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Directorate E: Sectoral and regional statistics  
**Unit E-2: Environmental statistics and accounts; sustainable development**

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**Point 6.5 of the agenda**

# **Revised CEPA and CReMA explanatory notes**

*Eurostat – Unit E2*

**Joint meeting of the working groups Environmental accounts and Monetary  
environmental statistics and accounts**

**Meeting May 2020**

## 1. Introduction

The document presents an updated version of the revised CEPA and CReMA explanatory notes discussed by MESA WG during its May 2019 meeting<sup>1</sup>. The draft CEPA and CReMA explanatory notes integrate the feedback provided by MESA WG members in a written consultation in summer 2019, reviewed further, clarified and elaborated in subsequent discussions of the Task Force on the classification of environmental activities (hereinafter referred to as "Task Force").

## 2. Key changes to CEPA and CReMA explanatory notes since May 2019 and open issues under discussion

In particular, the Task Force discussions led to:

- consensus<sup>2</sup> on how to modify the explanatory notes based on the feedback provided in MESA WG consultations of June 2019<sup>3</sup> (for specifics, see points 1-18 in Appendix 1);
- identification and clarification of other issues, related mainly to protection of biodiversity, management of forest resources and electric vehicles (for specifics on these topics and a few additional ones, see points 19; 22-27 in Appendix 1);
- addition of brief introductory sections, operational rules for a number of boundary cases (Annex A to the CEPA and CReMA explanatory notes) and references to Eurostat guidance note '*Reporting of electric and more resource-efficient transport equipment in EPEA and EGSS*' and Eurostat guidance note '*Reporting of energetic refurbishment and construction of new energy-efficient buildings in EGSS*' (Annex B to the CEPA and CReMA explanatory notes) (for specifics, see points 28 - 34 in Appendix 1);
- other revisions to ensure consistency between CEPA and CReMA descriptions (see points 20 - 21 in Appendix 1; please consider that pure editing adjustments undertaken to ensure consistency in terminology used throughout the CEPA and CReMA explanatory notes have not been presented in Appendix 1).

The Task Force could not agree on the specific issue of **retreaded tyres and paper pulp**, or so called 'downstream activities' in general, primarily on whether they have to be considered as

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<sup>1</sup> See "Progress on the work of the Task Force on the classification of environmental activities and CEPA/CReMA explanatory notes" – ENV/MESA/WG/03.1(2019) Point 3.1 of the agenda [https://circabc.europa.eu/sd/a/c83f2568-64dc-415d-a1b9-1b0e91ef1f5c/ENV\\_MESA\\_WG\\_2019\\_03.1%20TF%20and%20CEPA%20CReMA%20explanatory%20notes.pdf](https://circabc.europa.eu/sd/a/c83f2568-64dc-415d-a1b9-1b0e91ef1f5c/ENV_MESA_WG_2019_03.1%20TF%20and%20CEPA%20CReMA%20explanatory%20notes.pdf)

<sup>2</sup> On all points except for the treatment of retreaded tyres and paper pulp

<sup>3</sup> A summary of the feedback provided by MESA WG is presented in the documents discussed at the TF meeting of 10-11 October and available at:

[https://circabc.europa.eu/sd/a/c1ed3192-89ef-4041-b7bc-07b46a40f886/4TF%20CEA\\_4\\_4%20TF%20recommendation%20on%20specific%20cases.pdf](https://circabc.europa.eu/sd/a/c1ed3192-89ef-4041-b7bc-07b46a40f886/4TF%20CEA_4_4%20TF%20recommendation%20on%20specific%20cases.pdf) ,

[https://circabc.europa.eu/sd/a/8240c6a7-ca8e-4104-a007-dfe2281ed853/4TF%20CEA\\_4\\_5%20TF\\_%20open%20questions%20and%20operational%20rules.pdf](https://circabc.europa.eu/sd/a/8240c6a7-ca8e-4104-a007-dfe2281ed853/4TF%20CEA_4_5%20TF_%20open%20questions%20and%20operational%20rules.pdf).

[https://circabc.europa.eu/sd/a/359d30f3-c13a-41e1-85b8-30aae59c62a1/4TF\\_CEA\\_Conclusions%20and%20follow-up\\_points\\_final.pdf](https://circabc.europa.eu/sd/a/359d30f3-c13a-41e1-85b8-30aae59c62a1/4TF_CEA_Conclusions%20and%20follow-up_points_final.pdf)

TF conclusions are available at [https://circabc.europa.eu/sd/a/359d30f3-c13a-41e1-85b8-30aae59c62a1/4TF\\_CEA\\_Conclusions%20and%20follow-up\\_points\\_final.pdf](https://circabc.europa.eu/sd/a/359d30f3-c13a-41e1-85b8-30aae59c62a1/4TF_CEA_Conclusions%20and%20follow-up_points_final.pdf)

environmental products or not. As a pragmatic solution, in the absence of the consensus, Eurostat decided to follow the existing guidance in the EGSS handbook and indicative compendium of environmental economic activities and of environmental products (according to which retreaded tyres and paper pulp are not considered environmental products) until the EGSS operational list has been discussed and updated. The work on the update of the EGSS operational list will begin after the MESA WG has agreed to the revised CEPA and CReMA explanatory notes, and it is expected to be completed by 2022Q2<sup>4</sup>. For this reason, the TF agreed to leave out the specific references to retreaded tyres and paper pulp in the CEPA and CReMA explanatory notes.

Moreover, please consider that the text of the CEPA 6 explanatory notes has only recently been discussed and agreed with the TF, and based on the feedback provided in the MESA WG consultation, a subsequent review of this specific section might be necessary in summer 2020.

### 3. Documents for MESA WG consultation and their status

This document has three Appendices:

- **Appendix 1** summarises the issues discussed by the Task Force and its recommendations and provides also an overview of key modifications proposed to the CEPA and CReMA explanatory notes and for this reason, it might facilitate the review of the text of Appendix 2 and Appendix 3.

Please note that items 1-18 were already subject to a written consultation with the MESA WG (of June 2019) and recommendations of the Task Force on these points take into account the feedback provided by MESA WG Members in the consultation.

Appendix 1 provides also a summary of the operational recommendations discussed and agreed by the Task Force on specific borderline cases and included in Annex A to the CEPA and CReMA Explanatory notes<sup>5</sup> (on pages 42-44 of this document).

- **Appendix 2 and Appendix 3 are subject to consultation with MESA WG**; they present **the updated proposal of the CEPA and CReMA explanatory notes for MESA WG review and endorsement**.

In this version, are newly added (and highlighted in grey):

- 1) introductory notes to CEPA and CReMA,
- 2) the Annex with the recommendation for the treatment of specific borderline cases (Annex A '*Operational rules for boundary cases*', on pages 42-44 of this document) and

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<sup>4</sup> Please refer to Eurostat's proposal to extend accordingly tasks and timeline for the work of the TF in document for agenda point 6.1.

<sup>5</sup> The TF agreed that the explanatory notes should provide definitions and information on recording conventions rather than operational rules. Any specific recommendation on how to implement the guidance in practice should be excluded from the main body of the explanatory notes and presented in an annex.

3) the Annex with references to Eurostat's related Guidance Notes (Annex B '*Eurostat Guidance Notes accompanying the CEPA and CReMA explanatory notes*', on page 44 of this document).

Please consider that Eurostat undertook also some other minor changes to the CEPA and CReMA explanatory notes, in particular editorial and linguistic revisions, to make the text clearer and more understandable for data compilers and users. For the sake of readability of the text, and to ensure focus on major updates, the modifications are not pointed out in Appendices 2-3 given that they do not affect the substance and content of the text.

**Status of the document:** the text of CEPA and CReMA explanatory notes presented in this document might need to be further revised, and its web-references updated, to take account of the conclusions on pending methodological issues covered under the following agenda points:

- 6.2 Guidance note on electric vehicles<sup>6</sup>
- 6.3 Guidance note on energy efficient buildings<sup>7</sup>
- 6.4 Recording of forest resources management activities

In this context, it should be noted that the two guidance notes, 1) '*Reporting of electric and more resource-efficient transport equipment in EPEA and EGSS*' and 2) '*Reporting of energetic refurbishment and construction of new energy-efficient buildings in EGSS*', do complement and extend the guidance in the CEPA and CReMA explanatory notes and will be published on Eurostat's website.

#### 4. Conclusions

Eurostat and the Task Force made substantial progress on the CEPA and CReMA explanatory notes and related guidance notes. The revised CEPA and CReMA explanatory notes are presented to the MESA WG for comments and endorsement.

It should be noted that:

- References to downstream activities in the text of CEPA and CReMA explanatory notes are now very general given that the treatment of such activities needs further discussion and will be addressed in the context of the update of the EGSS operational list (and if necessary of the indicative compendium of environmental economic activities and environmental products).

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<sup>6</sup>Please note that the title of the guidance note ('*Reporting of electric and more resource-efficient transport equipment in EPEA and EGSS*') differs from the description of this agenda item (with the latter still referring to a working title of the document).

<sup>7</sup>Please note that the title of the guidance note ('*Reporting of energetic refurbishment and construction of new energy-efficient buildings in EGSS*') differs from the description of this agenda item, which still refers to a working title of the document.

- Descriptions of CEPA 6 have been agreed by the TF based on a very first discussion of the related issues; for this reason, the MESA WG is requested to review related guidance with particular attention.
- The MESA WG is being consulted separately on more specific guidance related to electric vehicles, energy efficient buildings and forest resources management activities.

**The working group is invited to:**

- **take note of the revisions implemented to the final draft of explanatory notes (with major points listed in Appendix 1);**
- **express views on the new introductory sections added to explanatory notes, the descriptions of operational rules and all other points listed in Appendix 1;**
- **endorse the text of the explanatory notes prepared by the Task Force (subject to their further update based on MESA WG feedback on specific methodological issues discussed under agenda items 6.2 to 6.4) or propose concrete adjustments;**
- **take note that the updated guidance, once endorsed by the Working Group, should be implemented in the EGSS and EPEA accounts for the 2021 EGSS and EPEA reporting.**

## Appendix 1 – List of principal issues discussed by TF and related recommendations

ITEM		MESA WG consultation	TF recommendation
1	Pumped hydropower stations	Yes (summer 2019)	- To exclude from CReMA 13A and to report under CReMA 13B.
2	Energy storage technology associated with renewable energy source	Yes (summer 2019)	- To report under CReMA 13A. Examples have been included in the explanatory note based on the results of Action point 4 (please see document on “ <b>Main conclusion and action points</b> ” from the October 2019 TF meeting(*))
3	Electricity grids	Yes (summer 2019)	- To overall exclude from CEPA/CReMA - Still, certain elements of smart grids to be included (smart meters, specific software)
4	Substitution of materials in CReMA	Yes (summer 2019)	- To delete any reference in CReMA 10 - Activities associated with the reduction of the use of cooling water and more efficient water cooling in the energy sector have to be reported in CEPA 2 in a related sub-domain “CEPA 2.4 Treatment of cooling water” to avoid boundary issues
5	Conventional aquaculture	Yes (summer 2019)	- To exclude from the scope of monetary accounts
6	Urban parks and gardens	Yes (summer 2019)	- To explicitly mention as an example of recreational structures and spaces excluded from CEPA 6
7	Activities leading to indivisible expenditure (CEPA)	Yes (summer 2019)	- CEPA 9.3 to be flagged as "obsolete, to be discontinued"
8	Treatment of sewage sludge	Yes (summer 2019)	- To drop current version of operational rule - To record all activities by convention under CEPA 2
9	Fuel wood	Yes (summer 2019)	- To include under CReMA 13A without distinction between sustainable and conventional fuel wood
10	Cogeneration	Yes (summer 2019)	- Manufacturing and installation of relevant equipment: to be reported under CReMA 13B - Operation of cogeneration plants that exclusively use renewable fuels: to be reported under CReMA 13A
11	Climate change adaptation (CCA)	Yes (summer 2019)	- Keep a statement about CCA exclusion in the CEPA 1 text, with some related examples
12	Treatment of heat pollution of (cooling) water	Yes (summer 2019)	- To report under CEPA 2.4
13	Water recycling	Yes (summer 2019)	- To add in the explanatory note a definition of water recycling instead of a list of examples
14	Composting	Yes (summer 2019)	- To report by convention under CEPA 3

ITEM		MESA WG consultation	TF recommendation
15	Materials recovery	Yes (summer 2019)	- To exclude from CEPA 3 and report all activities under CReMA
16	Production of biogas and biofuels from waste	Yes (summer 2019)	- To drop current version of operational rule - To report by convention under CReMA 13A
17	Production of energy through incineration of waste	Yes (summer 2019)	- To drop current version of operational rule - To report by convention under CReMA 13A (from bio-degradable waste) and CReMA 13B (from non-biodegradable waste)
18	Allocation of “indivisible” materials recovery activities	Yes (summer 2019)	- To allocate these activities under the CReMA category which represents the dominant component in terms of value
19	List of cleaner and more efficient vehicles	Launched with this document	- To make explicit reference to the Eurostat Guidance Note on electric and more resource-efficient transport equipment to ensure consistency in case of any possible revision and update of the Guidance Note
20	Activities leading to indivisible expenditure (CReMA)	Launched with this document	- CReMA 16: delete reference to “Activities leading to indivisible expenditure” and international financial aid classified under “Activities not elsewhere classified” to keep consistency with CEPA.
21	International financial aid	Launched with this document	- To classify under CEPA 9.4 or CReMA 16 if they cannot be attributed to an individual CEPA or CReMA class respectively
22	Extraction of non-wood forest products	Discussed under a separate MESA WG agenda point	- To keep the current treatment of non-wood products as described in the original version of explanatory notes (i.e. the extraction of non-wood forest products is outside the scope of environmental accounts); however, also keeping in mind that the EGSS Indicative Compendium allow for country-specific activities and products to be included in national environmental accounts, with clearly informing the users (e.g., through metadata ) about the specific circumstances for a given country
23	Pest control	Discussed under a separate MESA WG agenda point	- To clarify that chemical pest control is outside the scope of CReMA 11A, whereas biological and mechanical means of pest control are within the scope; if the latter two means cannot be clearly identified and separated from the chemical pest control, no value (or 0) is to be reported for this item.
24	Treatment of sewage sludge activities for its incineration	Launched with this document	- To include under CEPA 2 by convention
25	Substitution activities – CReMA 14	Launched with this document	- To include under CReMA 14 activities that aim at substituting mineral-based materials by wood-based materials (or materials made of other abundant, renewable resource) for construction

ITEM		MESA WG consultation	TF recommendation
26	Updated text for CEPA 6 including also Wild flora and fauna (CReMA 12) as agreed	Launched with this document	- The content of CEPA 6 to include also wild flora and fauna has been revised based on the conclusion to have management of wild flora and fauna (CReMA 12) discontinued and combined with Protection of biodiversity and landscape (CEPA6). .
27	Include in the list of example of Production of electricity, heat and fuels from renewable sources: production of electricity from "aerothermal" and "hydrothermal" sources	Launched with this document	- To have a more exhaustive list of examples included
28	Revision of CEPA/CReMA introductory notes	Launched with this document	- To have a more detailed description of CEPA with reference also to the concepts of products and expenditure and a consistent introductory note of CReMA
29	Waste recovery and waste management – operational rule	Launched with this document	- To classify waste management and materials recovery activities under CEPA 3 and CReMA (i.e. 11B, 13C or 14) respectively. Classification of products by activity (CPA) is the best reference classification to separate out these activities. However, if information based on CPA is not available, the classification of economic activities (NACE) can be used by convention to split waste management and materials recovery activities. (Please make reference to Annex A to explanatory notes for the detailed description of the operational rule)
30	Production of biogas and biofuels from waste – operational rule	Launched with this document	- Production of biogas and biofuels from waste is reported under CReMA 13A. Specific recommendations to avoid double counting with waste management in CEPA 3 when different data sources and classifications are used are defined in the ANNEX to explanatory notes (please make reference to Annex A for the detailed description of the operational rule)
31	Production of energy through incineration of waste – operational rule	Launched with this document	- Production of energy through incineration of waste is reported under CReMA 13A (from bio-degradable waste) and CReMA 13B (from non-biodegradable waste). Specific recommendations to avoid double counting with waste management in CEPA 3 when different data sources and classifications are used are defined in Annex A to explanatory notes (please make reference to Annex for the detailed description of the operational rule)
32	Allocation of "indivisible" materials	Launched with this document	- To allocate by convention under the CReMA category (11B, 13C or 14) which represent the dominant component in terms of value based on the estimates of materials recovery activities

ITEM		MESA WG consultation	TF recommendation
	recovery activities – operational rule		already allocated (please make reference to Annex A for the detailed description of the operational rule)
<b>33</b>	Distinction between CEPA 6, CEPA 4 and CReMA 11 A – operational rule	Launched with this document	- Activities have to be allocated to the specific CEPA/CReMA class according to information provided by laws, programmes or any other statement. They have to be allocated by CEPA 6 by convention when no information is available (please make reference to Annex A for the detailed description of the operational rule)
<b>34</b>	Add to explanatory notes an Annex (Annex B) with list of Guidance Notes and related links	Launched with this document	- To have a clear reference to Eurostat's notes providing guidance on the treatment of specific activities and products and/or addressing related methodological or compilation questions ('Guidance notes')

(\*) Please see TF conclusions available at [https://circabc.europa.eu/sd/a/359d30f3-c13a-41e1-85b8-30aae59c62a1/4TF\\_CEA\\_Conclusions%20and%20follow-up\\_points\\_final.pdf](https://circabc.europa.eu/sd/a/359d30f3-c13a-41e1-85b8-30aae59c62a1/4TF_CEA_Conclusions%20and%20follow-up_points_final.pdf)

## Appendix 2 – CEPA explanatory notes: proposal

### Introduction

This note presents updated guidance on the Classification of Environmental Protection Activities (CEPA), an established international classification since 2000<sup>8</sup>. CEPA 2000 is a generic, multi-purpose, functional classification used for classifying **activities**, **products**, **expenditure** and other transactions related to environmental protection.

Environmental protection activities are defined as economic activities aimed at preventing, reducing and eliminating pollution or any other degradation of the environment. Also included are measures to restore the environment after it has been degraded.

Environmental protection products include i) goods and services produced, designed and manufactured for purposes of environmental protection and ii) cleaner (adapted) products. Expenditure for environmental protection consists of outlays and other transactions related to environmental activities and products:

- inputs for environmental protection activities (energy, raw materials and other intermediate inputs, wages and salaries, taxes linked to production, consumption of fixed capital);
- capital formation and acquisitions less disposals of land (investment);
- household expenditure on environmental protection products;
- transfers for environmental protection (subsidies and other current transfers (e.g., regular payments to support international aid programmes), investment grants, international aid, taxes earmarked for environmental protection, etc.).

The level 1 structure of CEPA (the 1-digits) are the CEPA classes. CEPA classes 1 to 7 are also called (environmental) domains.

CEPA is complemented by the Classification of Resource Management Activities (CReMA) that breaks down environmental activities aimed at preserving and enhancing the stock of natural resources.

With the start of the mandatory reporting for monetary-environmental accounts in 2017<sup>9</sup>, questions about how to classify certain goods, services, and expenditures emerged. Soon it became apparent that the available guidance required clarification and more in-depth explanation to ensure that in the compilation of monetary-environmental accounts, countries record activities and transactions in a harmonised manner.

The - updated explanations and examples presented in this document reflect the discussions in the MESA working group, the task force on the classification of environmental activities and the feedback from countries during the 2017 and 2018 data collections.

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<sup>8</sup> CEPA is available from

[https://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST\\_NOM\\_DTL&StrNom=CEPA\\_2000&StrLanguageCode=EN&IntPcKey=&StrLayoutCode=HIERARCHIC](https://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=CEPA_2000&StrLanguageCode=EN&IntPcKey=&StrLayoutCode=HIERARCHIC)

<sup>9</sup> Mandated by Regulation (EU) No 691/2011 (<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02011R0691-20140616&from=EN>)

The list of activities included and excluded in the introduction of each CEPA class is not exhaustive. More examples and details are provided at the level 2 structure of CEPA (the 2-digit). In addition Annex A presents recommendations for the treatment of specific borderline cases.

Eurostat's notes providing guidance on the treatment of specific activities and products and/or addressing related methodological or compilation questions ('Guidance notes'), and published alongside these CEPA explanatory notes, shall also be consulted and taken into consideration. Annex B provides a list of Guidance Notes and related links.

## **1 PROTECTION OF AMBIENT AIR AND CLIMATE - *PROPOSAL***

*Protection of ambient air and climate* comprises measures and activities aimed at reducing emissions into the ambient air or reducing concentrations of air pollutants. This includes measures and activities aimed at the control of emissions of greenhouse gases, air pollutants and gases that adversely affect the stratospheric ozone layer.

It includes:

- electric and hybrid cars, buses and other cleaner and more efficient vehicles as specified in the Eurostat Guidance Note *[reference to the Guidance Note, once finalised and available on the website, to be added]*
- charging stations and other essential infrastructure for recharging electric road vehicles
- catalytic converters and particle filters

It excludes:

- measures undertaken for cost saving reasons (e.g. energy saving)
- climate change adaptation measures (e.g. disaster prevention expenditure dedicated to extreme weather events such as storms, heat waves, droughts, flood, etc.)
- production of renewable energy (see CReMA 13)

### **1.1 Prevention of pollution through in-process modifications**

Activities and measures aiming to eliminate or reduce the air pollution through In-Process Modifications (IPMs) related to:

- cleaner and more efficient production processes and other technologies (cleaner technologies)
- the consumption or use of 'cleaner' (adapted) products

It includes:

- replacing existing production processes by new processes designed to reduce the generation of air pollutants during production, storage or transportation, e.g.:
  - cleaner and more efficient vehicles,
  - fuel combustion improvement,
  - recovery of solvents,
  - prevention of spills and leaks through improving air-tightness of equipment, etc.
- modifying or adapting production process or facilities to enable either the substitution of raw materials, energy, catalysts and other inputs by non- (or less) polluting products, or the treatment of raw materials prior to their use in order to make them less polluting,

e.g. desulphuration of fuel. Expenditure under this position also includes the extra costs of the use of cleaner products (e.g., electrified road vehicles).

Category 1.1 is split into the two underlying categories:

- for the protection of ambient air (1.1.1)
- for the protection of climate (1.1.2)

Electric and more efficient vehicles are to be reported as cleaner products under category 1.1.1 by convention.

## **1.2 Treatment of exhaust gases and ventilation air**

Activities involving the installation, maintenance and operation of end-of-pipe equipment for the removal and reduction of emissions of particulate matter or other air-polluting substances either from the combustion of fuels or from processes. Examples include filters, de-dusting equipment, catalytic converters, post-combustion and other techniques. Also included are activities aiming to increase the dispersion of gases so as to reduce concentrations of air pollutants.

*Exhaust gases* are emissions into the air, usually through exhaust pipes, stacks or chimneys. *Ventilation air* refers to the exhaust from air conditioning systems of industrial facilities.

Category 1.2 is split into the two underlying categories:

- for the protection of ambient air (1.2.1)
- for the protection of climate (1.2.2)

## **1.3 Monitoring and measurement and similar**

Activities aimed at monitoring pollutant concentrations in exhaust gases and the quality of air, etc.

It includes:

- measurement services of exhaust gases from vehicles and heating systems
- the monitoring related to the ozone layer, greenhouse gases and climate change

It excludes:

- activities of weather stations

## **1.4 Other activities**

All other activities and measures aimed at the protection of ambient air and climate.

It includes:

- regulation
- Education, Training, Information provision and General Administration (ETIGA) specific to CEPA 1. ETIGA should be reported here when they can be separated from other activities belonging to CEPA 1 and from similar activities related to other environmental protection classes.

## **2 WASTEWATER MANAGEMENT - *PROPOSAL***

*Wastewater* is defined as water that is of no further immediate value for the purpose for which it was used or in the pursuit of which it was produced because of quality, quantity, or time of its occurrence.

*Wastewater management* comprises activities and measures aimed at the prevention of pollution of surface water through the reduction of the release of wastewater into inland surface water and seawater.

It includes:

- the collection, treatment of wastewater
- monitoring and regulation activities
- septic tanks

*Septic tanks* are settling tanks through which wastewater is flowing and the suspended matter is decanted as sludge. Organic matter (in the water and in the sludge) are partly decomposed by anaerobic bacteria and other micro-organisms.

It excludes:

- actions and activities aiming to protect groundwater from pollutant infiltration and the cleaning up of water bodies after pollution (see CEPA 4)

### **2.1 Prevention of pollution through in-process modifications**

Activities and measures aimed at reducing the generation of surface water pollutants and wastewater through IPMs related to:

- cleaner and more efficient production processes and other technologies (cleaner technologies)
- the consumption or use of ‘cleaner’ (adapted) products.

It includes:

- replacing existing production processes with new processes designed to reduce water pollutants or wastewater generated during production. Examples include separation of networks and treatment and re-use of water used in production processes, etc.
- modifying or adapting an existing production process or facilities to enable the substitution of raw materials, catalysts and other inputs by non- (or less) water polluting products.

### **2.2 Sewerage networks**

Activities aimed at the operation, maintenance and repair of sewerage networks.

*Sewerage networks* are the systems of collectors, pipelines, vehicles, tanks, conduits and pumps used in the process of transporting wastewater (rainwater, domestic and other wastewater) from the points of generation to either a sewage treatment plant or to a point where wastewater is discharged.

## 2.3 Wastewater treatment

*Wastewater treatment* is the process which bring wastewater up to environmental standards or other quality norms. Three broad types of treatment (mechanical, biological, and advanced treatment) are defined below. Alternative definitions of types of treatment may be used, e.g. based on removal rates for biological oxygen demand

1. *Mechanical (or physical) treatment* separates wastewater into treated water and sludge. Mechanical treatment includes the use of sedimentation and the use of screens to separate large solids. Sedimentation may be assisted by chemicals or flotation (elimination of sand, oil, part of the sludge, etc.).
2. *Biological treatment* employs aerobic or anaerobic microorganisms to treat wastewater and results in treated wastewater and separate sludge containing microbial mass and pollutants. This activity is designed to eliminate pollution from oxidisable materials through the use of bacteria: activated sludge techniques or anaerobic treatment for specific concentrated wastewater. Biodegradable materials are treated with the addition of bacteria-enriched sludge in open or closed tanks.
3. *Advanced treatment* reduces specific constituents in wastewater not normally achieved by other treatment options. It covers all processes which are not considered to be mechanical or biological<sup>10</sup>. This activity is aimed at eliminating oxidisable non-biodegradable matter at a higher level, as well as metals, nitrate, phosphorous, etc. Special equipment is required for each depollution process.

Septic tanks, their maintenance and emptying and other products for septic tanks (biological activators, etc.) are included.

Construction and operation of sewage treatment plants, and the treatment of sewage sludge for disposal or other uses (e.g. agriculture, incineration with energy recovery and biogas production) are also included.

## 2.4 Treatment of cooling water

*Treatment of cooling water* designates processes which bring cooling water up to environmental standards before releasing into the environment. Cooling water is used to remove heat. This can involve air cooling (extra cost compared with water cooling), cooling towers (to the extent they are required to reduce pollution, as distinct from technical needs), cooling circuits for processing water and for condensing released vapour, equipment for enhancing the dispersion of cooling water on release, closed cooling circuits (extra cost), circuits for use of cooling water for heating purposes (extra cost).

Activities associated with the reduction of the use of cooling water and more efficient water cooling in the energy sector are included.

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<sup>10</sup> Advanced treatment includes, for example, chemical coagulation, flocculation and precipitation; break-point chlorinating; stripping; mixed media filtration; micro-screening; selective ion exchange; activated carbon absorption; reverse osmosis; ultra-filtration; elector flotation.

## **2.5 Monitoring and measurement and similar**

Activities aimed at monitoring the concentration of pollutants in wastewater and the quality of inland surface water and marine water at the place wastewater is discharged (analysis and measurement of pollutants, etc.).

## **2.6 Other activities**

All other activities and measures aimed at wastewater management, including regulation and ETIGA activities specific to CEPA 2, when they can be separated from other activities belonging to CEPA 2 and from similar activities related to other environmental protection classes.

### 3 WASTE MANAGEMENT - *PROPOSAL*

*Waste* is any substance or object which the holder discards or intends or is required to discard<sup>11</sup>. Waste may be generated during the extraction of raw materials, during the processing of raw materials to intermediate and final products, during the consumption of final products, and during any other human activity.

This class concerns both non-hazardous and hazardous waste (with the exception of high level radioactive waste (CEPA 7)).

*Waste management* refers to activities and measures which prevent the generation of waste and reduce the harmful effects of waste on the environment.

It includes:

- collection, treatment and disposal of waste including low-level radioactive waste
- monitoring and regulation activities
- street cleaning and the collection of public litter

*Treatment of waste* refers to processes which change the physical, chemical, or biological character or composition of waste to render it non-hazardous, safer for transport, amenable for recovery or storage, or to reduce it in volume. A particular waste may undergo more than one treatment process.

Composting activities are included.

*Disposal of waste* is the final deposition of waste above or underground in controlled or uncontrolled fashion, in accordance with the sanitary, environmental or security requirements.

It excludes:

- materials recovery including processing of waste into secondary raw materials (see CReMA 11B/13B or 14)
- production of biogas and biofuels from waste (see CReMA 13A)
- production of energy through incineration of waste (see CReMA 13A, from biodegradable waste or CReMA 13B, from non-biodegradable waste and where biodegradable and non-biodegradable waste fractions cannot be separated)
- environmental protection measures and activities related to discharging of waste materials directly into ambient water (included in CEPA 2 or CEPA 4) or air (included in CEPA 1)
- collection and treatment of high level radioactive waste (included in CEPA 7)
- snow and ice removal

#### 3.1 Prevention of pollution through in-process modifications

Activities and measures aimed at eliminating or reducing the generation of solid waste through IPMs related to:

- cleaner and more efficient production processes and other technologies (cleaner technologies),
- the consumption or use of ‘cleaner’ (adapted) products.

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<sup>11</sup> [Directive 2008/98/EC](#) Article 3(1)

It includes:

- replacing an existing production process by a new process such that the toxicity or volume of waste produced is reduced. This includes separation and re-processing (cleaner technologies)
- modifying or adapting the production processes or facilities to enable substitution of raw materials, catalysts and other intermediate inputs with new, "adapted" inputs whose use produces less waste or less hazardous waste (cleaner products)

### **3.2 Collection and transport**

*Collection and transport of waste* is defined as the collection of waste, either by municipal services or similar institutions or by public or private corporations, and its transport to the place of treatment or disposal.

It includes:

- the separate collection and transport of waste fractions to facilitate recovery, collection and transport of hazardous waste
- collection and transport of demolition waste
- the part of street cleaning involving litter and collection of garbage.

It excludes:

- winter services, i.e. snow and ice removal services to ensure roads are passable in winter (this is neither an EP nor an RM activity)

### **3.3 Treatment and disposal of hazardous waste**

*Hazardous waste* is waste which poses a substantial actual or potential hazard to human health or living organisms due to its toxic, infectious, radioactive, flammable or other character as defined by Annex III of EU Directive 2008/98/EC.

This category includes *low-level radioactive waste*, defined as waste which does not require shielding during normal handling and transportation due to its low radionuclide content.

*High level radioactive* waste is excluded (see CEPA 7).

It includes:

- physical/chemical, thermal and biological treatment
- conditioning of wastes, and any other relevant treatment method
- landfill
- containment
- underground disposal, and any other relevant disposal method excluding dumping at sea.

*Physical treatment* of hazardous waste fixes the waste in an inert, impervious matrix via phase separation and solidification

*Chemical treatment* is used both to effect the complete breakdown of hazardous waste into non-toxic gases and, more usually, to modify the chemical properties of the waste, e.g. to reduce water solubility or to neutralise acidity or alkalinity

*Thermal treatment of hazardous waste* converts hazardous waste into gases and incombustible solid residues via high-temperature oxidation them. The flue gases are released into the atmosphere (with or without recovery of heat and with or without cleaning) and any slag or ash produced is deposited in the landfill. The main technologies used in the incineration of hazardous waste are the rotary kiln, liquid injection, incinerator grates, multiple chamber incinerators, and fluidised bed incinerators. Residues from hazardous waste incineration may themselves be regarded as hazardous waste. The resulting thermal energy may or may not be used for the production of steam, hot water, or electricity.

*Landfill* refers to final disposal of hazardous waste in or on land in a controlled way, which meets specific geological and technical criteria.

*Underground disposal* refers to temporary storage or final disposal of hazardous wastes underground that meet specific geological and technical criteria.

### **3.4 Treatment and disposal of non-hazardous waste**

It includes:

- treatment of non-hazardous waste:
  - physical/chemical treatment
  - biological treatment
  - any other treatment method (such as composting)
- disposal of non-hazardous waste:
  - incineration in the case of non-energy use
  - landfill
  - any other disposal method

Backfilling using demolition waste is excluded (CReMA14)

*Incineration* is the thermal treatment of waste during which chemically fixed energy in matter is transformed into thermal energy. Combustible compounds are transformed into combustion gases leaving the system as flue gases. Incombustible inorganic matters remain in the form of slag and fly ash.

Production of energy from incineration of waste is excluded (CReMA 13A if from bio-degradable waste and CReMA 13B if from non-biodegradable waste and where bio-degradable and non-biodegradable waste fractions cannot be separated).

### **3.5 Monitoring and measurement and similar**

Activities and measures aimed at monitoring the generation and storage of waste, their toxicity, etc.

### **3.6 Other activities**

All other activities and measures aimed at waste management, including ETIGA activities specific to CEPA 3, when they can be separated from other activities belonging to CEPA 3 and from similar activities related to other environmental protection classes.

## **4 PROTECTION AND REMEDIATION OF SOIL AND WATER - *PROPOSAL***

*Protection and remediation of soil and water* concerns surface water, groundwater and marine waters. It refers to measures and activities aimed at the prevention of pollutant infiltration, cleaning up of soils and water bodies and the protection of soil from erosion and other physical degradation including salinisation. Monitoring of soil and groundwater pollution is included as well as activities for protection and remediation of marine environment.

Excluded are wastewater management activities (see CEPA 2), as well as activities aimed at the protection of biodiversity and landscape (see CEPA 6).

Aquaculture is outside the scope of environmental activities with the exception of organic aquaculture<sup>12</sup>, included under CEPA 4.3.

### **4.1 Prevention of pollutant infiltration**

Activities and measures aimed at reducing or eliminating the penetration of polluting substances into soil and water.

It includes:

- activities related to sealing of soils of industrial plants
- installation of catchment for pollutant run-offs and leaks
- strengthening of storage facilities
- transportation of pollutant products

### **4.2 Cleaning up of soil and water bodies**

Processes to reduce the quantity of pollutants in soil and water bodies either in situ or in appropriate installations<sup>13</sup>.

It includes:

- soil decontamination at former industrial sites, landfills and other black spots
- dredging of pollutants from water bodies (rivers, lakes, estuaries, etc.)
- the decontamination and cleaning up of surface water following accidental pollution e.g. through collection of pollutants or through application of chemicals
- the cleaning up of oil spills on land, inland surface waters and seas – including coastal areas

It excludes:

- the liming of lakes and artificial oxygenation of water bodies (see CEPA 6)
- civil protection services classified outside of CEPA and CReMA

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<sup>12</sup> The conclusion results from the discussion by TF on the Classification of Environmental Activities (meeting of 27 and 28 June 2018). Different kinds of aquaculture were taken under consideration and discussed: marine, estuarine and inland/freshwater aquaculture, and especially the organic strand.

<sup>13</sup> Activities may consist of: measures for separating, containing and recovering deposits, extraction of buried casks and containers, decanting and re-storage, installation of off-gas and liquid effluent drainage networks, soil washing by means of degasification, pumping of pollutants, removal and treatment of polluted soil, biotechnological methods capable of intervening without affecting the site (use of enzymes, bacteria, etc.), physical and chemical techniques such as pervaporation and extraction using supercritical fluids, injection of neutral gases or bases to stifle internal fermentation, etc..

### **4.3 Protection of soil from erosion and other degradation of soil and water**

Activities and measures aimed at protecting soil from erosion and other physical and chemical degradation of soil and water (compacting, encrusting, marine water contamination, etc.).

It includes:

- activities intending to restore the protective vegetal cover of soils
- construction of anti-erosion walls
- organic farming as well as agricultural and grazing practices less harmful for soils and water bodies
- organic aquaculture

It excludes:

- agricultural production (outside the scope of CEPA or CReMA)
- protection of settlements against natural hazards such as landslides (outside the scope of CEPA or CReMA)

*Soil erosion* is the detachment and movement of topsoil or soil material from the upper part of the profile by the action of wind or running water especially as a result of changes brought about by human activity (such as unsuitable or mismanaged agricultural methods).

### **4.4 Prevention and remediation of soil salinity**

Activities and measures aimed at preventing salinisation or reducing salinity. Concrete actions will depend on climatic, geological and other country-specific factors.

It includes:

- actions to increase groundwater tables, e.g. through increased freshwater infiltration to avoid infiltration of seawater into groundwater bodies
- lowering of groundwater tables (when groundwater contains high levels of salts) through long-term re-vegetation programmes, changes in irrigation practices, etc.

It excludes:

- measures that respond to economic purposes (agricultural production, reclamation of land from the sea, etc.)

### **4.5 Monitoring and measurement and similar**

All activities and measures aimed at monitoring the quality and pollution of soils, groundwater and surface water, measuring the extent of soil erosion and salinisation etc.

It includes:

- the operation of monitoring systems
- inventories of "black spots"
- maps and databases of groundwater and surface water quality, soil pollution, erosion and salinity, etc.

#### **4.6 Other activities**

All other activities and measures aimed at protecting and remediating soil, groundwater, surface water and marine waters. It includes ETIGA activities specific to the CEPA 4, when they can be separated from other activities belonging to CEPA 4 and from similar activities related to other environmental protection classes.

## **5 NOISE AND VIBRATION ABATEMENT - *PROPOSAL***

*Noise and vibration abatement* refers to measures and activities aimed at the control, reduction and abatement of industrial and transport noise and vibration.

It includes:

- activities for the abatement of neighbourhood noise (soundproofing of dancing halls, etc.)
- activities for the abatement of noise and vibration in places frequented by the public (schools, etc.)

It excludes:

- abatement of noise and vibration for purposes of protection for employees in the workplace (outside the scope of CEPA or CReMA)

Noise abatement measures and activities are often also related to insulation and therefore energy saving. As an operational rule, activities are classified in CEPA 5 only if the laws or programs (public or private) governing these activities mention noise (or vibration) abatement as their single main objective. In all other cases they should be classified under CReMA 13B.

### **5.1 Preventive in-process modifications at the source**

Activities and measures aimed at reducing noise and vibration from industrial equipment, vehicle motors, aircraft and ships engines, exhaust systems and brakes, or noise level due to tyre/road or wheel/rail surface contact.

It includes:

- adaptation of equipment, vehicles (buses, trucks, or train and power units in the case of rail transport, aircraft and ships) in order to make them less noisy: soundproofing of hoods, brakes, exhaust systems, silencers etc.
- equipment and machines conceived or constructed for low noise or vibrations, low noise level flares and burners, etc.
- noise abatement through the modification of surfaces such as substituting concrete by silent asphalt, multi-layered surfaces, etc.

### **5.2 Construction of anti-noise/anti-vibration facilities**

Activities and measures aimed at installing and managing anti-noise / anti-vibration facilities.

It includes:

- screens, embankments or hedges
- covering sections of urban motor ways or railroads
- measures to limit industrial and vicinity noise:
  - add-on facilities, covering and soundproofing of machines and piping, fuel regulation systems
  - sound absorption, noise screens, barriers, soundproofing of buildings, noise protective windows

- plant modifications, specially conceived foundations to absorb vibrations, extra cost for regrouping of buildings and/or of facilities in the interest of noise abatement, special facilities in building construction or reconstruction

### **5.3 Monitoring and measurement and similar**

Activities and measures aimed at monitoring the level of noise and vibration such as installation and operation of stationary measurement and monitoring sites or mobile equipment in urban areas, observation networks, etc.

### **5.4 Other activities**

All other activities and measures aimed at noise and vibration abatement.

It includes:

- ETIGA activities specific to CEPA 5, when they can be separated from other activities belonging to CEPA 5 and from similar activities related to other environmental protection classes, for example:
  - training to raise awareness of noise issues (e.g. through educational initiatives for schools, educational media, and national or international campaigns such as “*International Noise Awareness Day*”)
- development of noise reduction action plans when separable,
- traffic management with noise abatement purposes
- introduction of time and geographical restrictions for noisy vehicles,
- bypass roads which divert traffic from residential areas
- creation of pedestrian areas,
- creation of construction-free buffer zones
- other measures such as financial incentives for the production and use of low-noise vehicles, labelling or information programmes for consumers which encourage the use of low-noise vehicles and the adoption of quiet driving behaviour

## **6 PROTECTION OF BIODIVERSITY AND LANDSCAPES - *PROPOSAL***

Biological diversity means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems<sup>14</sup>.

*Protection of biodiversity and landscape* refers, accordingly, to measures and activities aimed at protecting and replenishment of wild fauna and flora, safeguarding and restoring their habitats, ecosystems of which they are part, natural or semi-natural landscapes. Such measures and activities are included regardless of whether they occur in areas which are classified as protected areas.

The rehabilitation of abandoned mining and quarrying sites and related expenditure are included; while activities related to soil cleaning are to be reported under CEPA 4.

It excludes:

- the protection and rehabilitation of historic monuments or predominantly built-up landscapes
- the control of weeds for agricultural purposes
- the recreational structures and spaces such as urban parks and gardens, golf courses and other sports facilities
- management of zoos and of city greenery
- establishment and maintenance of green spaces along roads
- 'extraction' activities, such as 'hunting' or 'fishing',
- farming and gardening activities, (outside the scope of CEPA or CReMA with the exception of organic farming included under CEPA 4)

By convention, protection against forest fires for landscape protection purpose are also excluded (to be reported under CReMA 11A).

### **6.1 Protection and rehabilitation of species and their habitats**

Activities and measures aimed at the conservation, reintroduction or recovery of wild fauna and flora, and the restoration, rehabilitation and reshaping of damaged habitats for the purpose of strengthening their natural functions. All activities and measures aimed at maintenance and replenishment of all species of wild flora or fauna (irrespective of whether threatened by extension), including maintenance their habitats, are covered.

Management and development of protected areas, whatever their denomination, is included, i.e. areas in which economic exploitation is prohibited or in which it is subject to regulatory restrictions whose explicit goal is the conservation and protection of habitats. .

It includes:

- conserving genetic heritage, monitoring and restricting (placing bans on) exploitation, trade, etc. of specific animal and plant species, for protection purposes
- creation of gene reserves or banks, improvement of linear infrastructures (e.g., underground passages or bridges for animals at highways or railways, the restoration of

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<sup>14</sup> Convention on Biodiversity, Article 2, <https://www.cbd.int/convention/text/>

small-scale structures like hedges or orchards, green bridges etc.), feeding of the young, management of special natural reserves (botanical conservation areas, etc.)

- re-introduction of native species and control of invasive alien species that pose a threat to native fauna, flora and habitats
- restoration activities (replenishment of wild flora and fauna stocks)  
For example: repopulation of stocks of wild fauna by introducing new individuals
- purchase of land for protection of species and habitats

## **6.2 Protection of natural and semi-natural landscapes**

Activities and measures aimed at protecting natural and semi-natural landscapes to maintain and increase their ecological value.

It includes:

- the preservation of legally protected natural objects
- expenditures incurred for the rehabilitation of abandoned mining and quarrying sites
- renaturalisation of river banks
- burying electricity lines
- maintenance of landscapes that are the result of traditional agricultural practices threatened by prevailing economic conditions, etc.
- *activities for the restoration of water bodies as aquatic habitats: artificial oxygenation and lime-neutralisation actions*
- biodiversity and landscape protection related to agriculture
- protection of forests against forest fires for landscape protection purpose

It excludes:

- measures taken in order to protect historic monuments, measures to increase aesthetic values for economic purposes (e.g., re-landscaping to increase the value of real estates)
- protection of predominantly built-up landscapes

## **6.3 Monitoring and measurement and similar**

Monitoring and analysis activities which are not classified under the preceding items. Censuses, inventories, databases of flora and fauna are included.

## **6.4 Other activities**

All other activities and measures aimed at protecting species and habitats and landscapes. It includes ETIGA activities specific CEPA 6, when they can be separated from other activities belonging to CEPA 6 and from similar activities related to other environmental protection classes.

## **7 PROTECTION AGAINST PARTICLE RADIATION (excluding external safety) - PROPOSAL**

*Protection against particle radiation* refers to activities and measures aimed at the reduction or elimination of the negative consequences of particle radiation emitted from any source.

*Radioactive waste* is defined as any material that contains or is contaminated with radionuclides at concentrations or radioactivity levels greater than the "exempt quantities" established by the competent authorities, and for which no use is foreseen. Radioactive wastes are produced at nuclear power plants and at associated nuclear fuel cycle facilities as well as through other uses of radioactive material, for example, the use of radionuclides in hospitals and research establishments. Other important wastes are those from mining and milling of uranium and from the reprocessing of spent fuel.

It includes

- handling, transportation and treatment of high-level radioactive waste, i.e. waste that, because of its high radionuclide content, requires shielding during normal handling and transportation.

It excludes:

- activities and measures related to the prevention of technological hazards (e.g. external safety of nuclear power plants) (outside the scope of CEPA or CReMA)
- protection measures taken at workplaces (outside the scope of CEPA or CReMA)
- activities related to collection and treatment of low-level radioactive waste (see CEPA 3)
- activities and measures relating to electromagnetic and acoustic radiation.

### **7.1 Protection of ambient media**

Protection of soil, air and water and other ambient media from radiation.

It includes:

- protection measures such as screening, creation of buffer zones, etc.

### **7.2 Transport and treatment of high-level radioactive waste**

Any process designed for the transport, conditioning, containment or underground disposal of high-level radioactive waste.

*Collection and transport of high-level radioactive waste* consists of the collection of high-level radioactive waste, generally by specialised firms and their transport to the place of treatment, conditioning storage and disposal.

*Conditioning of high-level radioactive waste* consists of activities that transform high level radioactive waste into a suitable condition for transport and/or storage and/or disposal. Conditioning may occur as part of ISIC/NACE 24.46 (processing of nuclear fuel) activities.

*Containment of high-level radioactive waste* designates the retention of radioactive waste which effectively prevents it from dispersing into the environment, or facilitates dispersion only at an acceptable level. Containment may occur in specially built containment spaces.

*Underground disposal of high-level radioactive waste* is the temporary storage or final disposal of high-level radioactive waste in underground sites that meet specific geological and technical criteria.

### **7.3 Monitoring and measurement and similar**

Activities aimed at monitoring ambient radioactivity and radioactivity due to high level radioactive waste by means of specific equipment, instruments and installations.

### **7.4 Other activities**

All other activities and measures aimed at protecting ambient media against radiation, and transport and treatment of high-level radioactive waste. It includes ETIGA activities specific to CEPA 7, when they can be separated from other activities belonging to CEPA 7 and from similar activities related to other environmental protection classes.

## **8 RESEARCH AND DEVELOPMENT - *PROPOSAL***

This class covers R&D for the prevention and elimination of all forms of pollution and R&D oriented towards equipment and instruments for pollution measurement and analysis. When separable, all R&D activities even when referring to a specific class have to be classified under CEPA 8.

Research and development (R&D) comprises “creative and systematic work undertaken in order to increase the stock of knowledge...and to devise new applications of available knowledge” (see Frascati manual, OECD 2015) in the field of environmental protection. Environmental R&D is classified in accordance with the 2007 NABS (Nomenclature for the Analysis and Comparison of Scientific Programmes and Budgets).

It includes:

- identification and analysis of sources of pollution, mechanisms of dispersion of pollutants in the environment as well as their effects on human beings and the biosphere

It excludes:

- R&D activities related to the management of natural resources (see CReMA 15).

## **9 OTHER ENVIRONMENTAL PROTECTION ACTIVITIES - *PROPOSAL***

*Other environmental protection activities* refers to regulation and ETIGA activities related to environmental protection that cannot be classified elsewhere. When possible such activities should be allocated to other classes.

It includes:

- activities aimed at the general support of decisions taken in the context of environmental protection activities by government or non-government bodies
- regulation by government bodies
- environmental management by businesses
- activities not elsewhere classified

### **9.1 General environmental administration, management and regulation**

It includes:

- the administration, management and support decisions regarding environmental protection by government and non-government bodies. In turn this includes:
  - preparation of declarations or requests for permission
  - internal environmental management
  - environmental certification process (ISO 14000, environmental management)
  - activities of units specialised in environmental consultancy, supervision and analysis
- regulation by the government

### **9.2 Education, training and information**

Activities aimed at providing general environmental education or training and disseminating environmental information not elsewhere classified.

It includes:

- high school programs
- university degrees or special courses specifically aimed at training for environmental protection
- environmental reports, environmental communication, etc. are also included

### **[9.3 *Activities leading to indivisible expenditure*] – obsolete, to be discontinued**

*Environmental protection activities that lead to indivisible expenditure, i.e. which cannot be allocated to any other CEPA class. International financial aid may be a case in point as it may be difficult for the donor countries to attribute international aid to individual classes. If international aid is important in volume and/or of specific political interest, a separate 2-digit heading under CEPA 9 could be adequate for national purposes.*

### **9.4 Activities not elsewhere classified**

This position groups together all environmental protection activities that cannot be classified under other CEPA classes.

International financial aid may be a case in point as it may be difficult for the donor countries to attribute international aid to individual classes. If international aid is important in volume and/or of specific political interest, a separate 2-digit heading under CEPA 9 could be adequate for national purposes.

## Appendix 3 – CReMA explanatory notes: proposal

### Introduction

This note presents definitions, explanations, and examples of resource management activities, that is, economic activities aimed at preserving and enhancing the stock of natural resources. Relevant activities are herein classified according to a generic Classification of Resource Management Activities (CReMA) developed by Eurostat Task Forces<sup>15</sup>.

Resource Management activities include the preservation, maintenance and enhancement of the stock of natural resources and therefore the safeguarding of those resources against depletion.

CReMA classifies resource management activities into seven main categories, and is complemented by the Classification of Environmental Protection Activities (CEPA) that classifies activities aimed at preventing, reducing and eliminating pollution or any other environmental degradation.

With the start of the mandatory reporting for monetary-environmental accounts in 2017<sup>16</sup>, questions about how to classify certain goods, services, and expenditures emerged. Soon it became apparent that the available guidance requires clarification and more in-depth explanation to ensure that activities and transactions are recorded in a harmonised manner across countries.

This document presents an updated guidance on how to classify and determine the scope of resource management activities for compiling and reporting of environmental monetary accounts. The explanations and examples reflect the discussions in the MESA working group, the task force on the classification of environmental activities and the feedback from countries during the 2017 and 2018 data collections.

Annex A presents recommendations for the treatment of specific borderline cases. Eurostat's notes providing guidance on the treatment of specific activities and products and/or addressing related methodological or compilation questions ('Guidance notes'), and published alongside these CEPA explanatory notes, shall also be consulted and taken into consideration.

Annex B provides a list of Guidance Notes and related links.

### **CREMA 10: MANAGEMENT OF WATER – PROPOSAL**

Management of water comprises activities aimed at the minimisation of intake from inland waters and activities aimed at increasing stocks of water.

It includes:

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<sup>15</sup> Important inputs to develop the CReMA also came from work by Istat (Ardi, C. and Falcitelli, F., The Classification of Resource Use and Management Activities (CRUMA) and Expenditure, Istat, Rome, 2007)

<sup>16</sup> Mandated by Regulation (EU) No 691/2011 (<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02011R0691-20140616&from=EN>)

- activities aimed at reducing the intake of water per unit of output through IPMs. This includes all kinds of adjustment of technologies.  
*For example:* desalinization of seawater, rainwater collection, cultivation of plants that use less water for agriculture and the construction and installation of drip irrigation systems.
- Activities aimed at the reduction of water losses and leaks, water reuse and savings.  
*For example:* construction or installation of water re-use systems, i.e. of systems which capture rainwater or transform wastewater (from industrial processes or households' use) into water that can be used in production processes or by households (e.g. for irrigation, toilet flushing) and of water saving systems for taps, toilets etc., maintenance and repair of water pipelines, water recirculation and more water efficient white goods or installations.
- Activities aimed at increasing water stocks.  
*For example:* recharge of groundwater bodies through infiltration systems, development of vegetal cover and landscape works to increase water infiltration.
- Activities aimed at measuring and monitoring the use and the level of water stocks.  
*For example:* M&M, manufacture of electric contact gauge or pressure probes.
- Other activities and measures aimed at managing water resources. These include regulation and ETIGA activities specific to the CReMA 10 when they can be separated from other activities belonging to CReMA 10 and from similar activities related to other classes.  
*For example:* information campaigns to encourage water savings, release of licences for water abstraction, general government units or parts thereof that administer and regulate the use of water resources or are responsible for water saving policies.

It excludes:

- Activities of collection, treatment and distribution of water other than the ones mentioned above.
- Activities related with the maintenance of the quality of water bodies (see CEPA 4).
- Activities related to the restoration of aquatic habitats (see CEPA 6).
- Activities performed for the main purpose of improving water quality, fighting water salinity, e.g. in coastal areas or protection of soil against erosion e.g. in mountainous areas, (see CEPA 2 and CEPA 4).
- Activities associated with the reduction of the use of cooling water and more efficient cooling in the energy sector (see CEPA 2).
- M&M related to monitoring pollutant concentrations in wastewater and water quality at the place wastewater is discharged (see CEPA 2).
- M&M related to the monitoring of surface water quality and groundwater and marine waters (see CEPA 4).
- Activities related to dykes and embankments (e.g. damming activities) as they are related to natural risk management and protection of human property.
- Construction of dams and reservoirs on rivers for the purposes of increasing water stocks. These are excluded due to the negative effects of these activities on rivers as ecosystems.

## **CREMA 11: MANAGEMENT OF FOREST RESOURCES – PROPOSAL**

The management of forest resources concerns all types of forests (planted, natural or naturally regenerated according to SEEA classification) in both forests available for wood supply and forests not available for wood supply, but excluding the management of protected areas and nature conservation activities<sup>17</sup> It includes activities related to the preservation and replenishment of timber stocks and sustainable management of forests while activities related to roundwood production (both industrial roundwood and fuelwood) and extraction of non-wood forest products are excluded.

It includes:

- Sustainable management of forest areas (CReMA 11A)
- Minimisation of the intake of timber resources (CReMA 11B)

It excludes:

- Extraction of wood (logging) and wild growing non-wood forest products. Non-wood forest products are mushrooms, truffles, berries, nuts, balata and other rubber-like gums, cork, lac and resins, balsams, vegetable hair, eelgrass, acorns, horse chestnuts, mosses and lichens.
- Production of fuel wood (see CReMA 13A).

## **CREMA 11A: SUSTAINABLE MANAGEMENT OF FOREST AREAS – PROPOSAL**

It includes:

- Restoration, replenishment activities or development of new forest areas.  
*For example:* reforestation and afforestation, machinery for planting.
- The prevention and control of forest fires, biological and mechanical control of pests.  
*For example:* development of firewalls.
- Forest-management-related land improvements  
*For example:* soil conservation, fertilisation and liming to improve soil properties, terracing works to reduce erosion, reclamation of unproductive land and land from sea for forestry
- M&M.
- ETIGA activities linked to the management of forests.

By convention, protection of forests against forest fires, in all forests, including protected forests and forest not available for wood supply is included.

It excludes:

- Pest control using chemical agents (of non-biological origin)
- Buildings, unless serving exclusively forest-related environmental purpose
- Machinery associated with timber extraction and machinery associated with fire-protection unless serving exclusively to fight forest fires.

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<sup>17</sup> Protected areas” include areas designated under both national and EU legislation, i.e. both national parks (other relevant protected areas existing under national legislation) and Natura 2000 areas

**CREMA 11B: MINIMISATION OF THE INTAKE OF TIMBER RESOURCES –  
PROPOSAL**

It includes:

- activities aiming at minimising the intake of timber resources per unit of output through IPMs.  
*For example:* wood saving saws, more efficient wood stoves and furnaces.
- Recovery, reuse or savings of forest products and by-products.  
*For example:* reuse of timber products.

## CREMA 12: MANAGEMENT OF WILD FLORA AND FAUNA STOCKS<sup>18</sup> – PROPOSAL

*[This classification heading will become obsolete once all relevant activities are combined with Protection of biodiversity and landscape (CEPA6)]*

*Management of wild flora and fauna comprises activities aimed at the minimisation of the intake of wild flora and fauna (wild growing forest products are excluded) through IPMs as well as withdrawals reduction and regulation measures.*

*It includes:*

- *Activities aimed at the minimisation of the intake of wild flora and fauna (wild growing forest products are excluded) through IPMs.  
For example: production of fishing nets which reduces the by-catch, production of pesticides with no (lower) impact on the wild flora, algorithm to switch off the wind turbines, the installation of warning sounds to protect the bats.*
- *Restoration activities (replenishment of wild flora and fauna stocks).  
For example: repopulation of stocks of wild fauna by introducing new individuals, the restoration of small-scale structures (like hedges or orchards, green bridges)*
- *Activities and products concerning M&M.  
For example: monitoring of bat activities to find out the optimal switch-off times for wind turbines, surveillance camera for wild animals.*
- *ETIGA activities linked to the management of wild flora and fauna.  
For example: general government activities for preserving stocks through the enforcement of quotas, regulation, monitoring, control for e.g. fishing activities, the management of wild game reserves which preserves resource functions (SEEA CF).*

*It excludes:*

- *Aquaculture and fish farming.*
- *The protection of biodiversity which concerns essentially threatened species (see CEPA 6).*

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<sup>18</sup> The Task Force proposes that items originally to be recorded under CReMA 12 are to be recorded under CEPA 6. Rationale: great difficulties in identifying and clearly defining in practice the boundary between CReMA 12 and CEPA 6, and in addition, not seeing clear users of the two domains when compiled separately.

## **CREMA 13: MANAGEMENT OF ENERGY RESOURCES – PROPOSAL**

Management of energy resources comprises activities aimed at the minimisation of the intake of fossil resources through the production of energy from renewable sources, heat/energy saving and management and the minimisation of the intake of fossil resources for uses other than energy production. Exploitation and management of the stocks of non-renewable energy sources (including exploration and discovery of new reserves) are excluded. Also excluded are measures that improve the efficiency of extraction of energy resources.

## **CREMA 13A: PRODUCTION OF ENERGY FROM RENEWABLE SOURCES – PROPOSAL**

It concerns the production of energy from renewable sources, as well as the related activities of:

- Monitoring of renewable energy production.
- Inventories of the potential for renewable energy production and similar.
- Administration, and information provision etc.

Sources<sup>19</sup> for the production of renewable (non-fossil) energy are:

- Wind
- Solar
- Aero-thermal
- Geothermal
- Hydrothermal and ocean energy
- Hydropower, excluding pump storage stations (which is to be recorded in CReMA 13B)
- Biomass<sup>20</sup>
- Landfill gas
- Sewage treatment plant gas and biogas.

It includes:

- Production of electricity, heat and fuels from renewable sources.  
*For example:* production of electricity from wind, production of heat from aerothermal hydrothermal and geothermal sources, production of biofuels for transport, production of biogas and biofuels from waste etc., fuel wood production, wood pellets and other wood or vegetal based energy products, biofuels from recycled materials (cooking oil), production of renewable energy as non-market output for own use by households and as secondary output by producers classified in other industries<sup>21</sup>.
- Production of energy through incineration of biodegradable waste
- Production of energy from cogeneration plants using renewable fuels for this purpose
- Specific equipment for the production of energy from renewable sources and integrated technologies.

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<sup>19</sup> The directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009.

<sup>20</sup> Biomass is defined as the biodegradable fraction of products, waste and residues of biological origin from nature, agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste. Biomass includes biofuel and biogas.

<sup>21</sup> According to NACE Rev. 2 (see paragraph 53 d): “production of energy ... even if the whole output is consumed by the parent unit” is not to be considered as ancillary production. Therefore renewable energy production of enterprises for auto consumption should be accounted for as secondary production.

*For example:* solar panels, photovoltaic cells, hydraulic turbines, wind turbines, fire wood and other biomass boilers.

- Energy storage technology associated with renewable energy source (e.g. compressed air storage power stations, sensitive heat storage systems, latent heat storage system, hydrogen storage, power to gas i.e. storage of wind power in the form of hydrogen/methane)
- Activities and products concerning M&M.
- *For example:* inventories and assessments of the potential for renewable energy production. Regulation and ETIGA activities concerning renewable energy when they can be separated from other activities in CReMA 13A and from similar activities related to other resource management classes.

It excludes:

- waste incineration without energy production recovery (CEPA 3)
- waste incineration with energy recovery from non-biodegradable waste where biodegradable and non-biodegradable waste fractions cannot be separated (CReMA 13B)
- exploitation, management and maintenance of the stocks of non-renewable energy sources, including exploration and discovery of new reserves.
- activities aimed at the use of renewable energy (e.g. distribution), that falls under the scope of resource use (RU).

## **CREMA 13B: HEAT/ENERGY SAVING AND MANAGEMENT – PROPOSAL**

It includes:

- Activities and products aiming at minimising the intake of energy from non-renewable energy sources through IPMs. These activities are often carried out as ancillary or own-final-use activities.  
*For example:* replacement or adjustment of production processes (including energy production processes), heat and electricity cogeneration from non-renewable sources, manufacturing and installation of cogeneration plants and their components; reducing losses in energy transportation, improvement of energy efficiency, pumped-storage hydropower, certain elements of smart grids, such as smart meters and specific software.
- Activities and products aiming at minimising heat and energy losses and maximisation of energy recovery.  
*For example:* insulation of buildings, production (recovery) of energy from non-biodegradable waste, use of pressure differences with e.g. expansion turbines, exhaust air afterburning.
- Activities and products concerning M&M related to energy saving.  
*For example:* audits, production of energy performance certificates and assessments of energy savings potentials.
- ETIGA linked to the management and saving of heat and energy.

It excludes:

- The production of energy from either renewable sources (CReMA 13A) or fossil fuels.
- Activities mainly aimed at reducing air pollution. By convention, electric and more resource efficient vehicles are to be reported as cleaner products under CEPA 1.
- Operation of cogeneration plants that use renewable fuels (CReMA 13A).

## **CREMA 13C: MINIMISATION OF THE INTAKE OF FOSSIL ENERGY RESOURCES AS RAW MATERIAL – PROPOSAL**

It includes:

- Activities aiming at the minimisation of the intake of fossil energy resources for uses other than energy production (e.g. the production of plastics, chemicals, rubber) through IPMs. These activities are mainly carried on as ancillary or own-final-use activities.  
*For example:* replacement or adjustment of technologies.
- Recovery of materials made from fossil energy resources.  
*For example:* processing of petro-based waste into secondary raw materials (plastic recovery); recovery of textiles (from petrochemical materials), recycled inkjet and toner cartridges for printers.
- Production of substitutes for materials made of fossil fuels.  
*For example:* bio-based sacks and bags, including paper bags, for replacing plastic bags; other bio-based plastics, composites, lubricants, solvents, detergents, paints, lacquers, varnishes and packaging, etc. which replace comparable and commonly used fossil-fuel based products.
- Activities and products concerning M&M related to the reduction of the use of fossil fuel for uses other than energy production.

- ETIGA activities linked to the management and saving of fossil resources used as an input for production processes other than energy production.

It excludes:

- Waste management activities (CEPA 3)

## **CREMA 14: MANAGEMENT OF MINERALS – PROPOSAL**

Minerals are naturally occurring substances which are generally solid, inorganic and a-biogenic. Mineral raw materials are subdivided into metallic (e.g. iron, aluminium) and non-metallic (e.g. potash, rock salt) raw materials.

It includes:

- Activities aimed at minimising the intake of minerals through e.g. IPMs. These activities are mainly carried on as ancillary or own-final-use activities.  
*For example:* all the kinds of replacement or adjustment of production processes aiming at reducing the use of mineral resources; backfilling using demolition waste.

- Activities that aim at substituting mineral-based materials by wood-based materials (or materials made of other abundant, renewable resource) for construction.

- Activities aimed at reducing scrap and the recovery of mineral based materials. This includes the processing of metallic and non-metallic mineral materials waste and scrap and end-of-life products into secondary raw materials.

*For example:*

- Mechanical crushing or reduction of metal waste from used cars, washing machines, bikes, railway wagons etc.
  - Shredding of metal waste, end-of-life vehicles, dismantling of vessels, etc.
  - Physical-chemical and thermal processes for recovery especially for metals.
  - Other methods of mechanical treatment as cutting, pressing to reduce the volume.
  - Reclaiming metals out of photographic waste, e.g. fixer solution or photographic films and paper; recycling of spent batteries and accumulators.
  - Crushing, cleaning and sorting of glass.
  - Crushing, cleaning and sorting of other waste such as demolition waste to obtain secondary raw material.
- Activities and products concerning M&M and similar related to the reduction of minerals use.
  - ETIGA activities linked to the management of minerals.

It excludes:

- Activities related to the management of biological natural resources, water, and fossil energy resources.
- Exploitation of mineral resource stocks (including exploration and discovery of new reserves).
- Measures and activities that improve the efficiency of mineral resources extraction.

- The collection, transportation and sorting of waste (CEPA 3).
- The production of energy from waste (CReMA 13A and 13B).
- The production of recycled paper and recycled wooden products (CReMA 11).

## **CREMA 15: RESEARCH AND DEVELOPMENT ACTIVITIES FOR RESOURCE MANAGEMENT – PROPOSAL**

Research and development activities for resource management comprise creative work and systematic work undertaken in order to increase the stock of knowledge and to devise new applications of available knowledge in the field of resource management.

It includes:

- R&D for renewable energy
- R&D for energy and minerals savings
- R&D for timber and other biological resources savings, etc.

It excludes:

- R&D activities related to environmental protection (see CEPA 8).

## **CREMA 16: OTHER RESOURCE MANAGEMENT ACTIVITIES – PROPOSAL**

Other resource management activities refer to all regulation and ETIGA activities related to resource management in the case that they cannot be classified elsewhere. When possible, such activities should be allocated to other classes.

It includes:

- Activities aimed at the general support of decisions taken in the context of resource management activities by government or non-government bodies.  
*For example:* preparation of declarations or requests for permission, internal resource management, environmental certification processes (ISO 14000, environmental management), activities of units specialised in consultancy, supervision and analysis, regulation.
- Education, training and information.  
*For example:* high school programs, university degrees or special courses specifically aimed at training for resource management.
- Activities not elsewhere classified.  
All resource management activities that cannot be classified elsewhere are reported here.  
*For example:* international financial aid due to difficulties in attributing international aid to individual classes. If international financial aid is important in volume and/or of specific political interest, a separate 2-digit heading under CREMA 16 could be adequate for national purposes.

## Acronyms [NEW]

ETIGA: Education, Training, Information provision and General Administration

IPM: In-Process Modification

M&M: Monitoring and Measurement and similar

RM: Resource Management

RU: Resource Use

R&D: Research and Development

## **Annex A: OPERATIONAL RULES FOR BOUNDARY CASES**

[NEW]

This Annex presents recommendations for the treatment of specific cases<sup>22</sup>.

### **CEPA 3/CReMA**

#### **Waste recovery and waste management**

Waste management and materials recovery activities have to be classified under CEPA 3 and CReMA (i.e. 11B, 13C or 14) respectively. Classification of products by activity (CPA) is the best reference classification to separate out these activities. However, if information based on CPA is not available, the classification of economic activities (NACE) can be used by convention to split waste management and materials recovery activities. The output of NACE groups 38.1 (waste collection) and 38.2 (waste treatment and disposal) should be allocated to CEPA 3 and output of NACE 38.3 (Materials recovery) should be allocated to the correct CReMA category (i.e. 11B, 13C or 14).

Obviously the method using only NACE without taking into account the products resulting from the activity (CPA classification) is a simplification which results in possible over-/underestimation of output allocated to CEPA 3 and CReMA.

To illustrate the point, you might consider a unit classified under NACE group 38.2+38.1 that carries out other activities in addition to the principal ones, e.g. crashing and cleaning of glass (materials recovery). Output of this secondary activity will be recorded under CEPA 3 according to the simplified approach, i.e., where only NACE classification is used. This will result in an overestimation of output of CEPA 3 and underestimation of output of CReMA 14. For this reason, the simplified approach - based only on NACE classification - should be used when no detailed information (by CPA) is available.

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<sup>22</sup> The technical recommendations are the results of discussion of TF on Classification of environmental activities.

### **CReMA 13A / CEPA 3**

#### **Production of biogas and biofuels from waste**

Production of biogas and biofuels from waste is reported under CReMA 13A. When different data sources and consequently different classifications are used, issues of double counting may arise.

In this specific case double counting occurs if:

- waste management output is estimated based on NACE classification (38.1+38.2 NACE groups) and
- production of biogas and biofuels from waste is estimated based on CPA.

Double counting occurs because NACE 38.2 already covers production of biogas from waste<sup>23</sup>. To avoid double counting, production of biogas and biofuels has to be deducted from total waste management output in CEPA 3.

### **CReMA 13A and 13B / CEPA 3**

#### **Production of energy through incineration of waste**

Production of energy through incineration of waste is reported under CReMA 13A (from biodegradable waste) and CReMA 13B (from non-biodegradable waste). When different data sources and consequently different classifications are used issues of double counting may arise.

In this specific case double counting occurs if

- waste management output is estimated based on NACE classification (38.1+38.2 NACE groups) and
- production of energy from incineration of waste is estimated based on CPA.

Double counting occurs because NACE 38.2 covers incineration of waste regardless of whether energy is produced<sup>24</sup>. To avoid double counting, production of energy from waste (biodegradable and non-biodegradable) has to be deducted from total waste management output in CEPA 3.

### **CReMA 11B/13C/14**

#### **Allocation of “indivisible” materials recovery activities**

Materials recovery activities have to be allocated to the correct CReMA categories, i.e. CReMA 11B or 13C or 14 based on the relevant data sources available.

If for some “residual” materials recovery activities no information is available to estimate the split by type of material, they should be allocated by convention under the CReMA category (11B, 13C or 14) which represent the dominant component in terms of value based on the estimates of materials recovery activities already allocated.

### **CEPA 4/CEPA 6/CReMA 11 A.**

The broad definition of the scope of CEPA 6 can lead to some overlapping with CEPA 4 and CReMA 11 A, since forest resources and soil, groundwater and surface water are part of the

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<sup>23</sup> NACE 38.21 includes: “[...] disposal of non-hazardous waste by combustion or incineration or other methods, with or without the resulting production of electricity or steam, compost, substitute fuels, biogas, ashes or other by-products for further use etc. [...]”

<sup>24</sup> See footnote 16

landscapes. Arguably, in a specific area there can occur activities to preserve groundwater, to protect biodiversity or to avoid depletion of forest resources. Depending on the characteristics of the areas, the activities could have one, two or even three different purposes.

In such cases, apart from the specific conventions established in each environmental domains, the operational rule will be the following:

- Allocation to CEPA 4 if it can be proved through laws, programmes or any other evidence that the activity has as its main environmental purpose the protecting of soil, groundwater and surface water.
- Allocation to CReMA 11 A if it can be proved through laws, programmes or any other evidence that the activity has as its main environmental purpose the managing of forest resources.
- Allocation to CEPA 6 if it can be proved through laws, programmes or any other evidence that the activity has as its main environmental purpose the protection of biodiversity and landscapes or if there is no clear evidence in favour of the other two environmental domains (i.e., CEPA 4 or CReMA 11A).

## **Annex B: Eurostat Guidance Notes accompanying the CEPA and CReMA explanatory notes**

Eurostat Guidance Note '*Reporting of energetic refurbishment and construction of construction of new energy-efficient buildings in EGSS*' [add reference to the Guidance Note once finalised and available on the website]

Eurostat Guidance '*Reporting of electric and more resource-efficient transport equipment in EPEA and EGSS*' [add reference to the Guidance Note once finalised and available on the website]