369:1997 EN ISO 10695:2000
52	127-18-4	Tetrachloroethylene (PER)		EN ISO 15680:2003 EN ISO 10301:1997
53	56-23-5	Tetrachloromethane (TCM)		EN ISO 10301:1997
54	12002-48-1	Trichlorobenzenes (TCBs) (all isomers)		EN ISO 15680:2003
55	71-55-6	1,1,1-trichloroethane		---
56	79-34-5	1,1,2,2-tetrachloroethane		---
57	79-01-6	Trichloroethylene		EN ISO 15680:2003 EN ISO 10301:1997
58	67-66-3	Trichloromethane		EN ISO 15680:2003 EN ISO 10301:1997
59	8001-35-2	Toxaphene		
60	75-01-4	Vinyl chloride		EN ISO 15680:2003
61	120-12-7	Anthracene	ISO 11338-1 to -2:2003	EN ISO 17993:2003
62	71-43-2	Benzene	EN 13649:2001	ISO 11423-1:1997 ISO 11423-2:1997 EN ISO 15680:2003
63		Brominated diphenylethers (PBDE)	---	ISO 22032
64		Nonylphenol *and Nonylphenol* ethoxylates *(NP/NPEs)*	---	
65	100-41-4	Ethyl benzene	---	EN ISO 15680:2003
66	75-21-8	Ethylene oxide		
67	34123-59-6	Isoproturon	---	
68	91-20-3	Naphthalene		EN ISO 15680:2003 EN ISO 17993:2003
69		Organotin compounds (as total Sn)	---	EN ISO 17353:2005

No.	CAS number	Pollutant	EN or ISO standard Emission to air (Abbreviations see below)	EN or ISO standard Emission to water (Abbreviations see below)
70	117-81-7	Di-(2-ethyl hexyl) phthalate (DEHP)		EN ISO 18856:2005
71	108-95-2	Phenols (as total C)	---	ISO 18857-1:2005
72		Polycyclic aromatic hydrocarbons (PAHs)	ISO 11338-1 to -2:2003	EN ISO 17993:2003 ISO 7981-1:2005 ISO 7981-2:2005
73	108-88-3	Toluene	---	EN ISO 15680:2003
74		Tributyltin and compounds	---	EN ISO 17353:2005
75		Triphenyltin and compounds	---	EN ISO 17353:2005
76		Total organic carbon (TOC) (as total C or COD/3)	---	EN 1484:1997
77	1582-09-8	Trifluralin	---	
78	1330-20-7	Xylenes	---	EN ISO 15680:2003
79		Chlorides (as total Cl)	---	EN ISO 10304-1:1995 EN ISO 10304-2:1996 EN ISO 10304-4:1999 EN ISO 15682:2001
80		Chlorine and inorganic compounds (as HCl)	EN 1911-1 to -3:2003	---
81	1332-21-4	Asbestos	ISO 10397:1993	
82		Cyanides (as total CN)	---	EN ISO 14403:2002
83		Fluorides (as total F)	---	EN ISO 10304-1:1995
84		Fluorine and inorganic compounds (as HF)	ISO/DIS 15713:2004	---
85	74-90-8	Hydrogen cyanide (HCN)		---
86		Particulate matter (PM10)	ISO Standard in preparation by ISO/TC 146/SC 1/ WG 20 (available as Committee Draft CD 23210) (for information only)	---
87	1806-26-4	Octylphenols and Octylphenol ethoxylates	---	
88	206-44-0	Fluoranthene	ISO 11338-1 to -2:2003	EN ISO 17993:2003
89	465-73-6	Isodrin	---	
90	36355-1-8	Hexabromobiphenyl		
91	191-24-2	Benzo(g,h,i)perylene	---	EN ISO 17993:2003
GENERAL STANDARDS for EMISSION to AIR and/or WATER				
G1	Water sampling – Part1 Guidance on the design of sampling programmes			EN ISO 5667-1 : 1996
G2	Water sampling – Part 10 Guidance on sampling waste water			EN ISO 5667-10 : 1992
G3	Water sampling – Part 3 Guidance on the preservation and handling of samples			EN ISO 5667-3 : 1994
G4	Guide to analytical quality control for water analysis			CEN/ISO TR 13530 : 1998
G5	Stationary source emission – Intra-laboratory validation procedure for an alternative method compared to a reference method		CEN/TS 14793	
G6	General requirements for competence of testing and calibration laboratories		EN ISO 17025 : 2005	
G7	GUM = Guide to the expression of uncertainty (1995) published by BIPM, IEC, IFCC, ISO, IUPAC, IUPAP, OIML		CEN TS 13005 : 2000	

Abbreviations:

EN	European Standard
CEN/TS	CEN Technical Specification
CEN/TR	CEN Technical Report
ISO	International Standard
ISO/CD	ISO Committee Draft
ISO/TC	ISO Technical Committee
ISO/TS	ISO Technical Specification
ISO/TR	ISO Technical Report
PrXXX	Draft standard (for information only)

Annex VII
R/D codes

R/D codes

Recovery/recycling operations

R 1 Use as a fuel or other means to generate energy
R 2 Solvent recovery/regeneration
R 3 Recycling/recovery of organic substances that are not used as solvents (including composting and other biological transformation processes) [1]
R 4 Recycling/recovery of metals and metal compounds
R 5 Recycling/recovery of other inorganic materials [2]
R 6 Regeneration of acids or bases
R 7 Recovery of components to reduce pollution
R 8 Recovery of components from catalysts
R 9 Oil re-refining or other re-use of oil
R 10 Treatment of land resulting in benefit to agriculture or environmental improvement
R 11 Use of waste as a result of any of the operations listed under codes from R 1 to R 10
R 12 Exchange of waste to conduct operations listed under codes from R1 to R11 [3]
R 13 Storage of waste intended for any of the operations listed under codes from R1 to R12 (this does not include temporary storage of waste at the place of its generation, and preparation for collection)

[1] This includes gasification and pyrolysis using the components as chemicals
[2] This includes soil cleaning resulting in the recovery of soil and recycling of inorganic construction materials.
[3] If no other R code is used, this includes pre-treatment prior to recovery, including dismantling, sorting, crushing, compacting, palleting, drying, shredding, re-packaging, separating or mixing prior to submission to conduct any of the operations under codes from R1 to R11.

Disposal operations

D 1 Placing into or on land (e.g., on landfills, etc.)
D 2 Soil treatment (e.g., biodegradation of liquid or sludgy waste discharged into soil, etc.)
D 3 Deep injection (e.g., injection of waste into wells, salt domes or natural reservoirs, etc.)
D 4 Surface impoundment (e.g., discharge of liquid or sludgy waste into pits, ponds or basins, etc.)
D 5 Specially engineered landfills (e.g., placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)
D 6 Discharge into water reservoirs (except for seas and oceans)
D 7 Discharge into seas and oceans including sea-bed insertion
D 8 Biological treatment which is not listed in this annex and which results in final compounds or mixtures that are disposed of by means of any of the
operations listed under codes from D1 to D12
D 9 Physiochemical treatment which is not listed in this annex and which results in final compounds or mixtures that are disposed of by means of any
of the operations listed under codes from D1 to D12 (e.g., evaporation, drying, calcination, etc.)
D 10 Incineration on land
D 11 Incineration at sea [1]
D 12 Permanent storage (e.g., placement of containers in a mine, etc.)
D 13 Mixing prior to submission to conduct any of the operations listed under codes from D1 to D12 [2]
D 14 Re-packaging prior to submission to conduct any of the operations listed under codes from D1 to D13
D 15 Storage in the course of any of the operations listed under codes from D1 to D14 (this does not include temporary storage of waste at the place of its generation and preparation for collection)

[1] This operation is prohibited by international conventions.
[2] If no other D code is used, this includes pre-treatment prior to disposal, in particular, sorting, crushing, compacting, palleting, drying, shredding or separating prior to submission to conduct any of the operations under codes from D1 to D12.

Annex VIII
Reporting format

Reporting format

Reference year		
Identification of the facility		
Name of the parent company Name of the facility Identification number of facility Street address Town Postal code Country Coordinates of the location River basin district NACE-code (4 digits) Main economic activity Production volume (optional) Number of installations (optional) Number of operating hours in year (optional) Number of employees (optional) Text field for textual information or website address delivered by facility or parent company (optional)		
All Appendix 1 activities of the facility		
Activity 1 (main activity) Activity 2 Activity N		
Release data to air for the facility for each pollutant exceeding threshold value		**Releases to air**
Pollutant 1 Pollutant 2 Pollutant N	M: measured; Analytical Method used C: calculated; Calculation Method used E: estimated	T: Total in kg/year A: accidental in kg/year
Technical measures	Type	Reduction of pollutants
Release data to water for the facility for each pollutant exceeding threshold value (according to Appendix 2)		**Releases to water**
Pollutant 1 Pollutant 2 Pollutant N	M: measured; Analytical Method used C: calculated; Calculation Method used E: estimated	T: Total in kg/year A: accidental in kg/year
Technical measures	Type	Reduction of pollutants
Release data to land for the facility for each pollutant exceeding threshold value (according to Appendix 2)		**Releases to land**
Pollutant 1 Pollutant 2 Pollutant N	M: measured; Analytical Method used C: calculated; Calculation Method used E: estimated	T: Total in kg/year A: accidental in kg/year

Technical measures	Type	Reduction of pollutants

Off-site transfer of each pollutant destined for wastewater treatment in quantities exceeding threshold value (according to Appendix 2)		
Pollutant 1 Pollutant 2 Pollutant N	M: measured; Analytical Method used C: calculated; Calculation Method used E: estimated	in kg/year
Off-site transfers of hazardous waste for the facility exceeding 2 tonnes/year		
Within the country: For Recovery (R)	M: measured; Analytical Method used C: calculated; Calculation Method used	in tonnes/year
Within the country: For Disposal (D)	M: measured; Analytical Method used C: calculated; Calculation Method used	in tonnes/year
To other countries: For Recovery (R) Name of the recoverer Address of the recoverer Address of actual recovery site receiving the transfer	M: measured; Analytical Method used C: calculated; Calculation Method used E: estimated	in tonnes/year
To other countries: For Disposal (D) Name of the disposer Address of the disposer Address of actual disposal site	M: measured; Analytical Method used C: calculated; Calculation Method used E: estimated	in tonnes/year
Off-site transfer of non-hazardous waste for the facility exceeding 2000 tonnes/year		
For Recovery (R)	M: measured; Analytical Method used C: calculated; Calculation Method used	in tonnes/year
For Disposal (D)	M: measured; Analytical Method used C: calculated; Calculation Method used	in tonnes/year

Competent authority for requests of the public: Name Street address Town Telephone No Fax No E-mail address	

Annex IX
Reporting format for H2020 indicator 6.4.2

Reporting format for H2020 indicator 6.4.2

River basin District (Name)	No of companies	Number of Breaches of law	Inspections (No/per year) – total (for all facilities)	Technical measures (treatment plants, recycling, preventive)
1				
2				
N				