

# Study supporting the development of general guidance on the implementation of the Extractive Waste Directive – Final workshop (ENV.B.3/ETU/2017/0039)

## Background document

### Webinars: 8, 11 & 12 June 2020

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## CHAPTER 1 INTRODUCTION

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The tender “ENV.B.3/ETU/2017/0039 - Study supporting the development of general guidance on the implementation of the Extractive Waste Directive (EWD)” has been launched because of the outcomes of the EWD implementation report, published in 2016. According to that report it was concluded that the majority of Member States (MS) have adopted the measures needed to implement the EWD.

There are, however, a number of obstacles to the European Commission assessing the implementation of the EWD. The EWD implementation report identifies that 1) the incomplete and inconsistent set of data is a major obstacle for the European Commission to assess the implementation of the EWD and 2) the diverging interpretations of the EWD are a likely source of inconsistencies in the data reported by MS. This project focusses on a reliable description of the material streams resulting from the extractive sector and their management which might lead to an exchange with MS towards a uniform understanding and application of the EWD.

This is intended to be achieved by deepening the understanding of the material flows, harmonising MS approaches to data collection and reporting, and thereby achieving a greater understanding of compliance.

The specific tasks of the study, illustrated in Figure 1 are to:

- Develop a coherent description of the extractive sectors and the main waste streams (Tasks 1 to 4 & 7,9), in view of delivering plausible information on the amounts of waste generated and the corresponding waste facilities;
- Foster a uniform understanding of the key concepts of the Directive by MS (Tasks 6) and;
- Contribute to improving the effectiveness and efficiency of the reporting of the EWD implementation (Tasks 8, 10, 11).

The final workshop which will be organized as three separate webinars focussing on:

- Production and waste reporting (Webinar I, 8<sup>th</sup> June 2020);
- Category A Waste Facilities (Webinar II, 11<sup>th</sup> June 2020);
- Sustainable and transparent management of extractive waste (Webinar III, 12<sup>th</sup> June 2020).

The agenda of the webinars is given in Annex 1.

The objectives of the final webinars based on the Terms of Reference and taking into account the findings in the project are to: 1) address gaps in the information of mineral material flows; 2) increase the exchange of information between MS and project consortium; and, 3) integrate the project’s results with the aim to further foster compliance promotion activities carried out by the Commission.

During the webinars we expect to discuss:

- Possibilities for more differentiated statistics of extractive waste related data; and,
- Key elements for an improved triennial reporting on implementation.

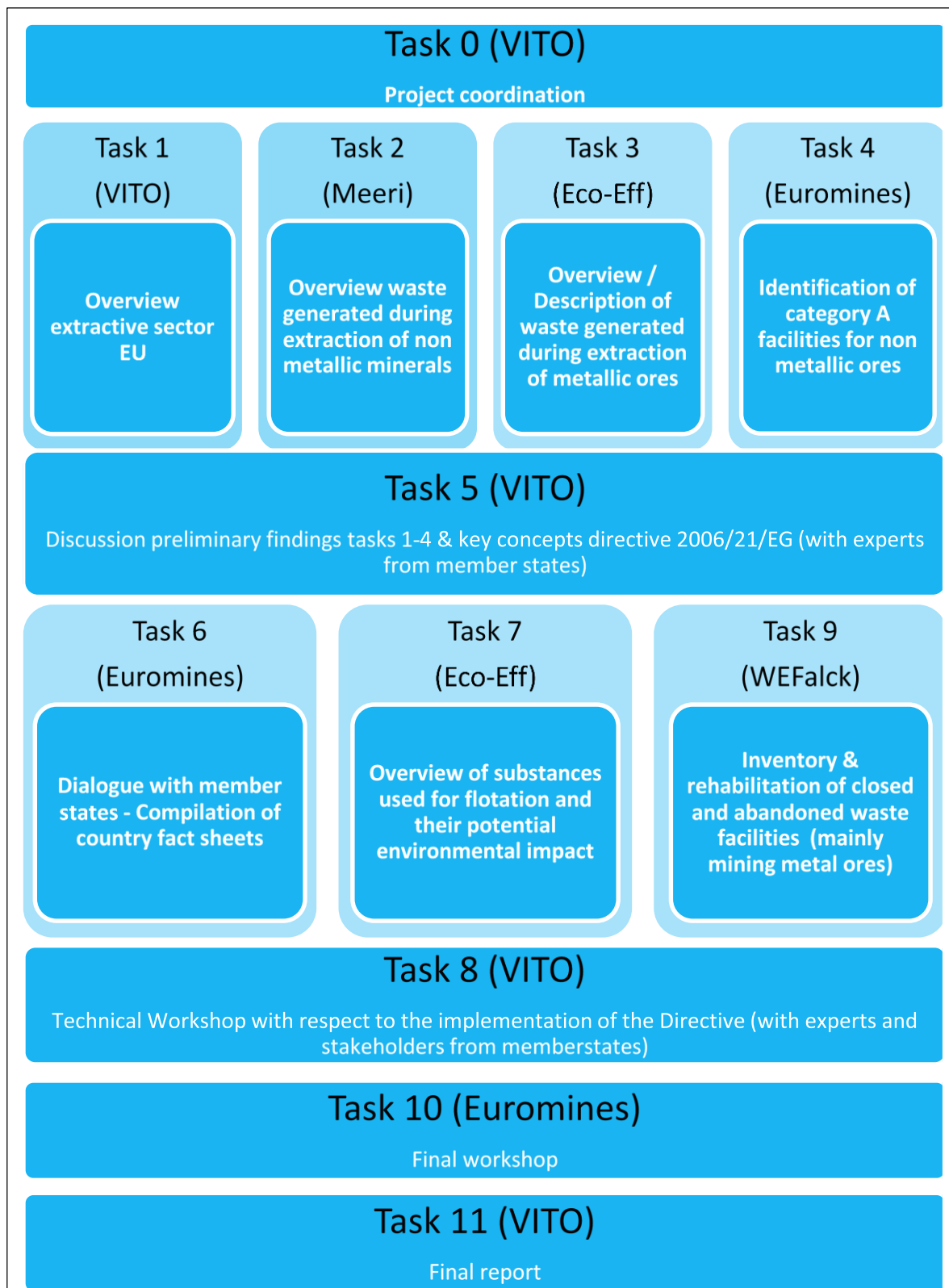


Figure 1: Schematic project overview



## CHAPTER 2 WEBINAR I, PRODUCTION AND WASTE REPORTING (08/06/2020)

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### 2.1. INTRODUCTION

The first webinar will cover:

- Examples of common/differing interpretation of key concepts ('waste', 'treatment');
- The current practice with regard to the reporting according to the EC waste codes, and their relevance in light of the policies such as the resource efficiency, waste minimisation and Circular Economy.

### 2.2. DEFINITION OF EXTRACTIVE WASTE AND EXTRACTIVE WASTE TREATMENT

One of the targets of the project was to estimate the amounts and the types of waste generated during the extraction and processing of minerals. The aggregated figures needed to be compared with the figures reported by the MS. The figures were improved/corrected by implemented corrective actions since every extractive site and especially every metal mine is almost unique: the type, amounts and characteristics of extractive waste differs, depending on the deposit, the geology, the choice of mining technique (open-pit vs underground) and the process technology applied for the mineral processing.

#### 2.2.1. WASTE

The Directive 2006/21/EC (hereinafter EWD) covers the management of waste resulting from the prospecting, extraction, treatment and storage of mineral resources and the working of quarries, hereinafter 'extractive waste', but excluding:

- Waste which is generated by the prospecting, extraction and treatment of mineral resources and the working of quarries, but which does not directly result from these operations;
- Waste resulting from offshore prospecting, extraction and treatment of mineral resources;
- Injection of water and reinjection of pumped groundwater as defined in the first and second indents of Article 11(3)(j) of Directive 2000/60/EC, to the extent authorised by that Article.

#### 2.2.2. TREATMENT

Within the definition of extractive waste, the term "treatment" requires clarification. It is defined by the EWD as the mechanical, physical, biological, thermal or chemical process or combination of processes carried out on mineral resources, including from the working of quarries, with a view to extracting the mineral, including size change, classification, separation and leaching, and the re-processing of previously discarded waste. **It excludes smelting, thermal manufacturing processes (other than the burning of limestone) and metallurgical processes.**

### 2.2.3. INTERPRETATION OF RELATED CONCEPTS

One of the questions raised by the European Commission concerns waste used as backfilling - "Do MS consider waste, derived from mineral processing and used as a material to fill the excavation void after extraction of the mineral, as non-waste or is it a waste stream that should be managed according to Article 5 and/or Article 10 of the EWD?"

According to Judgement of the Court in Case C-114/01 of the 11th September 2003 *"the holder of leftover rock and residual sand from the ore-dressing operations from the operation of a mine discards or intends to discard those substances, which must consequently be classified as 'waste', unless he uses them lawfully for the necessary filling in the galleries of that mine and provides sufficient guarantees as to the identification and actual use of the substances to be used for that purposes. [...] Only if such use of those residues were prohibited, in particular for reasons of safety or protection of the environment, and the galleries had to be sealed and supported by some other process, would it have to be considered that the holder is obliged to discard those residues and that they constitute waste."* The Technical report CEN/TR 15310-1 explains that *"testing of wastes allows informed decisions to be made on how they should be treated (or not), recovered or disposed of"*.

According to Article 5 of the EWD, operators are legally required to categorise extractive waste according to the relevant European List of Waste entry when submitting their Extractive Waste Management Plans. According to the Decision 2014/955/EU on the List of Waste (LoW), waste resulting from exploration, mining, quarrying, and physical **and chemical** treatment of minerals are reported in the LoW with the 01 as two first digits and are subdivided as the following:

- Wastes from mineral excavation (waste codes 01 01);
- Wastes from physical and chemical processing of metalliferous minerals (code 01 03);
- Wastes from physical and chemical processing of non-metalliferous minerals (code 01 04);
- Drilling muds and other drilling wastes (waste code 01 05).

A first observation that can be made, is that waste from metallurgical processes should not be considered extractive waste, because according to the European List of Waste (LoW) the first step for the classification of waste is the identification of the source that generates waste. In legal terms, any waste from the treatment of concentrate to metal is a metallurgical waste covered by section 10 "Wastes from thermal processes" of the LoW and not an extractive waste covered by section 01 "Wastes resulting from exploration, mining, quarrying, physical and chemical treatment of minerals" of the LoW. Waste resulting from smelting, thermal manufacturing and metallurgical processes, which are all excluded from the definition of extractive waste, are provided as separate entries in the European Waste List, for example:

- 10 02 wastes from the iron and steel industry;
- 10 03 wastes from aluminium thermal metallurgy;
- 10 04 wastes from lead thermal metallurgy;
- 10 05 wastes from zinc thermal metallurgy;
- 10 06 wastes from copper thermal metallurgy;
- 10 07 wastes from silver, gold and platinum thermal metallurgy;
- 10 08 wastes from other non-ferrous thermal metallurgy.

Secondly, the European List of Waste does not distinguish inert waste<sup>1</sup> from non-inert waste or reactive waste from non-reactive waste, both of which are important concepts for determining the proportionate scope of application of several EWD provisions.

#### 2.2.4. DIFFERENCES IN DATA REFLECTING DIFFERENCES IN INTERPRETATION OF DEFINITIONS

The European Commission compared the number of extractive waste facilities reported by Member States in the first 2 consecutive reports on the implementation of the EWD with the amount of extractive waste reported to Eurostat<sup>2</sup>. The figures provided vary significantly between Member States and the number of extractive waste facilities are relatively low when compared to the amounts of extractive waste produced. Therefore, the European Commission is interested in getting a better understanding of how the relevant definitions of the EWD are applied. Stakeholders have repeatedly responded, with reference to their respective interpretation of European Court of Justice (ECJ) rulings, that the definitions are clear for them (ref. Stakeholder Workshops March 2017, April 2019 & February 2020). Interviews with the MS as part of this study did not reveal major differences in the interpretation of definitions of 'waste' & 'treatment' between them.

Though all MS appear therefore to have adopted legal definitions of extractive waste consistent with the EWD, the project has noted some potential for differences between usages of the general term "waste" by different stakeholders; namely operators and regulators at all levels, ranging from the local to the international level. Different stakeholders tend to call any material that is not declared a product or by-product, "waste". The legal requirements that should be fulfilled in order to comply with rules for marketing or permitted use of these materials as product or by-product was briefly discussed at the Member State Workshop of 13 February 2020, but was beyond the scope of the MS interviews. Stakeholders' references to some (by-)products as "waste" and *vice versa* may be a result of operators seeking a management route that best complies with all environmental, social and economic standards, just as some MS have exercised their legal right to extend or reduce the scope of relevant EWD provisions within their territories for reasons of practicality and workability. For example, in Cyprus the copper mine of Skouriotissa produces copper metal cathodes (99.99%) applying the Leaching – Solvent Extraction - Electrowinning method. The raw material for the process is old stockpiled tailings. After re-processing, the resulting tailings are deposited back into the excavation voids of the old mine. Even though the voids do not constitute an extractive waste facility<sup>3</sup> under the provisions of the EWD, for practical reasons of ease of monitoring, Cyprus has classified them as a Category A facility in its national law.

#### 2.2.5. DIFFERENCES IN DATA REFLECTING LEGITIMATE DIFFERENCES IN PRACTICES

In the extractive sector and in each MS, multiple terms are used such as residues, residual waste, tailings, to describe materials that are not considered to fall under the legal definition of extractive waste. Mining and mineral processing generates significant material streams that are not considered as 'waste' according to the definitions and, therefore, are not reported under the EWD. Some operators may therefore not feel obliged to cover them in their Extractive Waste Management Plans. In addition, many 'wastes' generated in mines and quarries can readily become a 'product' as commercial conditions change. For example, the prices of many internationally traded metals are

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<sup>1</sup> Definitions: see Appendix 2

<sup>2</sup> COM(2016) 553 final

<sup>3</sup> Definition: see Annex 2

strongly influenced by changes in consumer income, which regularly give rise to a quadrupling or a quartering of associated metal prices over a ten-year period.

In some cases, the line between the extractive waste and the waste from the metallurgical processes is distinctive. For example, it is the view of the European Commission that waste from bauxite processing and alumina production is an extractive waste under EWD, and waste for aluminum metal production is not. Such facilities are typically separated by large distances, which makes such a distinction relatively easy. However, in other sectors, such as gold mining, analogous processes may take place at the mine site. At such facilities the boundary between extractive waste and metallurgical waste may fall within a grey zone and cease to be meaningful in terms of materials management for protection of human health and the environment. For example, the recovery of gold through metallurgical processes very often takes place at the gold mine and as a result the final waste may be a mix of extractive waste (from treatment of the mineral resource to produce a concentrate or leachate) and metallurgical waste (resulting from the final step to produce a gold doré bar).

#### 2.2.6. RECOMMENDATIONS

The working assumption that most of the hazardous waste reported previously as arising from the sector and should be managed in Category A Extractive Waste Facilities (EWFs) has not held true. Furthermore, while the project did not reveal major differences in the interpretation of definitions of 'waste' and 'treatment' between the MS, there are concrete and justified differences in the generation and quantities of extractive wastes – even within the same MS or the same commodity. Therefore, the project has implemented an alternative means of reality checking the number of Category A EWFs identified by the MS and recommends this to be used as a starting point to trigger clarifications from individual MS.

#### 2.3. ADVANTAGES AND DISADVANTAGES OF SOME COUNTRY SPECIFIC WASTE CODES

The European Commission has expressed concern that the reported figures on extractive waste facilities do not seem plausible when compared to the figures for “other mineral wastes” reported to Eurostat. One of the targets of the project was to contact MS to seek clarification on the main material streams resulting from the extraction process and to clarify any mismatches between the volumes of waste expected and data reported to Eurostat.

##### 2.3.1. CURRENT PRACTICES AT VARIOUS LEVELS

EWC-Stat / Version 4 already splits mineral waste from construction and demolition waste (Code 12.1) from other mineral wastes (Codes 12.2, 12.3 & 12.5). The remaining aggregated statistic “Other mineral wastes” still includes:

- Asbestos materials from all branches (asbestos processing, -cement, brake pads etc.);
- **Mineral wastes from mining and quarrying;**
- Blasting material and grinding bodies;
- Casting cores and moulds;
- Linings and refractories from all thermal processes.

Eurostat guidance states that the “Other mineral wastes” statistic mixes some wastes from the following families of EU Waste Codes:

- **01 exploration, mining, quarrying, physical and chemical treatment of minerals, including:**
- 02 agriculture, horticulture, aquaculture, forestry, hunting and fishing, food;
- 06 inorganic chemical processes;
- 08 coatings (paints, varnishes and vitreous enamels), adhesives, sealants and inks;
- 10 from thermal processes;
- 15 packaging; absorbents, wiping cloths, filter materials and protective clothing;
- 16 not otherwise specified in the list;
- 17 Construction and demolition wastes (including soil from contaminated sites);
- 19 waste management, waste water treatment, water for human consumption and industrial water;
- 20 household and commercial, industrial and institutional wastes including separately collected fractions.

The EU Waste Codes cover waste from the extraction of all different types of minerals together (construction, energy, industrial, metallic) and waste from production of primary and secondary raw materials is not reported separately.

It is worthwhile to review and discuss the purpose of the information collected via the waste codes, the original intention and current considerations:

- At company level: such statistics are integrated into planning and management processes and are first and foremost a cost component.
- At local/regional level: statistics at local and regional level are being used to identify potential planning requirements, environmental management issues, permitting issues (since most enterprises are provided permits at this administration level).
- At national level and at EU level: statistics at national and EU level are being used to assess the performance of waste reduction and waste management as well as assessing potential hazards, which might require additional legislation.

For illustrative purposes some country specific examples are used.

### **2.3.2. USEFULNESS OF THE DATA IN THE POLICY CONTEXT**

It was clear from the onset of this study that the current MS reporting to Eurostat distinguishes between hazardous and non-hazardous mineral waste, but not mining waste in either category. Therefore, this project aimed to seek clarification on the main material streams of the extraction process and which of these streams are considered as extractive waste.

Today's policy context at the MS and EU levels looks at various aspects of resource and waste management. It is important to understand what information on waste management would be required today to respond to these policies and how best to provide these:

- Resource efficiency and supply risks
  - Impossibility to compare data from different deposits due to geological conditions of mineral deposits; and,
  - Ability to process for more minerals comes at a price.
- Achieving waste reduction and contribution to circular economy
  - Lack of differentiation between primary resource and secondary resource (from old wastes) processing;
  - Higher degree of processing and valorisation of additional minerals does not necessarily lead to waste reduction;

- Increasingly deeper deposits and lower grade deposits leading to more wastes; and,
- When “waste ceases to be waste” and when “product becomes waste” due to technology or demand changes or when products become waste e.g. due to an economic crisis.

### **2.3.3. RECOMMENDATIONS**

The project revealed that diverging interpretations of the Directive are not likely to be a source of apparent inconsistencies in the data reported by MS (see section 1.2), but that the definition of “extractive waste” in the EWD and the European List of Wastes is more refined than the definition of “waste from mining & quarrying” used by Eurostat.

The study enables the project consortium to suggest a number of short-term and longer-term options for improved reporting of better differentiated statistics of extractive waste related data.

#### Questions:

- How to document progress in the industries waste management practices?
- Would quality criteria be more helpful than quantity criteria?

### **2.4. DIGITAL PLATFORMS AT MS LEVEL**

The objective of this part of the webinar is to exchange information and experiences on the establishing of a national reporting platform for extractive wastes.

#### **2.4.1. SUMMARY OF FINDINGS OF REPORTING ISSUES AT COMPANY, LOCAL, REGIONAL AND MS LEVEL**

The review of the current practices in the various MS has clearly shown a large diversity and degree of centralisation and decentralisation across the MS. Difficulties can arise from the size of the companies and their obligation to report to various institutions at various levels in different MS.

There are differences in responsibilities of the various institutions/authorities in MS and there are problems in accessibility of reported data for various institutions which might require these data for policy decisions.

#### **2.4.2. CASE STUDIES**

A few illustrative case studies have been identified to highlight the latest developments and efforts in bringing the digital economy to this area of data management. Two short presentations on two case studies on Poland and Finland will illustrate the scope, budget and implementation issues encountered during these projects.

The webinar will discuss the advantages and disadvantages of having a digital hub for collecting the waste figures according to the EC waste catalogue codes and making these available across ministries and local and regional authorities.

### 2.4.3. RECOMMENDATIONS FOR DISCUSSION

Since various MS are developing such reporting platforms, it will also explore the possibility for an EU funded project to design a common project and to achieve compatibility of the national models to facilitate European aggregation at a later stage.

### 2.5. EXCHANGE OF INFORMATION AND SUGGESTIONS FOR FUTURE WORK

#### 2.5.1. ALTERNATIVE MEANS OF REALITY CHECKING THE NUMBER OF CATEGORY A EWFs

The project's goal was to estimate the expected number of extractive waste facilities in operation (specified in Category A, non Category A with inert waste, non Category A with non-hazardous & non inert waste), which was very complicated and difficult to predict. According to Annex III of the EWD the criteria for determining the classification of waste facilities under Category A is specified as:

- the waste facility fails or is incorrectly operated, e.g. the collapse of a spoil / tailings or the bursting of a dam, giving rise to a major accident, on the basis of a risk assessment taking into account factors such as the present or future size, the location and the environmental impact of the waste facility; or
- the waste facility contains waste classified as hazardous under Directive 91/689/EEC above a certain threshold; or
- the waste facility contains substances or preparations classified as dangerous under Directives 67/548/EEC or 1999/45/EC above a certain threshold.

However, the project is based mainly on desk research and since it was not possible to visit each extractive facility some assumptions were used to estimate the possible category of the extractive waste facility. The first assumption was that EWF classification can be based only on criteria concerning the presence of dangerous substances or hazardous waste and not from a structural point of view.

The project's approach to estimate the appropriate category of EWF to accommodate extractive waste from metal mines is probably already more useful than comparing Waste Code and Eurostat data, but needs refinement to be sufficiently useful for the European Commission, MS and the extractive industry. For now, tailings from processing of sulfidic ores may be assigned under three waste codes:

- 01 03 04\* acid-generating tailings from processing of sulphide ore;
- 01 03 05\* other tailings containing hazardous substances;
- 01 03 06 tailings other than those mentioned in 01 03 04 and 01 03 05.

For an in-depth evaluation of "waste" in this project, chemical and mineralogical analysis data were not available from companies or Member States. According to Annex VI of the CLP Regulation the existence of 0.3% of Lead compounds in the waste sample, for example, it may classify the waste as hazardous. However, taking into consideration that each mineral (from galena to cerussite) has different hazard properties it was decided not to classify the waste based on its content to hazardous substances, but for the potential of acid-generating due to its sulfide content.

So, perhaps the most pressing need is to ensure that the assumption that sulfidic wastes are hazardous (waste code 01 03 04\*) and is only applied when generation of acid rock drainage is likely, by:

- A first reality check from MS when reviewing their Country Fact Sheets in 2020;



- A more granular split of “sulfidic” Ore Types: Categorise tailings per deposit type rather than commodity. Link generic ore-type models with most representative mineral processing steps, treatment/management practices and a geo-referenced climate seasonality dataset (e.g., Köppen-Geiger climate classification);
- Better binning/filtering of the available data as per the above to identify groups of EWFs for which, in the first instance, the waste code 01 03 04\* might be more reasonably assumed to apply;
- Getting producers and authorities even more involved to improve the data & the outcomes (see Section 2.5.3 below).

Implications for the Country Fact Sheets and/or triennial questionnaire:

- Add “ore-type” and “processes” for each metal mine to the questionnaire;
- (alternatively, add an integrating question: “please list EWFs where waste characterization has indicated that generation of acid rock drainage is likely”);
- Access geo-referenced seasonal climate parameters from Joint Research Centre;
- (Alternatively, the information could be retrieved from EIAs/EWMPs as part of the project proposed in section 2.5.3 below)

#### 2.5.2. DIFFERENTIATED STATISTICS OF EXTRACTIVE WASTE RELATED DATA

Problems are more with Eurostat than with the EU Waste Codes, though neither of them entirely match the different sources and categories of waste mentioned in the EWD. To address misleading statistics coming out of Eurostat, EWC-Stat / Version 4 already splits mineral waste from construction & demolition waste (Code 12.1) from other mineral wastes (Codes 12.2, 12.3 & 12.5). At the February 2020 Workshop MS explained that “major mineral waste” is excluded from the statistical reporting obligations of MS as apparently there is no statutory requirement to provide this data centrally. An obvious recommendation would then be to request that Eurostat requires separate reporting of **mineral wastes from mining and quarrying**, ensuring that its definition remains one-to-one equivalent to the totals reported under the 01 EU Waste Codes (**wastes from exploration, mining, quarrying, physical and chemical treatment of minerals**).

#### 2.5.3. COMMON EU FUNDED PROJECT FOR DIGITALISATION OF MEMBER STATE DATA COLLECTION

It might be envisaged to undertake a one-off EU-funded project to digitalise the full set of EWMPs in each Member State (or at least some key parameters from each). For example, a national database could be constructed to store at least the following parameters for all:

- The mineral sector (“aggregates”, “other construction minerals”, “industrial minerals” or “energy minerals”);
- Mine type (surface or underground);
- Type of ore body;
- Prediction of whether extractive waste is likely to arise or not;
- Longitude & Latitude;
  - Related seismic zoning;
  - Related topographic slope;
  - Proximate water-courses;
  - Proximate settlements;
  - Proximate Natura 2000 sites.
- N° of EWFs;
- N° of Category A EWFs;



- Applicable markers of BAT;
  - Associated reagents;
  - Associated REACH Authorisations;
  - Typical angle of repose of the resulting waste.

## CHAPTER 3      **WEBINAR II, FINANCIAL GUARANTEES AND EXTRACTIVE WASTE MANAGEMENT PLANS (11/06/2020)**

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### **3.1. INTRODUCTION**

The second webinar presents the results from the project on financial guarantees prepared by C&E, as well as elements for the extractive waste management plans (EWMPs). Both issues influence the the implementation of the Directive 2006/21/EC3 (EWD, 2006).

The EWD provides measures, procedures and guidance to prevent or reduce as far as possible any adverse effects on the environment and any resultant risks on human health from the management of extractive waste. This Directive requires the competent authority to require a financial guarantee, prior to the commencement of any operations involving the accumulation or deposit of extractive waste in a waste facility.

The Directive requires the Member States to ensure that the operator draws up a waste management plan (EWMP). The EWMP includes, inter alia, a proposed plan for closure, including rehabilitation, after-closure procedures and monitoring. For waste facilities that require a permit, the EWMP is part of the permit application. The financial guarantee is established in accordance with procedures to be decided by the Member States. This guarantee is lodged at the pre-operational phase and is based on anticipated closure measures, e.g. as specified in the EWMP, and their estimated costs. Since the operational phase of a mine might last for several decades, there is a degree of uncertainty associated with the financial guarantee. The Directive addresses this issue by requiring a review of the EWMP every 5 years and the periodic adjustment of the financial guarantee in accordance with any rehabilitation work needed to be carried out as described in the EWMP.

For the closure and after-closure phase, the Directive requires Member States to ensure that the operator requests an authorisation to start the closure procedure. This request is based on the latest periodic review of the EWMP taking into account the actual environmental impact of the waste facility and elaborates in detail the closure tasks and programmes including expected costs. Some Member States require a separate closure plan.

### **3.2. FINANCIAL GUARANTEES**

In general, a financial guarantee is a promise to take responsibility for another company's financial obligation if that company cannot meet its obligation. As such, a financial provision refers to the establishment of a source of funding for liabilities under environmental law or an environmental permit, licence or other authorisation.

Financial instruments can be divided in three main categories depending on the degree to which the financial guarantee is decoupled from the mine operator's assets (MonTec, 2008):

- the financial guarantee remains within the operator company,
- the financial guarantee is provided by a third (commercial) party,
- the financial guarantee is deposited with the government or a trust fund.

The calculation of the volume of the financial guarantee is based on the prognosis of closure and restoration costs after termination of the mining activities. For some types of mining, the closure takes place only after termination of all mining activities (typically for instance in ore mining) while for other types of mining closure takes place in parallel to the extraction activities. This is typically the case for open cast lignite mining where the area of the foreland of the open pit is consumed for mining while extraction waste is deposited backwards and restored in parallel. This approach leads to the need of combined closure and restoration plans. Thus, the combined strategy must be developed already from the beginning of mining. This is also necessary in such cases to calculate the provisions to be established as the financial guarantee.

Financial guarantee, as an economic instrument, must be complemented by permitting, inspection, enforcement and education process to be effectively implemented. The permitting process is necessary for clarifying the criteria for mine closure, impelling planning for closure from the outset of mine planning and successfully ensuring enforcement of closure criteria.

### **3.3. GUIDANCE ON PLANS**

#### **3.3.1. CLOSURE PLANNING**

A closure plan serves as base for regulatory body's determination of the amount of the financial guarantee. A guarantee should reflect the cost of a mine closure and be adjustable, up or down, to reflect changes in the proposed closure plan. This cost will frequently be higher than the cost to the title holder, because, in the event of default by the operator, the state will not be able to use site's mine production equipment and personnel, with resulting marginal cost (Hollands, 1999). Long-term commitments (e.g., monitoring, after care, etc.) have to be taken into account on a best-estimate basis, even though no clear official calculation methods exist. The other method to calculate the financial guarantee often applied by the surveyed companies is based on unit amount calculations (e.g., per t of mine wastes produced, etc.). Financial Guarantees must cover closure and post-closure activities.

The different mining types of the resources are characterised by certain particularities that must be taken into account in the closure plan. The types of closure activities determine the cost profile of technical works. Generally, following activities need to be considered, depending on the resource and mining type:

- Site Preparation
- Earthworks
- Fencing and Drainage
- Demolition / Decommissioning
- Backfilling
- Relocation
- Groundwater Protection measures
- Shaft and Adit Closure
- TMF Dewatering and Closure
- Application of surface sealing
- Recultivation / Revegetation
- Flooding
- Waste disposal.

In terms of closure cost have to be considered direct closure costs, indirect closure costs, mobilization and site preparation, contingencies, engineering and design, profit and overhead,

closure management, administrative costs, maintenance costs, and monitoring costs. Direct closure cost include cost of technical closure works and the unit cost breakdown for the steps comprising that activity. In the closure design, the unit cost are summarised in the Bills of Quantities (BoQ) that is part of the technical closure design and essential for the verification of the closure design by the competent authority.

### 3.3.2. EXTRACTIVE WASTE MANAGEMENT PLANS

The management of extractive waste is regulated by Directive 2006/21/EC (EWD) and it is not limited to Category A Facilities. According to Article 5 (“Waste management plans”) of the EWD, the MS have to ensure that operators draw up an EWMP, under the following objectives:

- Article 5(2)(a) of the EWD: the prevention or reduction of waste production and its harmfulness;
- Article 5(2)(b) of the EWD: the recovery of extractive waste by means of recycling, re-using or reclaiming such waste;
- Article 5(2)(c) and Article 5(3) of the EWD: Ensuring the short- and long-term safety of the extractive waste, in particular by considering as part of the design phase, the management during the operation and after closure of a waste facility.

The Extractive Waste Management Plans (EWMPs) should reflect in a structured way the planning of waste management options with a view to meet the objectives of Article 5 of the EWD. The EWMPs present measures for prevention or reduction of extractive waste generation and its harmfulness, as well as the recovery of extractive waste by means of recycling, re-using such waste where this is environmentally sound and economically feasible, and without disregarding the needs for short and long-term safety and stability of extractive waste management solutions. Such actions imply that EWMPs are based on the understanding that waste management imply proactive measures to avoid or reduce waste generation per se. The key to environmentally safe and responsible management of tailings is an effective management framework throughout the full life-cycle of an extractive waste facility. Objectives such as (a) protection of public health & safety, (b) mitigation of negative environmental impacts, and (c) safe after-closure procedures are the key concepts that have to be incorporated into the EWMPs (Eco-Efficiency et al, 2019a).

According to the national laws of MS, an EWMP can be submitted as part of an application for planning permission, forming a component of the application documentation or being contained within an environmental impact assessment (EPA Ireland, 2012). Extractive waste management planning can be a complex process, requiring environmental, social, engineering and economic inputs. It is an integrated part of good operational management and EWMPs can be seen not only as a permitting tool, but also as a communication tool. Developing EWMPs is a systematic way to assess availability and adequacy of all essential components of extractive waste management. It should be noted that the EWMP is not necessarily a document that is only submitted once in the first permit application. According to the EWD, the waste management plan shall be reviewed every five years and/or amended, if substantial changes have taken place in the EWF or in the extractive waste itself. Competent authorities may need to be notified of amendments. For this reason, monitoring is an important tool to verify that an EWMP meets its objectives. The monitoring of an EWMP should be dynamic and provide records that can be utilised as a basis for the continuous optimisation of resources use and minimisation of the residual material that will end up in an extractive waste facility. Consequently, the EWMP may be considered as a reporting platform of work that has already been done for the management of waste every five years by providing quantitative and quality information (Eco-Efficiency et al, 2019a).

The mining sector is particularly complex due to the specific geological, geochemical, geotechnical, geomorphological, climatological, ecological, and socio-economic conditions of each site. It should be kept in mind that these multi-dimensional parameters are needed to be evaluated under risk and impact assessment. A risk and impact analysis will help to underline the economic, social, and environmental effects of the extracted material. In this sense, the risk assessment and resulting management solutions as presented in an EWMP can serve to demonstrate to regulators and other (public) stakeholders that risks have been minimised and benefits.

Also, the mining life-cycle encompasses many phases that may span years or even decades. As a matter of fact, the ultimate phase after closure extends in time due to the fact that all remaining extractive waste (EW) will remain at the site for ever. While the chosen technical waste management solution must ensure the short-term and long-term protection of human health and the environment, it also needs to ensure the short and long-term after-closure stability with as little maintenance as possible. The EWMP has to detail the respective strategies and rationales for selecting the technical solutions.

Taking into consideration the EWMPs that were selected through the gathering of relevant data, the following approaches related to the term “management of extractive waste” have been identified:

- Some EWMPs address the management of excavated material after it has been classified as extractive waste
- Other EWMPs develop a wider perspective and address all streams of excavated material explaining the material streams considered as (by)product and those classified as (extractive) waste. Decisions to declare some extracted materials as waste and to proceed to disposal are made, when no beneficial use for the waste can be found, which in turn often depends on the economic context at the time. In consequence, such wastes may still contain components that could become valuable at some later point in time. Whether these materials can be recovered later depends on the chosen disposal method. Near-surface repositories, such as waste-rock dumps or tailings ponds may be relatively easily accessed and reworked. The situation is different for materials placed into deep mines, where re-entering after closure is difficult and can be dangerous. This dilemma between long-term safe extractive waste management solutions and maintaining access to potentially valuable resources needs to be carefully weighed, during the development of an EWMP.

It has to be understood that material that is defined as “extractive waste” is subject to the EWD, while other types of waste that are beyond the term “extractive waste” are subject to the Waste Framework Directive, or Directive 2008/98/EC of the European Parliament.

#### **3.4. EXCHANGE OF INFORMATION AND SUGGESTIONS FOR FUTURE WORK**

There are cases where the material streams are treated individually from an operational or technical point of view and often cannot be applied uniformly. Thus, for instance, one operation may be able to market a certain fraction of the extracted material as by-product, while another operation extracting the same kind of mineral may not find a market this and, therefore, would need to dispose of it as waste. This may also change with time and EWMPs have to be flexible in order to accommodate such changes.

Additionally, since the EWMPs have to be revised and updated every five years or when there have been any significant changes to the operational plans, they may feed a reporting platform as it is proposed in chapter 2.4 for extractive materials, extractive waste or by-products.

## CHAPTER 4      **WEBINAR III, SUSTAINABLE AND TRANSPARENT MANAGEMENT OF EXTRACTIVE WASTE (12/06/2020)**

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### **4.1. INTRODUCTION**

The third webinar aims to discuss the relevance of current reporting practices in light of the sustainable and transparent management of extractive waste, proposing a “New draft questionnaire” for the next report on the ongoing implementation of the EWD, which the reader can find at the end of this Chapter 4. The study has revealed practices by both operators and MS that clearly contribute to such policies, but which may not have been hitherto well known. This raises questions about whether the triennial reporting could not be updated to make it more mutually beneficial to the European Commission and MS.

In addition some critical issues and policies will be discussed shortly in this webinar, such as resource efficiency, waste minimisation, Circular Economy and definition of by-products.

### **4.2. CIRCULAR ECONOMY**

The European Commission has set out a framework to help MS to meet the challenges and the opportunities of the Circular Economy Model, where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised, which brings benefits for both, the environment and the economy. The Circular Economy Action Plan calls for a maximum valorisation and use of all raw materials, products and waste, fostering energy savings and reducing greenhouse gas emissions (European Commission, 2018) and has been taken up in the 2020 Action Plan.

The transition to a circular economy is proposed as an opportunity to transform Europe’s economy to a more sustainable one, to contribute to climate protection goals and to preserve the world’s resources, create local jobs and generate competitive advantages for Europe (European Commission, 2018). The target of the circular economy focuses on long-term paths for waste management and recycling in order to gain secondary raw materials from waste and through re-use and remanufacturing to keep the products in the commercial life-cycle (OECD, 2015).

From the beginning of the implementation of the EWD, some experience with EWMPs has been accumulated. Mine operators have to plan their operations in such a way as to ensure efficient use of resources by minimising extractive waste generation and are encouraged to promote the use of secondary raw materials and their accessibility as future resources. Extractive industries provide mineral raw materials that are essential to downstream industries and economic sectors. Extractive industries provide, first of all, primary raw materials. However, the processing often targets only one or a few constituents. Hence, what would become extractive waste can actually be a potential source of further raw materials, if technically and economically viable. Therefore, characterisation of the expected extracted material or the old wastes intended for reprocessing should include all parameters necessary to inform about potentially valuable constituents or properties that can be utilised in order to avoid the material becoming waste.

The extractive industry actively searches for circularity aspects in relation to extractive waste management plans as well as searches for strategies to maximise resource. The targets that the extractive sector takes into consideration in order to promote Circular Economy concepts are the following: (a) optimisation of extraction, (b) reduction of environmental impacts until deemed acceptable, and (c) strengthening of recycling (Eco-Efficiency et al, 2019). The practices that are mostly presented into EWMPs related to Circular Economy are the following (Eco-Efficiency et al, 2019):

- Considerations of extractive waste production and its management in the design phase;
- Following strategies and techniques to fill excavation voids with extractive material (Note: in some MS these excavated materials are considered as waste and in some others as secondary raw material);
- Utilising waste rock in different kinds of earthworks on site during active mining operations, as landscaping material, or it may be sold outside for use as aggregate;
- Utilising extracted material that would otherwise be waste in various ways outside the mine environment, in earthworks, and even in the chemical industry;
- Recycling or re-using of historical extractive waste;
- Recycling of waste water;
- Segregation and re-use of topsoil.

The characterisation of extracted material that may become waste should be incorporated into exploration and design programmes, which is also when waste management options are considered and chosen. Hence, what would become extractive waste can actually be assessed as a potential source of further raw materials. Therefore, extracted material characterisation should yield useful parameters to inform about potentially valuable constituents or properties that can be utilised in order to avoid the material becoming waste.

#### **4.2.1. OPTIMISATION OF EXTRACTION**

The exploration efforts are the basis for a mining project. Integrated planning based on the following waste management objectives: prevention, re-use and recycling, highlighting the design phase as a basic step to achieve the Circular Economy principles. Effective characterisation of the resource and extractive waste and advance planning of the operation improves the efficiency of extraction, avoids sterilisation of resources (i.e. helps future generations to have access to virgin raw materials), ensuring a continued, steady and adequate supply of the raw materials needed by society and minimises the amount of unnecessary extraction and thus reduces waste. Each of these possible solutions is reviewed with respect to the risk reduction strategy applied (based on relevant engineering principles) considering risks, impacts, as well as economic and social aspects. Typically, this stepwise process of risk management planning includes: establishing the design context, impact identification and failure risk identification, designs for risk elimination or reduction, and monitoring for efficacy (Eco-Efficiency et al, 2019).

#### **4.2.2. STRENGTHENING THE SOURCING FROM SECONDARY RAW MATERIALS**

In a circular economy, waste can be re-entered into the economy in the form of new materials. As a consequence, this practice will contribute to satisfying the rising demand and increasing security of supply to a certain degree and strengthen the secondary raw materials markets.

However, one of the barriers potentially faced by operators, who want to use secondary raw materials, is uncertainty as to their qualities and potentially hazardous properties if this information



is not available. While inert residues by definition do not pose a problem with respect to environmental acceptance, under national or sub-national laws in the MS, non-inert non-hazardous excavated material may be acceptable for certain applications, e.g. road foundations. This depends on their specific properties, and the technical, economic and environmental requirements (Eco-Efficiency et al, 2019).

Whilst MS appear to take a consistent approach to distinguishing between non-waste by-products and materials that should be treated as waste, there appears to be a certain absence of clarity around the extent to which other legislation applicable to by-products is enforced (e.g., the Regulation (EC) No 1272/ 2008 on the Classification, Labelling and Packaging). As this project was focussed on implementation of the EWD, compliance with adjacent legislation was beyond its scope.

### 4.3. BY-PRODUCTS

By-products in mining are 1) most typically those metals & minerals that are extracted for sale in addition to the main target mineral (either within a single concentrate or by production of more than one type of concentrate). In some cases, by-products are rather 2) bulk materials used for filling voids or for landscape restoration on the mine site. In still other cases 3) extractive waste or metallurgical waste may have a valuable use if (transport) barriers to market can be overcome and are therefore sometimes considered potential by-products.

In all cases, vernacular use of the term “by-product” within MS may sometimes refer to recovered or recycled waste, whereas a strict reading of the legal definition of the term “by-product” in the EU implies that by-products must not have been discarded before “production”, and therefore must not have at any time become waste.

The EU H2020 ORAMA project (<https://orama-h2020.eu/about-the-project/>; Bide et al., 2018) found that public production data for the first kind of by-product described above can be very difficult to obtain because often it is not recorded by the producing companies as they are focused on the primary products. Hence the data often simply does not exist. It can be difficult to track where a material has been shipped from/to for processing because it is often obscured in trade data by a description that does not mention the potential by-product.

The definition of waste plays a key role to understand the distinction between waste and the second type of by-products described above. By-products are a material stream which is not defined or presented in the EWD. According to the Waste Framework Directive 2008/98/EC (WFD) *“The waste status of uncontaminated excavated soils and other naturally occurring material which are used on sites other than the one from which they were excavated should be considered in accordance with the definition of waste and the provisions on by-products or on the end of waste status under this Directive”*. According to Article 5 of the WFD (Waste Framework Directive) *a substance or object, resulting from a production process, the primary aim of which is not the production of that item, may be regarded as not being waste referred to in point (1) of Article 3<sup>4</sup> but as being a by-product only if the following conditions are met:*

1. Further use of the substance or object is certain;
2. The substance or object can be used directly without any further processing other than normal industrial practice;
3. The substance or object is produced as an integral part of a production process; and
4. Further use is lawful, i.e. the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.

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<sup>4</sup> ‘waste’ means any substance or object which the holder discards or intends or is required to discard



This chapter includes a decision tree (Figure 2) from the Communication on waste and by-product (2007)<sup>5</sup> that may allow the reader to quickly understand waste versus by-product decisions. The first three steps are related to technical options, production process and market conditions.

In strictly legal terms, the characterisation of a material as by-product, declares that it is not waste, not covered by the EWD and therefore not necessarily mentioned in the EWMPs (e.g. overburden from open-cast lignite extraction in Poland, which is systematically used for site reclamation and therefore not classified as waste). Any assessment of its hazardousness is then targeted at complying with the legislation (Regulation (EC) No 1272/ 2008 on the Classification, Labelling and Packaging) or for materials being placed on the market (Regulation 1907/2006/EC (REACH)).

Minerals, ores, ore concentrates, raw and processed natural gas, crude oil, and coal are exempted from REACH Registration, but hazard classification of these materials is often required under the CLP Regulation. Assessment through the CLP Criteria defines if a material “fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts”.

As with many other aspects of the Waste Framework Directive, the definition of by-product is not particularly well suited to the mining context, where the investments are longer term, the volumes of materials produced are large and their potential markets are cyclical. If the EU definitions of waste and by-product are strictly applied, the same material can potentially be re-classified as “by-product”, “extractive waste”, “recovered waste” and “by-product” again over a fifteen year period despite its intrinsic properties remaining completely unchanged. This is particularly relevant to the group of “potential by-products” described above.

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<sup>5</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52007DC0059&from=EN>

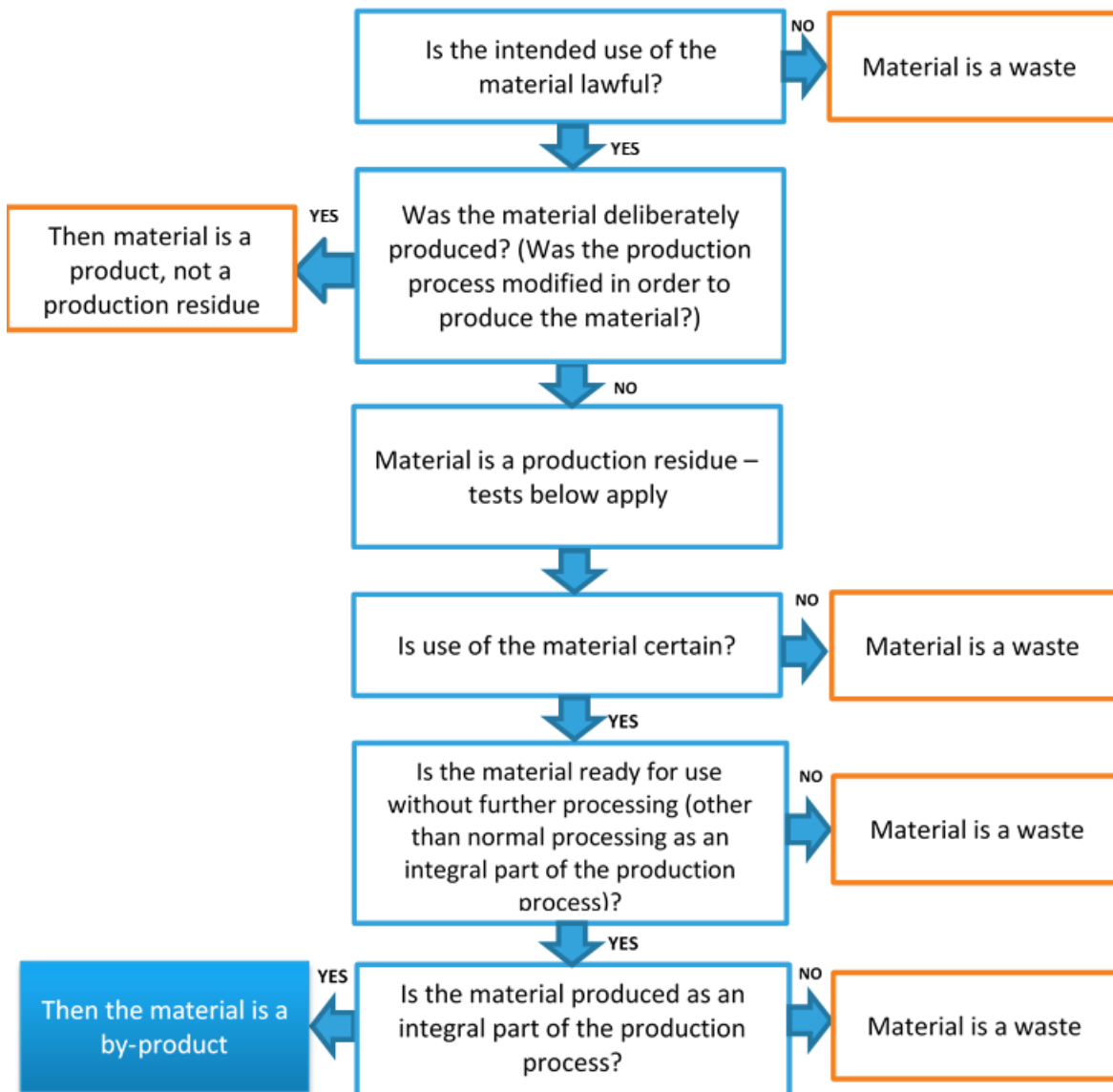


Figure 2: A decision tree for waste versus by-product decisions (Source: Communication from the Commission to the Council and the European Parliament on the Interpretative Communication on waste and by-products )

#### 4.4. DRAFT EC QUESTIONNAIRE FOR MS

As part of the project the consortium was encouraged to provide a revised questionnaire for the triennial reporting. Having reviewed the data situation, the past reporting cycles and the new policy developments, the consortium would like to propose for consideration a revised questionnaire for discussion between the European Commission and MS:

## New draft questionnaire for future reporting

### Questionnaire for the report by Member States on the ongoing implementation of Directive 2006/21/EC

Please provide the following contact information and complete the text boxes:

Institution/Organisation you are representing:

Country your Organisation is representing:

Your Name (Family Name, Surname):  
Example: Einstein, Albert

Your email address:

Your Phone Number:  
(+International Dialling Code - Local Number)  
Example: +352 9876 12345

Please fill in the relevant parts of the form,

- "Part A" on applicability & changes must be filled by all countries
- If yes to Part A, then "Part B" must be filled in.

You can use your national language to fill in the questionnaire.

Questions below use the same text as Annex III of Commission Decision 20xx/xxx/EC. For clarification of some of the questions featured in part B, please refer to the separate letter sent by the Commission.

Deadline for the submission: 1 February 20xx [2024, 2027, 2030,...]

**Part A. Questions to be answered by all MS to update the information on applicability in Member States**

**(1) Administrative arrangements and general information:**

**Do you have EWFs on your territory falling under the directive?  
Yes/No**

**Has there been any change in national legislation?  
Yes/No  
Please specify:**

**Have new Extractive Waste Facilities come into operation since the last reporting period?  
Yes/No**

**Have there been any changes to the inventory of closed/abandoned EWFs since the last reporting period?  
Yes/No**

**(2) Please indicate the competent authority in charge of reporting to the EC Questionnaire:**

.....

**Part B. Questions to be answered by those MS that have reported changes under Part A.**

- (a) If possible, using the table provided in Annex, please provide an estimate of the number of extractive waste facilities on the territory of the Member State:

	In Operation	In Transition	In Closure phase	Closed or Abandoned
- Category A that are also "Seveso" installations				
- Category A that contain hazardous waste but are not "Seveso" installations				
- Category A installations containing non-hazardous non-inert waste				
- Category A installations containing inert waste				
Total Category A				
Not Category A				
- Inert waste <sup>6</sup>				
- Non-hazardous non-inert waste				
Total				

- (b) Please indicate the number of cases of waste facilities of Category "A" in operation on your territory having a potential environmental or human health impact on another Member State:

**(2) Waste Management Plans and Permits**

- (a) Please indicate the competent authority(ies) in charge of verifying and approving the waste management plans proposed by the operators:
- (b) Please indicate the competent authority(ies) in charge of issuing the Article 7 permits
- (c) Have there been any changes made in national legislation since the last reporting period? Which ones?

<sup>6</sup> Installations treating exclusively inert waste as defined in the Directive

- (d) How many Waste Management Plans referred to in Article 5(6) of the Directive are currently in place?
- (e) What percentage of Waste Management Plans take the latest EC Guidance into account?
- (f) How many permits have been updated since the last BAT note on the Management of the Extractive Wastes has been finalised?
- (g) Have you or the operator applied the CEN standards<sup>7</sup> for characterisation of the expected waste?
- (h) Have there been any issues with the implementation of the guidance or the BAT note?
- (i) Has there been any change in national legislation, or any guidance been issued in relation to the classification of wastes going beyond the EC waste codes and guidance on classification of wastes? If so, please explain.

### **(3) Financial guarantees**

- (a) Please indicate the competent authority(ies) in charge of approving and managing the financial guarantee?
- (b) Does your national legislation earmark and preserve the guaranteed finances as laid down in Art. 14 of the Directive for the EWFs?
- (c) How many Financial Guarantees are currently approved and in place?
- (d) How many Financial Guarantees had to be released due to unforeseen or planned closure since the last triennial reporting?
- (e) Have you taken into account the new EC guidance on Financial Guarantees?
- (f) Have there been any issues with this guidance?
- (g) (maybe some more questions after the C&E consultant's report)

### **(4) Major-accident prevention plans and information**

- (a) Please indicate the competent authority(ies) in charge of approving and managing the major-accident prevention and information plans and information
- (b) Have you encountered any specific problems?
- (c) Please provide a comprehensive list of the external emergency plans referred to in Article 6(3) of the Directive:

### **(5) Inspections**

- (a) Please indicate the competent authority(ies) in charge of the inspections:
- (b) Have there been any issues with implementation of the 2020 technical guidelines?
- (c) What percentage of the installations is covered by regular inspections since the last reporting period? Please specify?

<sup>7</sup> CEN/TR 16365:2013; CEN/TS 16229:2011; CEN/TR 16376:2012; CEN/EN 15875:2011; CEN/TR 16363:2012

**(6) Public Participation, Transboundary effects**

- (a) Please indicate the competent authority(ies) in charge of organising the public and the consultation with neighbouring MS?
- (b) Which Member States have you consulted as per Article 16 of the Directive, and in relation to how many of your EWFs in total?
- (c) Which Member States have consulted you as per Article 16 of the Directive, and in relation to how many of their EWFs in total?

**(7) Closure and after closure procedures**

- (a) Please indicate the competent authority(ies) in charge supervising the sites during and after closure?
- (b) How many closures have been started/completed since the last reporting period?

**(8) Inventory of closed and abandoned mines**

- (a) Please indicate the competent authority(ies) in charge of compiling the inventory:
- (b) Has there been an update of the inventory of closed and abandoned facilities?
- (c) Has there been any new assessment been carried out? Were the criteria changed? In which way?
- (d) Are there any improvements/safety measures/rehabilitations achieved since the last reporting period?

**(9) Other relevant information**

Have you encountered any particular problems with the implementation of the Directive and its provisions?

**4.5. EXCHANGE OF INFORMATION AND SUGGESTIONS FOR FUTURE WORK**

According to the Circular Economy Action Plan (2020)<sup>8</sup>, the European Commission has announced that it will scope the development of further EU-wide end-of-waste and by-product criteria.

<sup>8</sup> [https://ec.europa.eu/environment/circular-economy/pdf/new\\_circular\\_economy\\_action\\_plan.pdf](https://ec.europa.eu/environment/circular-economy/pdf/new_circular_economy_action_plan.pdf)

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## Annex 1: Webinars, agenda

### Webinar I: PRODUCTION AND WASTE REPORTING (08/06/2020)

1. Welcome and tour de table – **European Commission** 14<sup>00</sup> - 14<sup>10</sup>
2. Practical guidelines – **VITO** 14<sup>10</sup> - 14<sup>20</sup>
3. Key issues around waste and waste treatment and waste codes - **Euromines**
  - a. Presentation 14<sup>10</sup> - 14<sup>30</sup>
  - b. Discussion 14<sup>30</sup> - 15<sup>00</sup>
- Break* 15<sup>00</sup> - 15<sup>15</sup>
4. Introductory remarks on Digital platforms
  - a. Presentation by **Kari Walde, Ictus, Finland** 15<sup>15</sup> - 15<sup>35</sup>
  - b. Presentation by **Joanna Kulczycka, MEERI, Poland** 15<sup>35</sup> - 15<sup>50</sup>
  - c. Q & A 15<sup>50</sup> - 16<sup>10</sup>
  - d. Discussion on a European approach 16<sup>10</sup> - 16<sup>30</sup>
5. Reflections and conclusion – **European Commission** 16<sup>30</sup> - 16<sup>45</sup>

### Webinar II: FINANCIAL GUARANTEES AND EXTRACTIVE WASTE MANAGEMENT PLANS (11/06/2020)

1. Welcome and tour de table – **European Commission** 14<sup>00</sup> - 14<sup>10</sup>
2. Practical guidelines – **VITO** 14<sup>10</sup> - 14<sup>20</sup>
3. Presentation on financial guarantees – **C & E**
  - a. Q & A 14<sup>20</sup> - 14<sup>35</sup>
  - b. Discussion 14<sup>35</sup> - 15<sup>05</sup>
- Break* 15<sup>05</sup> - 15<sup>15</sup>
4. Presentation on closure of EWF – **C & E**
  - a. Presentation on closure planning 15<sup>15</sup> – 15<sup>40</sup>
  - b. Discussion 15<sup>40</sup> – 16<sup>10</sup>
5. Guidance on Extractive Waste Management Plans – **Eco-Efficiency**
  - a. Presentation on EWMP 16<sup>10</sup> – 16<sup>25</sup>
  - b. Discussion 16<sup>25</sup> – 16<sup>35</sup>
6. Reflections and conclusion – **European Commission** 16<sup>35</sup> - 16<sup>45</sup>

### Webinar III: SUSTAINABLE AND TRANSPARENT MANAGEMENT OF EXTRACTIVE WASTE (12/06/2020)

1. Welcome and tour de table – **European Commission** 14<sup>00</sup> - 14<sup>10</sup>
2. Practical guidelines – **VITO** 14<sup>10</sup> - 14<sup>20</sup>
3. Addressing Circular Economy in extractive waste management and reporting
  - a. Presentation by **Joanna Kulczycka, MEERI, Poland** 14<sup>30</sup>-14<sup>50</sup>
  - b. Presentation by **Petros Maraboutis, Eco-Efficiency, Greece** 14<sup>50</sup> - 15<sup>10</sup>
  - c. Q & A 15<sup>10</sup> - 15<sup>30</sup>
  - d. Discussion 15<sup>30</sup> - 16<sup>00</sup>
4. Reflections and conclusion – **European Commission** 16<sup>00</sup> - 16<sup>15</sup>

## Annex 2: Related Definitions

- ‘inert waste’ means waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and not endanger the quality of surface water and/or groundwater.
- ‘waste facility’ means any area designated for the accumulation or deposit of extractive waste, whether in a solid or liquid state or in solution or suspension, for the following time-periods:
  - no time-period for Category A waste facilities and facilities for waste characterised as hazardous in the waste management plan;
  - a period of more than six months for facilities for hazardous waste generated unexpectedly;
  - a period of more than one year for facilities for non-hazardous non-inert waste;
  - a period of more than three years for facilities for unpolluted soil, non-hazardous prospecting waste, waste resulting from the extraction, treatment and storage of peat and inert waste.

Such facilities are deemed to include any dam or other structure serving to contain, retain, confine or otherwise support such a facility, and also to include, but not be limited to, heaps and ponds, but excluding excavation voids into which waste is replaced, after extraction of the mineral, for rehabilitation and construction purposes.