

TEMPLATE FOR SUBMISSION OF TEXTUAL PROPOSALS DURING THE 27<sup>TH</sup> SESSION:  
COUNCIL - PART II

*Informal Working Group - Environment*

Please fill out one form for each textual proposal which your delegation(s) wish(es) to amend, add or delete.

**1. Name(s) of Delegation(s) making the proposal:**

Federal Republic of Germany

**2. Please indicate the relevant provision to which the textual proposal refers.**

Annex IV – Environmental Impact Statement

**3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.**

**1. Preparation of an Environmental Impact Statement**

The Environmental Impact Statement prepared under these regulations and the present annex shall:

(a) Be prepared in plain language and in an official language of the Authority together with an ~~official~~ English-language version, where applicable;

(b) Provide information, ~~based on data from monitoring and~~ in accordance with the relevant regulations, Standards and Guidelines ~~and taking into account with the relevant~~ applicable regional environmental management plan, corresponding to the scale and potential magnitude of the activities, to assess the likely Environmental Effects of the proposed activities. Such effects shall be discussed in proportion to their significance. Where an applicant ~~or Contractor~~ considers an ~~Environmental~~ Effect to be of no significance, there should be sufficient information to substantiate such conclusion, or a brief discussion as to why further research is not warranted; and

(c) Include a non-technical summary of the main conclusions and information provided to facilitate understanding of the nature of the activity by Stakeholders.

~~(d) be peer reviewed by competent independent experts, before submission and include a description of the experts, their qualifications, and the results of their review.~~

**2. Template for Environmental Impact Statement**

The ~~recommended~~ format ~~and required contents~~ for an Environmental Impact Statement is outlined below. It is intended to provide the International Seabed Authority, its member States and other stakeholders with unambiguous documentation of the potential

Environmental Effects ~~based on the Best Available Scientific Evidence and Best Available Technology- Techniques~~ on which the Authority can base its assessment, and any subsequent approval that may be granted. Further detail for each section is provided following the overview.

~~This document is a template only, and is not intended to be prescriptive but rather to guide the format and general content of an Environmental Impact Statement and~~ It does not provide ~~exhaustive~~ details of methodology or thresholds that may be resource- and site-specific. These methodologies and thresholds ~~should~~will be developed as Standards and Guidelines to support the regulations.

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## Executive summary

One of the main objectives of the executive summary is to provide an overview of the project and a summary of the content of the Environmental Impact Statement for non-technical readers. Information provided in the executive summary should include:

- (a) A description of the proposed ~~development project, and~~ its objectives ~~and a description of alternatives analyzed;~~
- (b) Economic, financial and other benefits to be derived from the project;
- (c) Anticipated impacts of the activity ~~[including but not limited to]—(physiochemical, oceanographic, geological, biological, socioeconomic), including cumulative impacts in relation to the identified baselines, and the expected recovery rates of the system to its original state;~~
- (d) Mitigation measures to minimize environmental impacts ~~and a description of any residual impacts that may occur despite mitigations;~~
- (e) Linkages with the Authority's global environmental policy and strategy and the applicable regional environmental management plan and the development of the Environmental Monitoring and Management Plan; and
- (f) Consultation undertaken with other parties ~~and Stakeholders.~~

## 1. Introduction

### 1.1 Background

Summarize briefly the project being proposed, including all main activities and locations.

### 1.2 Project viability

Provide information on the viability of the proposed development, its economic context and why the project is needed, and include a description of the benefits to mankind.

### 1.3 Project history

Summarize briefly the work undertaken up to the date the Environmental Impact Statement was finalized and ready to be submitted to the International Seabed Authority. This should include a brief description of the resource discovery, the exploration undertaken and any component testing conducted to date. For the component testing, provide a brief description of activities here. If applicable, include any report(s) related to component testing and Test Mining studies including any monitoring and assessment of the environmental impacts in an appendix.

### 1.4 Project proponent

Summarize the credentials of the proponent, including major shareholders, other contracts or licences held (including in other jurisdictions), previous and existing contracts with the Authority and the proponent's environmental record, etc. The proponent's technological and environmental expertise, capacity and financial resources should be outlined.

## 1.5 This report

### 1.5.1 Scope

Provide detail as to what is and is not included, ~~based on earlier assessments or work and which risks have been prioritised and which received less emphasis, in this Environmental Impact Statement, based on the Scoping Report and previous feedback from the Authority and Stakeholders.~~ Link to other supporting information. ~~A key item that should be included is a previous risk assessment that evaluates activities classified as low risk (and therefore should receive less emphasis), compared with high risk activities, which should be the focus of this Environmental Impact Statement.~~

### 1.5.2 Report structure

Where the Environmental Impact Statement spans multiple volumes, this section should provide additional details not listed in the table of contents.

## 2. Policy, legal and administrative context

Provide information on the relevant policies, legislation, agreements, standards and guidelines that are applicable to the proposed mining operation.

### 2.1 Applicable **national** mining and environmental legislation, policy, and instruments ~~rules, -regulations and procedures of the Authority~~

Outline the national ~~and international~~ legislation ~~and policy adopted in accordance with article 209 of the Convention,~~ regulations, ~~Standards~~ or guidelines as well as the Regional Environmental Management Plan ~~of the Authority,~~ ~~if any~~ that apply to the management or regulation of Exploitation in the Area, including how the proposed operation will ~~comply with~~ ~~implement~~ them.

### 2.2 Other applicable **national** legislation, policies and regulations

Outline any other legislation, policies or regulations that do not necessarily apply specifically to seabed mining or the environment, but may be relevant to the proposal (e.g., shipping regulations, maritime declarations, ~~marine scientific research, climate change policies, Sustainable Development Goals~~). ~~This section should also refer to national regulations and laws that relate to the effects of Exploitation activities on coastal States, or other places where components of Exploitation (e.g., processing) could occur] and how the mining activity will comply with them.~~

### 2.3 Applicable international and regional agreements

In addition to the United Nations Convention on the Law of the Sea and the 1994 Agreement relating to the Implementation of Part XI of the Convention, list the international agreements applicable to the operation, ~~(whether directly or via incorporation into domestic laws cited in section 2.2 above),~~ such as the International Maritime Organization ~~suite of environmental~~ and safety-related conventions, ~~applicable environmental and biodiversity conventions, and applicable regional agreements.~~ which includes the International Convention for the Safety of Life at Sea (SOLAS), the International Convention for the Prevention of Pollution from Ships (MARPOL) and the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other

Matter (London Convention) and the 1996 Protocol thereof; the Convention on Biological Diversity and the Convention on Migratory Species of Wild Animals; and applicable regional agreements and describe how the proposed operation will comply with them.

#### **2.4 Other applicable standards, principles and guidelines**

Discuss applicable standards and guidelines that will be adhered to or aligned with throughout the operation, such as the Standards and Guidelines instruments of the International Seabed Authority not already included in section 2.1, the Equator Principles, the Environmental Management Standards of the International Organization for Standardization, the Code for Environmental Management of Marine Mining of the International Marine Minerals Society, the Performance Standards on Environmental and Social Sustainability of the International Finance Corporation and the Standards of the Extractive Industries Transparency Initiative.

#### **2.5 National Processes**

Describe any national processes followed and permits received from the sponsoring State in relation to the environmental impact assessment.

### **3. Description of the proposed development project**

Provide details of the proposed development activity project, including relevant diagrams and drawings. It is understood that most projects will likely involve the recovery of minerals from the Area, with the concentrating process(es) occurring on land within a national jurisdiction (outside the jurisdiction of the Authority). While it is expected that this section would provide a brief description of the entire project, including offshore and land-based components, the Environmental Impact Statement should focus on those activities occurring within the Authority's jurisdiction (e.g., activities related to the recovery of the minerals from the Area up to the point of trans-shipment).

Details to be provided under this section should include the headings listed below.

#### **3.1 Project area definition**

##### **3.1.1 Location**

Include coordinates of the project area, detailed location maps (drawn to scale), a layout of the site and showing the relevant sites proposed as Contract Area and Mining Area and any other features that can be usefully marked upon the map at the time of application, including the locations of impact reference zones and preservation reference zones. Areas of Particular Environmental Interest, Sites in Need of Protection, or other sites designated for particular status under the rules, regulations, procedures, Standards, or Regional Environmental Management Plans of the Authority. This may also include sites of other competent authorities, as well as information on any other known conservation or spatial measures and other uses of the marine environment (e.g. submarine cables and pipelines,

long-standing scientific research sites and established fishing areas in the vicinity of the project area. The map shall also identify the nearest coastal States and States that may be affected by mining activities, and any adjacent ISA contract sites. This map may be the same as the map supplied in Annex 1 Section II.

### 3.1.2 Associated activities

Describe the supporting activities and infrastructure required (e.g., transportation corridors, ports for disembarkation of vessels, ports for unloading of ore that are outside the direct mining site.

### 3.2 Mineral resource

Provide details of the type of resource proposed for extraction (e.g. sea floor massive sulphides, polymetallic nodules, ferromanganese crusts), the type of commodity and its grade and volume. Estimates of the inferred ~~and~~-indicated resource and probable reserves should be provided on the basis of the international CRIRSCO reporting template or national accepted codes (NI 43-101, JORC Code) and the official ISA mineral classification (PMN, PMS and CFC).

### 3.3 Project components

Provide background information on the proposal and the technologies and equipment to be employed, and include the subsections set out below.

#### 3.3.1 Project scale

Provide an overview of the spatial (horizontal and vertical) and temporal (seasonal and annual) scales of the mining operation, including volumes, depth and physical and chemical properties of material to be recovered, dewatered/processed and deposited or discharged into the water column or back to the seabed, and the target depth range for any such discharge. This should include an account of the area to be physically mined, as well as the likely extent of any secondary impacts (e.g., sediment plumes, noise, light), which will be discussed in greater detail later.

#### 3.3.2 Mining Equipment

Provide details of the technologies to be employed, including relevant diagrams and drawings, that address: the Mining Workplan, timelines and the general mining sequence, the technologies to be employed to recover the resource from the seabed, the depth of penetration into the seabed the specific technologies developed to reduce the direct impact of mining activities (e.g. noise, light, plumes) and other details of the mining activities. Describe the energy requirements of the requisite machinery.

#### 3.3.3 Transport/materials handling

Provide a description of all methods to be used to transport the mineral-bearing ore, including from the sea floor to the surface, and any methods related to the trans-shipment of the mineral-bearing ore, including transfers at sea. Describe the energy requirements of the requisite machinery.

#### 3.3.4 On-site processing

Provide a description of the processing of the mineralized material that will occur within or above the Area, including shipboard processing. Include a description of any methods to be used on the sea floor to separate the mineralized material from surrounding sediment and/or rock, as well as any dewatering of the mineralized material at the surface. This section should also cover any disposal of seawater/fines.

Include a description of the disposal and discharge of sediment, wastes or other effluents into the Marine Environment and the disposal of waste from general ship operations. The handling and management of hazardous materials should also be described, together with a description of the nature of such material and its transportation, storage and disposal. [Describe the energy requirements of the requisite machinery.](#)

### **3.3.5 Support equipment**

Describe any equipment expected for mining and support operations (e.g., mining vessels/platforms, supply vessels, barges). Describe the anticipated frequency of vessel movements for these activities. [Describe the energy requirements of the requisite machinery.](#)

### **3.4 Commissioning**

Describe the pre-production activities that will take place with regard to the establishment and set-up of the site for mining operations. The management of this process (such as the establishment of safety zones around vessels) should also be described.

### **3.5 Construction and operating standards**

Outline the design codes [or certification standards](#) to which the equipment will be or has been built, as well as the operating standards that will be applied to mining operations. This section should include subsections such as those set out below.

#### **3.5.1 Design codes**

#### **3.5.2 Health and safety**

#### **3.5.3 Workforce description**

This section should also outline capacity-building objectives and commitments.

### **3.6 Decommissioning and closure**

Describe the steps that will occur when the mining operation is completed, including the decommissioning of offshore infrastructure, under a Closure Plan.

### **3.7 Other alternatives considered**

Provide an account of alternative options that were considered [if any, that were considered and rejected in favour of the current proposal with justification as to why the alternatives were rejected](#). Aspects should include the selection of the mine site, mine production scenarios, [equipment design and engineering decisions](#), transport and materials handling and shipboard processing.

### **3.8 Development timetable (detailed schedule)**

Provide a description of the overall timetable, from the implementation of the mining programme to the decommissioning and closure of operations. The description should include the major phases



of the operation as well as the milestone dates on which relevant tasks are expected to be completed. Information on the development timetable provided under this section should clearly communicate the different phases in the development proposal. For reasons of clarity, a flow chart or a Gantt or PERT (Programme Evaluation and Review Technique) chart should be used where appropriate. Information provided in this section should include the following:

- (a) The funding arrangement for the proposed activity, or whether the availability of funds is subject to this or other approvals being granted;
- (b) Pre-construction activities including the development and testing of mining equipment, operations and systems in situ (if applicable);
- (c) A construction schedule and staging timetable;
- (d) An infrastructure development schedule;
- (e) A monitoring schedule (during and after operations); and
- (f) A closure schedule.

### 3. bis Description of the Applied Methodology for collecting Baseline Data

(Details see proposal presented by Pew)

## 4. Description of the existing **physicochemical oceanographic** environment

Give a detailed account of knowledge of the environmental (**physical, chemical, geological, oceanographic**) conditions at the **mine site/impact area**, which should include information from a thorough literature review as well as from on-site studies. The Guidelines on baseline data collection shall guide the drafting of this section by providing information on the minimum amount of detail required for an acceptable baseline description. The account will provide the baseline description of the **physical, chemical, geological** and oceanographic conditions against which impacts will be measured and assessed. The detail in this section is ~~expected to be~~ based on a prior environmental risk assessment that will have identified the main impacts, and thus the elements that need to be emphasized in the environmental impact assessment.

### 4.1 Key messages

Provide an overview of key content (this information can be provided in a box that contains up to 6 bullet points on either the main aspects covered or the main findings).

### 4.2 Regional overview

Describe the general **baseline** environmental conditions of the site **and impact area, in accordance with the Standard on baseline data collection**, including **but not limited to** the **physical, chemical** geological and oceanographic setting within a broader regional context and ~~refer in accordance with~~ to the applicable Regional Environmental Management Plan ~~if any~~. This should be brief section that includes a map. A more detailed site-specific **and impact area** description will be provided in accordance with the sections below.

#### 4.3 Studies completed

Describe any prior research/Exploration (including methods used for completing the studies based on Best Available Techniques) that could provide relevant information for this Environmental Impact Statement and future activities. These should be detailed in the appendices, and the environmental reference baseline data collected for the Authority, as outlined in the exploration contract conditions, should accompany the Environmental Impact Statement.

#### 4.4 Meteorology and air quality

Provide a general overview of meteorology/climatology (e.g., wind directions and speeds, seasonal patterns). This section may be most relevant to surface operations.

#### 4.5 Geological properties and habitat classification setting

Describe Provide a baseline description of the nature and extent of the mineral resource and bedrock within a broader geological context. Describe the geological petrographic and geomorphological setting of the site, including high-resolution bathymetric maps and sedimentation rates, and refer to submarine features such as hydrothermal vents, seeps and seamounts. Provide a baseline description of seabed substrate composition characteristics (to benthic subsurface layers), including specific gravity, bulk density, grain size, dissolved and particulate organic and inorganic carbon, nutrients, carbonate, physical and chemical composition of pore-water, redox regimes, and spatial (horizontal and vertical) and temporal (seasonal and interannual) variability in these characteristics. Substrate composition shall be described to a depth below the seafloor prescribed in the relevant Standard or Regional Environmental Management Plan.

#### 4.6 Physical oceanographic setting

Provide a description of oceanographic aspects such as thermohaline conditions, optical properties and turbidity, currents regime, tides, waves, turbulence, and oceanographic fronts and eddies and climate change projections. Seasonal variability is an important element. Detail is required on the regional setting, as well as the specific site, and should include changes in physical conditions and processes according to depth and horizontal distance from the proposed mine site (near-field, far-field)-to boundaries of the Impact Area

#### 4.7 Chemical oceanographic setting

Provide a description of water mass characteristics at the site and above the site at various depths of the water column, including the structure and development of the oxygen minimum zone in particular near the sea floor (up to 200m above bottom), that includes nutrients, particle loads, temperature and dissolved gas profiles, vent-fluid characteristics if applicable, turbidity, etc.

Provide a description of chemical oceanographic properties at the site and above the site throughout the water column, that includes nutrients, particle loads, temperature, oxygen, salinity, density, particulate and dissolved organic matter, pH, chemical composition, including concentrations of trace metals, dissolved gas profiles, depth range and characteristics of oxygen minimum zone, redox regimes, carbonate saturation, and spatial (horizontal and vertical) and temporal (seasonal and interannual) variability of these properties, and vent-fluid characteristics if applicable. Provide projections of how and where these aspects are likely to change over the next 50 years (or time period relevant to the contract term and subsequent Closure period.)

#### 4.8 Seabed substrate characteristics

Provide a description of seabed substrate composition, including physical and chemical properties (e.g., sediment composition, pore-water profiles, grain size, sediment mechanics, dissolved and particulate organic and inorganic carbon, nutrients, carbonate, redox regimes, and spatial (horizontal and vertical) and temporal (seasonal and interannual) variability in these characteristics.

#### 4.9 Natural hazards

Provide a description ~~of~~ and trend analysis of variation related to applicable potential natural hazards for the site, including volcanism, seismic activity, cyclone/hurricane ~~trends~~, tsunamis, etc.

#### 4.10 Noise and light

Provide a description of ambient noise and light, including light intensity, backscatter, and attenuation, and spatial (horizontal and vertical) and temporal (seasonal and interannual) variability in these characteristics, indicating pertinence to fauna where known, and the influence of existing Exploitation, Exploration and maritime activity.

#### 4.11 Greenhouse gas emissions and climate change

Provide a description of the level of gas and ~~chemical~~ fluid emissions from both natural and anthropogenic activities in the Area, as well as those affecting sea floor and water-column chemistry. Effects of mining on ocean climate mitigation functions and services should be described (including any anticipated alteration of CO2 uptake and sequestration, or nutrient cycling).

#### 4.12 Summary of the existing physicochemical environment

Summarize key findings and include notes on special considerations for hydrothermal vents, seeps, ridges, seamounts and oceanographic fronts or eddies, and other geological and oceanographic features described in this section. It is anticipated that this summary will be up to one page and be more extensive than the key messages section.

## 5. Description of the existing biological environment

Give a detailed account of knowledge of the biological communities and ecosystem functions in the Impact Area, including information from a thorough literature review and baseline data collected, in accordance with the Regulations and the applicable Standard. The description of the site should be divided by depth regime (surface, midwater and benthic, where appropriate) or otherwise as indicated in the relevant Regional Environmental Management Plan and provide a description of the various biological components and communities that are present in or utilize the area. The detail in this section is expected to be based on a prior environmental risk assessment that will have identified the main-impacts, and thus the elements that need to be emphasized in the environmental impact assessment.

### 5.1 Key messages

Provide an overview of the key content (this information can be provided in a box that contains up to 6 bullet points on either the main aspects covered or the main findings).

### 5.2 Regional overview

Provide general regional context, and include site-specific issues and characteristics, ~~existing~~-Regional Environmental Management Plan ~~if any, existing~~ -areas of particular environmental interest, ecologically or biologically significant marine areas and national areas of adjacent countries, if any. References to relevant technical data and previous studies should also be included. This section should be brief, but provide broader context for the more detailed site-specific description below.

5.2 Alt Describe the general baseline biological environmental conditions of the site and Impact Area, within a broader regional context and in accordance with the applicable Regional Environmental Management Plan.

### 5.3 Studies completed

Describe any prior research/Exploration (including methods used for completing the studies based on Best Available Techniques) that could provide relevant information for this Environmental Impact Statement and future activity. These should be detailed in the appendices, and the environmental reference baseline data collected for the Authority, as outlined in the exploration contract conditions, should accompany the Environmental Impact Statement.

### 5.4 Biological environment

Provide a description of biological properties in the Impact Area, including Address—diversity, abundance, biomass, life history parameters, relevant behaviour, including feeding rates, community-level analyses, connectivity, trophic relationships, resilience, ecosystem functions and services as well as spatial and temporal variability. Any work on ecosystem models and appropriate ecosystem indicators, etc., should also be presented here. This section should span the size range from megafauna to microbial communities.

The description of the fauna is structured by depth range, as this enables a direct linkage to the source and location of an impact. For each depth zone, there should be a description of the main taxonomic/ecological groups (e.g., plankton, fish, marine mammals,

benthic invertebrates, demersal scavengers), using the Authority's Guidelines.

The description needs to detail fauna communities in the water column down to the Mining Area, including migratory and highly mobile species, their relationship to the natural habitat, including the mineral resource, and the functional ecological relationships across groups to assess the scale of impacts to be expected if mining occurs.

#### 5.4.1 Surface

Describe the biological environment—communities from the surface to a depth of 200 metres, including microbes, plankton (phytoplankton and zooplankton), surface/near-surface fish such as tuna, and seabirds, marine turtles and marine mammals. The description should also evaluate the temporal and spatial variability in distribution and composition.

#### 5.4.2 Midwater

Describe the pelagic fauna, including microorganisms, and their dynamics and interaction, and their habitat in the open water from a depth of 200 metres down to 50 metres above the sea floor, and include zooplankton, nekton, mesopelagic and bathypelagic fishes and deep-diving mammals. The description should also evaluate the temporal and spatial variability in distribution and composition.

#### 5.4.3 Benthic

Describe the benthic microbial, invertebrate and fish communities, including infauna, epifauna and demersal fish, up to an altitude of 50 metres above the sea floor. This should include considerations of species richness, biodiversity, faunal densities, community structures and connectivity, etc. Ecosystem functions, such as Bioturbation etc. should also be covered in this section. The description should also evaluate the temporal and spatial variability in distribution and composition.

#### 5.4.4 Ecosystem/community-level description

Summarize existing community or and ecosystem studies that integrate elements of the above sections. The summary should consider [trophic relationships, ecosystem functioning, benthic-pelagic couplings.] early life-history stages, recruitment and behavioural information. Name any unique, rare and threatened elements, outline which habitats and communities can be considered representative and their distribution, indicate existence and connectivity to the same habitats and communities outside the mine site and the potential impact zone.

#### 5.5 Summary of the existing biological environment

Summarize the key findings with respect to the biological environment, including regional distributions, special faunal characteristics, etc. It is envisaged that this summary will be up to one page in length.

### 6. Description of the existing socioeconomic and socio-cultural environment human activities

This section should describe the socioeconomic and sociocultural aspects of the project area.

## 6.1 Key messages

Provide an overview of key content (this information can be provided in a box that contains up to 6 bullet points on either the main aspects covered or the main findings).

## 6.2 Existing uses

### 6.2.1 Fisheries

~~Relevant fisheries shall be described here. This should include description of areas of significance for fish stocks, such as spawning grounds, nursery areas or feeding sites. Any closed fishery areas such as VME closures, MPAs, or voluntary closures must be named and taken into consideration. If the project area occurs within an area used by fisheries, then this needs to be described here. This should include description of areas of significance for fish stocks, such as spawning grounds, nursery areas or feeding sites as well as ecologically or biologically significant marine areas.~~

### 6.2.2 Marine traffic

This section describes the non-project-related marine traffic occurring within the project area.

#### 6.2.2bis Submarine cables

This section describes the non-project-related submarine cables occurring within the project area.

### 6.2.3 Tourism

Describe areas used by cruise liners and for game fishing, sightseeing, marine mammal watching and other relevant tourism activities.

### 6.2.4 Marine scientific research

Outline the current scientific research programmes taking place in the area.

### 6.2.5 **Ecologically and/or Biologically Significant Areas (EBSAs) and Area-based management tools**

Describe any relevant area-based management established under subregional, regional or global processes and the scope, geographical coverage and objectives of such tools. Also describe any relevant area-based management in adjacent areas under national jurisdiction.

### 6.2.5 **Sociocultural uses**

~~List the sociocultural uses of the project area (e.g., traditional navigation routes, migratory paths of culturally significant marine species, sacred sites and waters associated with ritual or ceremonial activities of Indigenous Peoples and local communities).~~

### 6.2.6 Other

List other uses of the project area that are not related to the above (e.g., other mineral exploration, exploitation projects, ~~traditional navigation~~, marine genetic resources, global-scale regulating and supporting ecosystem services).

### 6.2bis Planned uses

Describe the planned uses of the area for which information is publicly available (e.g. fisheries, maritime traffic, tourism, marine scientific research, submarine cables, area-based management tools).

### 6.3 Sites of an archaeological ~~or~~ historical nature or paleontological

List any sites of archaeological, or historical or paleontological significance and paleontological nature that are known to occur within the potential area of impact.

### 6.4 Summary of existing socioeconomic and sociocultural environment

Summarize key findings regarding the socioeconomic and sociocultural environment. It is envisaged that this section will be up to a page in length, and more extensive than the key messages.

## 7. Assessment of impacts on the physicochemical-oceanographic environment and proposed Mitigation

Provide a detailed description and evaluation of potential impacts and Environmental Effects of the operation to components of the physical chemical, geological and oceanographic environment identified in section 4. This may need to consider effects that could happen during the construction/development (pre-commissioning), operational and decommissioning phases, as well as the potential for accidental events. The detail in this section is expected to be based on a prior environmental risk assessment prepared, reviewed, and revised in accordance with [Annex III(g)]. The preferred approach for this template is to it should include for each component a description of:

(a) The source (action, temporal and spatial duration) and nature of the disturbance;

(a)bis The nature and extent of any actual or potential impact, including cumulative impacts;

(a)ter The methods used to determine impacts (including the assumptions and limitations of any impact modelling undertaken);

(b) Measures that will be taken to avoid, remedy or mitigate such impacts; and

(c) The unavoidable (residual) impacts that will remain, including their expected longevity.

(d) The extent to which any potential impacts and Environmental Effects may occur in areas under a State's national jurisdiction.

It is important that these sections make clear the expected longevity of unavoidable effects. The detail in this section is expected to be based on a prior environmental risk assessment that will have identified the main impacts, and thus the elements that need to be emphasized in the environmental impact assessment.

### 7.1 Key messages

Provide an overview of the key content covered in section 7.

### 7.2 Description of potential impact categories

Provide an overview and description of the categories of general potential impacts caused by the proposed mining operation. This should introduce the major types of effectpotential impacts, such as habitat removal, the creation of sediment plumes, noise and light, etc. and be used in the subsequent descriptions and evaluations of potential

environmental impacts and Environmental Effects from the proposed operation and alternatives considered to components of the physical, chemical, geologic, and oceanographic environment identified in section 4.

Key elements that need to be included are:

(a) Descriptions of impact studies carried out during exploration (e.g., component testing and the resulting observations from the associated monitoring);

(b) Descriptions of the results of any environmental risk assessments, which should be included as separate reports or appendices where appropriate; and

(c) Descriptions of the methods applied to describe and quantify impact categories and assessment.

### 7.3 Meteorology and air quality

Provide a description of potential impacts and Environmental effects on air quality and components of meteorology from the surface or subsurface operations.

#### 7.3.1 Potential impacts and Environmental Effects and issues to be addressed

#### 7.3.2 Environmental management measures to mitigate impacts and effects

#### 7.3.3 Residual impacts

### 7.4 Geological setting

Provide a description of impacts the mining operation may have on the geomorphology of the site or its sedimentary and geological characteristics.

#### 7.4.1 Potential impacts and issues to be addressed

#### 7.4.2 Environmental management measures to mitigate impacts

#### 7.4.3 Residual impacts

### 7.5 Physical oceanographic setting ~~Provide a description of the effects on the current speed/direction, etc. A regional oceanographic model will be relevant to this section.~~

Provide a description of the impacts (e.g., sediment plume generation, discharge water) and their effects on the oceanographic settings (e.g., changes in temperature and salinity of water, optical characteristics and turbidity, etc.). A regional oceanographic model will be relevant to this section. Characteristics of sediment and discharge plumes (their frequency, spatial extent, composition and concentration, etc.) should be described (or a reference is made to subparagraph 7.6)

#### 7.5.1 Potential impacts and issues to be addressed

#### 7.5.2 Environmental management measures to mitigate impacts

#### 7.5.3 Residual impacts

### 7.6 Chemical oceanographic setting



Provide a description of the effects such as sediment plume generation (frequency, spatial extent, composition and concentration) and the clarity of water, particulate loading, water temperature, dissolved gas and nutrient levels etc., in all relevant levels of the water column. A regional oceanographic model will be relevant to this section. For a sea floor massive sulphide project, the modification of vent-fluid discharges, if present, should be addressed.

#### 7.7 Seabed substrate characteristics

For example: changes in the sediment composition, grain size, density and pore-water profiles.

#### 7.8 Natural hazards

Discuss any impacts of the operation on natural hazards and plans to deal with these hazards.

#### 7.9 Noise and light

~~Provide a description of the expected emissions of noise and light potential impacts and Environmental Effects from the proposed operation from, a~~ Noise and light above existing levels and any potential environmental effects, especially ~~the~~any impacts of noise on marine mammals.

Commented [A1]: What should these be?

Commented [A2]: Revised wording for clarification.

#### 7.10 Greenhouse gas emissions and climate change

~~Provide an~~A assessment of gas and chemical emissions from proposed operations, relative to emissions both natural and anthropogenic activities, ~~as well as those affecting sea floor and water column chemistry.~~ Subsections should include estimated greenhouse gas emissions and a greenhouse gas emissions assessment where appropriate.

#### 7.11 Maritime safety and interactions with shipping

~~Provide a description of predicted maritime~~ Include project safety issues and potential interactions with other vessels ~~from the proposed activities.~~

#### 7.12 Waste management

~~Provide a description of proposed~~ Vessel waste management, with reference to compliance with relevant conventions, legislation and principles, and methods of cleaner production and energy balance.

#### 7.13 Cumulative impacts

~~Provide a description of~~ the source of nature and extent of any interactions between various potential environmental impacts and Environmental Effects. ~~Where they may have cumulative effects, they~~ must be considered on both spatial and temporal scales over the lifetime of the proposed mining operation.

#### 7.13.1 Proposed operations impacts

Cumulative within the ~~scope~~ Impact Area of the mining proposed herein.

#### 7.13.2 Regional operation impacts

Cumulative between activities, where known in the region.

#### 7.14 Other issues

Outline here other, more general issues, as applicable.

#### 7.15 Summary of residual effects

Summarize key findings on potential environmental impacts and Environmental Effects, environmental management measures, residual effects and their significance, and any potential impacts and effects to areas under any State's national jurisdiction. A table may be a useful summary format to pull together the above elements in a simple visual mode.

### 8. Assessment of impacts and Environmental Effects on the biological environment and proposed Mitigation

Provide a detailed description and evaluation of potential impacts and Environmental Effects of the proposed operation and alternatives considered in section 3.7 to the biological environment components identified in section 5 in the Impact Area. This may need to eConsider impacts and effects that could happen during the construction/development (pre-commissioning), operational and decommissioning phases, as well as the potential for accidental events. The preferred approach for this template to include for each component provide a description of:

(a) The source (action, temporal and spatial duration) and nature of the disturbance;

(a)bis The nature and extent (temporal and spatial) of any actual or potential impact, including cumulative impacts;

(a)ter The methods used to determine impacts (including the assumptions and limitations of any impact modelling undertaken);

(b) Measures that will be taken to avoid, remedy or mMitigate and manage such impacts with reference to the submitted EMMP; and

(c) The unavoidable (residual) impacts that will remain, including their significance and expected longevity.

(d) A description–An evaluation of the impacts and effects against Thethe applicable environmental goals and objectives, indicators and threshold values as identified in the relevant environmental standards and guidelines and in the applicable Regional Environmental Management Plan, if any.

It is important that these sections make clear the expected longevity of unavoidable (residual) impacts and whether or not the biological environment is expected to recover, and in what time frame, following disturbance. The detail in this section is expected to be based on a prior environmental risk assessment that will have identified the main impacts, and thus the elements that need to be emphasized in the environmental impact assessment.

#### 8.1 Key messages

This section should provide an overview of the key content covered in section 8.

#### 8.1bis Description of the key sources of environmental impacts

This section should describe the key sources of impacts on the marine environment from the mining operation.

## **8.2 Description of potential impact categories**

This section is an overview and description of the categories of general impacts caused by the mining operation. This is not expected to be detailed, but rather to introduce the major types of impacts and their effects, such as habitat removal, the crushing of animals, the creation of sediment plumes, noise and light, etc. A description should be included of any lessons learned from activities during the exploratory phase of the programme (e.g., mining system component tests).

Key elements that need to be included are:

(a) Descriptions of impact studies carried out during exploration (e.g., component testing and the resulting observations);

(b) Descriptions of the results of any environmental risk assessments, which should be based on the initial environmental risk assessment conducted in accordance with Regulation 46quarter and included in the Scoping Report, and may be included as separate reports or appendices where appropriate; and

(c) Descriptions of the methods applied to describe and quantify impact categories and assessment of associated effects that have not previously been described in section 3bis.

## **8.3 Surface**

Description of potential effects on the biological environment from the surface down to a depth of 200 metres, including any impacts on plankton (phytoplankton and zooplankton), nekton, surface/near-surface fish such as tuna, and seabirds, marine turtles and marine mammals.

### **8.3.1 Potential impacts and issues to be addressed**

### **8.3.2 Environmental management measures to mitigate impacts**

### **8.3.3 Residual impacts**

## **8.4 Midwater**

Description of the potential effects on the biological environment from a depth of 200 metres down to 50 metres above the sea floor, including zooplankton, nekton, mesopelagic and bathypelagic fishes and deep-diving mammals.

### **8.4.1 Potential impacts and issues to be addressed**

### **8.4.2 Environmental management measures to mitigate impacts**

### **8.4.3 Residual impacts**

## **8.5 Benthic**

Description of the potential effect on benthic invertebrate and fish communities, including infauna, epifauna and demersal fish, up to an altitude of 50 metres above the sea floor.

#### 8.5.1 Potential impacts and issues to be addressed

#### 8.5.2 Environmental management measures to mitigate impacts

Commented [A3]: Reference to EMMP should be inserted.

#### 8.5.3 Residual impacts

##### 8.6 Ecosystem/community level

Describe estimated effects on the ecosystem or where linkages between the various components above are known.

#### 8.6.1 Potential impacts and issues to be addressed

#### 8.6.2 Environmental management measures to mitigate impacts

#### 8.6.3 Residual impacts

##### 8.7 Cumulative impacts

The nature and extent of any interactions between various impacts where they may have cumulative effects must be considered. This should include an evaluation of the spatial and temporal intensity of mining and its effects on other impacts as well as an evaluation of the nature and spatial and temporal extent of any potential and actual interference with the ecological balance of the marine environment.

#### 8.7.1 Proposed operations impacts

Cumulative within the scope of the mining proposed herein.

#### 8.7.2 Regional operation impacts

Cumulative between activities, where known in the region.

##### 8.8 Summary of residual effects

A table may be a useful summary format.

### 9. Assessment of impacts on the socioeconomic environment and proposed Mitigation

~~As in the preceding sections,~~ provide a detailed description and evaluation of potential impacts and Environmental Effects of the operation to the socioeconomic components identified in section 6. This may need to consider effects that could happen during the construction/development (pre-commissioning), operational (including maintenance) and decommissioning phases, as well as the potential for accidental events. The preferred approach for this template is to include for each component a description of:

(a) The source, nature and temporal (seasonal and annual) extent of any actual or potential impacts and effects from the proposed operation and alternatives considered, including cumulative impacts;

(a)bis The methods used to determine impacts (including the assumptions and limitations of any impact modelling undertaken);

(b) Measures that will be taken to ~~avoid, remedy or m~~itigate and manage such impacts within acceptable levels from the proposed operation.

(c) The unavoidable (residual) impacts that will remain.

(d) The extent to which any potential impacts and effects may occur in areas under a State's national jurisdiction.

#### 9.1 Key messages

This section should provide an overview of the key content covered in section 9.

## 9.2 Impact identification

### 9.2.1 Existing uses

For each of the following marine uses, describe:

- (a) Potential impacts and effects and issues to be addressed;
- (b) Environmental management measures to Mitigate impacts and effects;
- (c) Residual impacts and effects; and
- (d) Potential impacts and effects in areas under any State's national jurisdiction

#### 9.2.1.1 Fisheries ~~A description of potential impacts and issues to be addressed, along with proposed management measures and a description of residual impacts.~~

##### ~~9.2.1.1.1 Potential impacts and issues to be addressed~~

##### ~~9.2.1.1.2 Environmental management measures to mitigate impacts~~

##### ~~9.2.1.1.3 Residual impacts~~

##### ~~9.2.1.2 Marine traffic ~~A description of potential impacts on non-project-related marine traffic occurring within the project area, along with proposed management measures and a description of residual impacts~~~~

#### 9.2.1.2bis Submarine cables

A description of potential impacts on non-project-related submarine cables occurring within the project area, along with proposed management measures and a description of residual impacts.

#### 9.2.1.3 Tourism

A description of potential impacts and issues to be addressed, along with proposed management measures and a description of residual impacts.

#### 9.2.1.4 Marine scientific research

A description of potential impacts and issues to be addressed, along with proposed management measures and a description of residual impacts.

#### 9.2.1.5 Area-based management tools

A description of potential impacts and issues to be addressed, along with proposed management measures and a description of residual impacts.

**Commented [A4]:** Not exactly an existing „use“ – suggestion to create a separate subchapter for ABMT.

#### 9.2.1.5bis Ecosystem Services

A description of potential impacts of the operation on any ecosystem services, for example, carbon burial and sequestration

#### 9.2.1.6 Other

List other potential impacts that are not related to the above (e.g., submarine cables, other mineral Exploration or Exploitation projects).

#### 9.2.1bis Planned uses

Describe the potential impacts on planned uses of the area for which information is publicly available (e.g. fisheries, maritime traffic, tourism, marine scientific research, submarine cables, area-based management tools).

#### 9.3 Sites of an archaeological or historical nature

Describe, as applicable, potential impacts to sites of archaeological or historical significance that are known to occur within the potential area of impact, along with proposed management measures and a description of residual impacts.

#### 9.4 Socioeconomic and sociocultural issues

This section will provide a description of socioeconomic and sociocultural benefits or impacts, including any applicable social initiatives.

#### 9.4 bis Gender Impact analysis

Assess and analyse how the proposed operations may impact on gender roles and relationships.

#### 9.5 Summary of ~~existing socioeconomic~~ ~~sociocultural~~ environment

Summarize key findings on potential impact and effects, management measures, residual effects, and any potential impacts and effects [to areas under any State's national jurisdiction]. A table may be a useful summary format to pull together the above elements in a simple visual mode. Potential cumulative effects should also be included.

#### 9bis. Assessment of Uncertainty

##### 9bis.1 Uncertainty Assessment

Provide a detailed description and evaluation of any uncertainties in the assessments described in section 7, 8, and 9. This uncertainty assessment shall:

(1) Identify any relevant areas of uncertainty and gaps in knowledge and their implications for the environmental impact assessment and its findings; and,

(2) Describe the measures taken in the environmental impact assessment to reduce uncertainty in its findings to as low as reasonably practicable.]

##### 9bis.2 Addressing Significant Uncertainty

Where significant uncertainty exists despite the efforts described in 9bis.1(b), provide a detailed description of environmental monitoring and management measures for managing and reducing uncertainty during the proposed operations, to be incorporated into the Environmental Monitoring and Management Plan and describe how these will enable the applicant to ensure compliance with relevant Rules of the Authority.]

## 10. Accidental events and natural hazards

Environmentally hazardous discharges resulting from accidental and extreme natural events are fundamentally different from normal operational discharges of wastes and wastewaters. This section should outline the possibility/probability of accidental events occurring, the

impact they may have, the measures taken to prevent or respond to such an event and the residual impact should an event occur.

For each component include:

- (a) The nature and extent of any impact;
- (b) Measures that will be taken to avoid, mitigate or minimize such impact; and
- (c) Residual impacts.

#### **10.1 Extreme weather**

For example: hurricanes/cyclones.

#### **10.2 Natural hazards**

For example: volcanic eruptions, seismic events.

#### **10.3 Accidental events**

For example: leakage or spillage of hazardous material, fires and explosions, and collisions, including potential loss of equipment.

### **11. Environmental management, monitoring and reporting**

Provide sufficient information to enable the Authority to anticipate possible environmental management, monitoring and reporting requirements for an environmental approval. Information listed include a description of the applicant's environmental management system and should reflect the proponent's environmental policy and the translation of that policy to meet the requirements of this section and previous sections during different stages of the project life (i.e., from construction to decommissioning and closure).

The Environmental Management and Monitoring Plan is a separate report from the Environmental Impact Statement, but this could be a useful opportunity to highlight some of the key issues from the Statement that will be addressed in the full Environmental Management and Monitoring Plan. Information detailed in this section should include the headings set out below.

#### **11.1 Organizational structure and responsibilities**

This section should show how the Contractor's environmental team fits into its overall organizational structure. Responsibilities and professional qualifications of key personnel should be outlined. Data should be disaggregated by gender.

#### **11.2 Environmental management system**

A full environmental management system shall exist at the time the Environmental Impact Statement is submitted. The applicant has to demonstrate that it will be capable of managing all appropriate relevant environmental questions, and outline the standards that will be considered and/or aligned with when developing the system for the project.

#### **11.3 Environmental Management and Monitoring Plan**

An Environmental Management and Monitoring Plan will be submitted as a separate document for the Authority's approval prior to the commencement of mining operations. This section should provide an overview of what the Plan would entail. With reference to This

~~section should include, at a minimum, the headings set out below and Annex VIII of the Exploitation Regulations of the Authority. Alternatively, the applicant may prefer to submit the draft Environmental Management and Monitoring Plan alongside this EIS and use this section to cross-refer.~~

#### 11.3.1 Mitigation and management

Summarize the ~~mitigation and management measures that will be taken, based on actions and commitments that have arisen from the impact minimization and mitigation analysis undertaken as part of the environmental impact assessment strategies.~~

#### 11.3.2 Monitoring plan

Summarize the monitoring plan approach and programme.

##### 11.3.2.1 Approach

##### 11.3.2.2 Programme

Provide an overview of the envisaged monitoring programme (further detail will be provided in the Environmental Management and Monitoring Plan).

#### 11.3.3 Closure Plan

A Closure Plan will be submitted as a separate document for the Authority's approval. However, this section should provide an overview of what the Closure Plan will entail, including decommissioning, continued monitoring and rehabilitation measures, if applicable. ~~Alternatively, the applicant may prefer to submit the draft Closure Plan alongside this EIS and use this section to cross-refer.~~

#### 11.4 Reporting

##### 11.4.1 Monitoring

Outline how the results of monitoring studies will be reported to the Authority.

##### 11.4.2 Incident reporting

Outline how Incidents will be reported and managed.

### 12. Product stewardship

Provide a brief description of the intended use of the mineral-bearing ore once it leaves the Area. The description should also address the meeting of standards for environmental management. The intention is not to provide a full and highly detailed account, but, where information is known about environmental impacts, these impacts should be described briefly here.

### 13. Consultation

Describe the nature and extent, ~~participation and outcomes of consultation(s) that have taken place with parties identified who have existing interests in the proposed project area and with other relevant stakeholders.~~

#### 13.1 Consultation methods

Describe the mechanism(s) used to consult with different groups and how this aligns with any relevant ~~consultation~~

**Commented [A5]:** To be revisited after streamlining of consultation procedures throughout the regulations (cf. UK initiative).



obligations[Standards and Guidelines]. [including in the Regulations and Standards]

### 13.2 Stakeholders

List ~~any-relevant-s~~Stakeholders that have been consulted and explain the process by which ~~s~~Stakeholders were identified.

### 13.3 Public consultation and disclosure

Provide a description of the goals and consultation workshops/meetings that occurred prior to the preparation of the report. Include a description of the concerns and comments identified by ~~s~~Stakeholders and how these will be addressed, and, if not, describe the reasons for that decision.

### 13.4 Continuing consultation and disclosure

Outline any further consultation with ~~s~~Stakeholders that has been deemed necessary and is being planned.

## 14. Glossary and abbreviations

Explain the relevant terms used in the Environmental Impact Statement (e.g., terms under different legislation, technical terms) and provide a list of acronyms and their definitions.

## 15. Study team

Outline the people involved in carrying out the environmental impact assessment studies and in writing the Environmental Impact Statement. If independent scientists or other experts were involved in any of the work, they should be listed. The names, occupational qualifications and their role in the generation of the Environmental Impact Statement of such people should also be included. Any conflict of interest must be identified, reported and managed.

## 16. References

Provide details of reference materials used in sourcing information or data used in the Environmental Impact Statement.

## 17. Appendices

The appendices should include all the technical reports carried out for parts of the environmental impact assessment and the Environmental Impact Statement.

#### 4. Please indicate the rationale for the proposal. [150 word limit]

We support most amendments inserted by the Facilitator and thank her for the great improvement of this Annex. Our additional text amendments are **highlighted in yellow**. On a general note, we believe that coherence between this Annex, the relevant EIA/EIS regulations and the respective Standards and Guidelines needs to be

strengthened. Furthermore, it needs to be unmistakably clarified that the contained requirements are binding minimum requirements, rather than a pick list. Also, a reference to the required Test Mining needs to be included (once agreed), as the results of this Test Mining will inform the EIA and EIS. Chapters 7-9 appear to be more descriptive than providing actual assessments. A chapter requiring a full risk assessment, evaluation and management is so far missing. Since the EIA Guideline includes a risk assessment process, the results of this needs to be reflected in the EIS. We support the inclusion of a new chapter 3bis on the Description of the Applied Methodology for collecting Baseline Data.