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**Item 11 of the provisional agenda\***  
**Draft regulations on exploitation of mineral resources in the Area**

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**Parts IV: Annexes IV, VII, VIII**

Drafting proposals submitted by delegations as compiled on 28 March 2022

## Annex IV

### Environmental Impact Statement

#### Explanation / comment

- While the proposals which in my view did not encounter any opposition at the February 2020 session of the Council are reflected in Annex IV, it is noted that the Legal and Technical Commission on this issue developed a draft standard and draft guidelines on Environmental Impact Assessments and draft guidelines on the preparation of the Environmental Impact Statement.
- Discussions will need to continue regarding the mandatory or recommendatory nature of the template, noting that different views were expressed at the February session of the Council and that draft regulation 47(3) currently states that the Environmental Impact Statement *shall* be in the form prescribed in Annex IV. It is noted that sections 1 and 2 below seem currently contradictory on this aspect, with section 1 using mandatory language while section 2 uses recommendatory language.

#### 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, in accordance with the relevant regulations, Standards and Guidelines, 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 considers an 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.

#### 2. Template for Environmental Impact Statement

The recommended format 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 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.

The 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. It does not provide details of methodology or thresholds that may be resource- and site- specific. These methodologies and thresholds may 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 and its objectives;
- (b) Economic, financial and other benefits to be derived from the project;
- (c) Anticipated impacts of the activity (physicochemical, biological, socioeconomic);
- (d) Mitigation measures to minimize environmental impacts;
- (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.

### Explanation / comment

- The proposed reference to the Authority's global environmental policy and strategy in paragraph (e) may need further discussion and explanation by the proponent of this addition, in particular whether this is intended to refer to the Authority's environmental goals and objectives currently under development.

## 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 [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. 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 mining and environmental legislation, policy, and [agreements/instruments](#)**

Outline the national and international legislation, regulation or guidelines [as well as the Regional Environmental Management Plan](#) 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 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.

### **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 list](#) the international agreements applicable to the operation, such as ~~the United Nations Convention on the Law of the Sea and~~ the International Maritime Organization suite of environmental and safety conventions, 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.

**Explanation / comment**

- The revision in the first part of the paragraph aims at making clear that the Convention and the Part XI Agreement are not optional instruments, since the application of these instruments is not left to the appreciation of the Contractor or sponsoring State.
- In light of the proposed additional instruments considered potentially applicable by delegations, as reflected in the second part of the paragraph, and of the fact that sponsoring States, flag States and port States may not all be parties to the specific instruments, consideration could be given to including a more general formulation along the following lines:

“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, such as the International Maritime Organization environment and safety-related conventions, applicable environmental and biodiversity conventions, and applicable regional agreements.”

**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 of the International Seabed Authority, 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.

**3. Description of the proposed development**

Provide details of the proposed development activity, 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 the locations of impact reference zones and preservation reference zones.

### **3.1.2 Associated activities**

Describe the supporting activities and infrastructure required (e.g., transportation corridors) 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 should be provided, along with visual models of the resource.

### **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 and temporal scales of the mining operation, including volumes of material to be recovered, processed and deposited or discharged into the water column or back to the seabed. 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), which will be discussed in greater detail later.

#### **3.3.2 Mining**

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 and other details of the mining activities.

#### **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.

#### **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.

#### **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.

### **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 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 and rejected in favour of the current proposal. Aspects should include the selection of the mine site, mine production scenarios, 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.

**Explanation / comment**

- The proposed reference to “the development and testing of mining equipment, operations and systems” in paragraph (b) could be further explained by its proponent and revisited in light of the

Recommendations for the guidance of contractors for the assessment of the possible environmental impacts arising from exploration for marine minerals in the Area issued by the Legal and Technical Commission (ISBA/25/LTC/6/Rev.1 and Corr.1), which provide definitions for “test mining” and “testing of mining components”.

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

Give a detailed account of knowledge of the environmental conditions at the mine site, 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 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 environmental conditions of the site, including the geological and oceanographic setting within a broader regional context [and refer to the applicable Regional Environmental Management Plan.](#) This should be a brief section that includes a map. A more detailed site-specific 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 climatology (e.g., wind directions and speeds, seasonal patterns). This section may be most relevant to surface operations.

#### **4.5 Geological setting**

Describe the nature and extent of the mineral resource and bedrock within a broader geological context. Describe the ~~general geological landscape and topographic features~~ 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.

#### **4.6 Physical oceanographic setting**

Provide a description of oceanographic aspects such as currents, ~~sedimentation rates~~ oceanographic fronts, eddies, particle flux and waves. 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).

#### **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 ~~and geochemistry~~, etc.

#### **4.8 Seabed substrate characteristics**

Provide a description of substrate composition, including physical and chemical properties (e.g., sediment composition, pore-water profiles, grain size, sediment mechanics).

#### **4.9 Natural hazards**

Provide a description of 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, and the influence of existing Exploration and maritime activity.

#### **4.11 Greenhouse gas emissions and climate change**

Provide a description of the level of gas and chemical emissions from both natural and anthropogenic activities in the Area, as well as those affecting sea floor and water-column chemistry.

#### **4.12 Summary of the existing physicochemical environment**

Summarize key findings and include notes on special considerations for

hydrothermal vents, seeps, seamounts and oceanographic fronts or eddies. 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**

The description of the site should be divided by depth regime (surface, midwater and benthic, where appropriate), 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](#), areas of particular environmental interest 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.

### **5.3 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**

Address diversity, abundance, biomass, community-level analyses, connectivity, trophic relationships, resilience, ecosystem function 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 from the surface to a depth of 200 metres, including plankton (phytoplankton and zooplankton), surface/near-surface fish such as tuna, and seabirds and marine mammals. [The description should also evaluate the temporal and spatial variability in distribution and composition.](#)

#### **5.4.2 Midwater**

Describe the ~~biological environment~~ [pelagic fauna 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 invertebrate and fish communities, including infauna 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. Bioturbation should also be covered in this section.

#### **5.4.4 Ecosystem/community-level description**

Summarize existing community or ecosystem studies that integrate elements of the above sections. The summary should consider early life-history stages, recruitment and behavioural information.

#### **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 environment**

This section should describe the socioeconomic aspects of the project.

#### **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**

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.

#### **6.2.2 bis 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 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.

### **6.2.6 Other**

List other uses of the project area that are not related to the above (e.g., [submarine cables](#), other mineral exploration, exploitation projects, [traditional navigation](#)).

#### **6.2 bis 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**

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

### **6.4 Summary of existing sociocultural environment**

Summarize key findings regarding the 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 environment and proposed Mitigation**

Provide a detailed description and evaluation of potential impacts of the operation to components of the physical 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 preferred approach for this template is to 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 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.

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 impacts caused by the mining operation. This should introduce the major types of effect, such as habitat removal, the creation of sediment plumes, noise and light, etc.

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 effects on air quality from the surface or subsurface operations.

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

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

### **7.3.3 Residual impacts**

## **7.4 Geological setting**

Provide a description of impacts the mining operation may have on the topography—geomorphology of the site or its geological/geophysical

[composition 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 ~~and~~ [sedimentation rates](#), etc. A regional oceanographic model will be relevant to this section.

#### **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**

Noise and light above existing levels.

#### **7.10 Greenhouse gas emissions and climate change**

Assessment of gas and chemical emissions from 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**

Include project safety and interactions with other vessels.

#### **7.12 Waste management**

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**

The nature and extent of any interactions between various impacts, where they may have cumulative effects, must be considered on both spatial and temporal scales over the lifetime of the mining operation.

#### **7.13.1 Proposed operations impacts**

Cumulative within the scope 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**

A table may be a useful summary format to pull together the above elements in a simple visual mode.

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

Provide a detailed description and evaluation of potential impacts of the operation to the biological environment components identified in section 5. 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 preferred approach for this template is to 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 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.

(d) The applicable environmental goals and objectives, indicators and threshold values as identified in the applicable Regional Environmental Management Plan.

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.

### **8.1 bis 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 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).

### **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 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 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**

#### **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.

#### **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 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 nature and extent of any actual or potential impact, including cumulative impacts;

(a) bis The methods used to determine impacts (including the assumptions 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.

### **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**

##### **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.

### **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.

## **9.5 Summary of existing sociocultural environment**

A table may be a useful summary format. Potential cumulative effects should also be included.

## **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 of key personnel should be outlined.

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

[Although a full environmental management system may not shall exist at the time the Environmental Impact Statement is submitted, The applicant has to demonstrate that it will be capable of managing all 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. This section should include, at a minimum, the headings set out below.

#### **11.3.1 Mitigation and management**

Summarize the actions and commitments that have arisen from the impact minimization and mitigation 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.

### **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 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 obligations.

### **13.2 Stakeholders**

List any relevant stakeholders that have been consulted and explain the process by which 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 ~~key—the~~ concerns and comments identified by stakeholders and ~~whether—or~~ ~~no~~ ~~how~~ ~~these~~ ~~applicant~~ ~~intends~~ ~~to~~ ~~will~~ ~~be~~ addressed ~~these~~ ~~concerns~~, and, if not, describe the reasons for that decision.

### **13.4 Continuing consultation and disclosure**

Outline any further consultation with 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.

## **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.

## **I – Members**

### **Canada**

Executive Summary, sections 7 (a)ter, 8 (a)ter and 9 (a)bis

The methods used to determine impacts (including the assumptions [and limitations](#) of any impact modelling undertaken);

### **Rationale**

Modelling methods have limitations as well as assumptions.

### **Costa Rica**

Annex IV Environmental Impact Statement

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, in accordance with the relevant regulations, Standards and Guidelines [and the relevant 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 considers an 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

...

### **Rationale**

1- The EIS has to be guided by the REMP

Annex IV, 4.5 Geological setting

Describe [at the mine site and within a broader geological context](#) the nature and extent of the mineral resource and bedrock within a broader geological context, [including hydrothermal vents, seeps and seamounts](#). [Targeted geological properties are : bathymetry and geomorphology \(including high-resolution sea floor mapping\) , geological setting, sediment and stratigraphy, diagenesis, weathering and remobilization, rock substrate geochemistry and mineralogy, mineral resource geochemistry and mineralogy. In combination with biogeochemical parameters, geological data are used to map the habitat variability](#)~~Describe the general geological landscape and topographic features—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.~~

## Rationale

To write this paragraph in coherence with ISBA/27/C/11 regulation 202

## Micronesia

Annex IV: Section 6 (Title, chapeau, section 6.2.5bis, section 6.2.6, and section 6.4)

### **TITLE: Description of the existing socioeconomic and sociocultural environment**

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

...

#### **6.2.5bis 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**

List other uses of the project area that are not related to the above (e.g., other mineral exploration, exploitation projects, ~~traditional navigation~~)

...

#### **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.

## Rationale

Section 6 of the EIS template deals with not just socioeconomic matters but also sociocultural elements, including the listing of sites of an archaeological or historical nature in section 6.3 as well as the new reference to traditional navigation in section 6.2.6. Also, the title of section 6.4 refers to the summary of the existing sociocultural environment. We propose amending the overall title for section 6, the chapeau/introduction of section 6, and the title and content of section 6.4 to reflect a broader view of section 6, to include both socioeconomic and sociocultural considerations. We also propose having a subsection devoted to sociocultural aspects of the project, which we propose as section 6.2.5bis, which is inspired in part by the work of the CBD in the description of EBSAs as well as the CBD's Akwe: Kon voluntary guidelines for the conduct of cultural, environmental and social impact assessments (<https://www.cbd.int/doc/publications/akwe-brochure-en.pdf>). Consequently, we also propose deleting the reference to traditional navigation in section 6.2.6.

Our proposals for section 6 should be read in conjunction with our separate textual proposals for section 9 of this same EIS template.



For more information on sociocultural elements pertaining to the management of the high seas and the Area (including the work of the ISA as well as work contemplated under a future BBNJ instrument), please see the following:

Considering Indigenous Peoples and local communities in governance of the global ocean commons, by Marjo K. Vierros, et al, Marine Policy, Volume 119, September 2020, available at <https://www.sciencedirect.com/science/article/pii/S0308597X19309212>.

The Necessity of Traditional Knowledge for Management of Deep-Seabed Mining, Deep Ocean Stewardship Initiative Policy Brief, 2021, available at <https://www.dosi-project.org/wp-content/uploads/072-DOSI-Policy-brief-Traditional-Knowledge-for-Management-of-DSM-long-V11.pdf>.

Traditional knowledge and the BBNJ instrument, by Clement Y. Mulalap, et al, Marine Policy, Volume 122, December 2020, available at <https://www.sciencedirect.com/science/article/abs/pii/S0308597X19308620>.

#### **Annex IV: Section 9 (Title, chapeau, section 9.2.1.5bis, and section 9.5)**

As in the preceding sections, provide a detailed description and evaluation of potential impacts of the operation to the socioeconomic **and sociocultural** 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 nature and extent of any actual or potential impact, including cumulative impacts;
- (a)bis The methods used to determine impacts (including the assumptions 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.

...

#### **9.2.1.5bis Sociocultural uses**

A description of potential impacts and issues to be addressed pertaining to sociocultural uses of the 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), along with proposed management measures and a description of residual impacts

**9.5 Summary of existing socioeconomic and sociocultural environment.** A table may be a useful summary format. Potential cumulative effects should also be included.

#### Rationale

Per our textual proposals for section 6 of the EIS template in Annex IV, we support expanding the scope of section 9 of the same template to include references to

sociocultural uses, impacts, and issues of the project area covered by the template, along with similar socioeconomic considerations. We thus propose tweaks to the title and chapeau of section 9 as well as the header of section 9.5, and we also propose a new section 9.2.1.5bis on sociocultural uses in line with a similar proposal of ours for a section 6.2.5bis of the EIS template, and as inspired in part by the work of the CBD in the description of EBSAs as well as the CBD's Akwe: Kon voluntary guidelines for the conduct of cultural, environmental and social impact assessments (<https://www.cbd.int/doc/publications/akwe-brochure-en.pdf>).

For more information on sociocultural elements pertaining to the management of the high seas and the Area (including the work of the ISA as well as work contemplated under a future BBNJ instrument), please see the following:

Considering Indigenous Peoples and local communities in governance of the global ocean commons, by Marjo K. Vierros, et al, Marine Policy, Volume 119, September 2020, available at <https://www.sciencedirect.com/science/article/pii/S0308597X19309212>.

The Necessity of Traditional Knowledge for Management of Deep-Seabed Mining, Deep Ocean Stewardship Initiative Policy Brief, 2021, available at <https://www.dosi-project.org/wp-content/uploads/072-DOSI-Policy-brief-Traditional-Knowledge-for-Management-of-DSM-long-V11.pdf>.

Traditional knowledge and the BBNJ instrument, by Clement Y. Mulalap, et al, Marine Policy, Volume 122, December 2020, available at <https://www.sciencedirect.com/science/article/abs/pii/S0308597X19308620>.

## **Spain**

### **Annex IV.- Environmental Impact Statement Regulation 59.- Closure Plan**

5.4. Biological environment 2 (f) bis Requirements regarding the removal of all installations and their parts and equipment from the Mining Area, including the explicit prohibition of any kind of waste abandonment are addressed; and

The description needs to detail fauna communities in the water column down to the Mining Area **and beyond**, 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.

**If the project is included into an area that has been declared as EBSA (Ecologically or Biologically Significant marine area) in the framework of the Convention of Biological Diversity, description of the impact of the project to the area and to its significant ecological and biological values.**

## **II - Observers to the International Seabed Authority as referred to in rule 82 of the Rules of Procedure of the Assembly**

### **United States of America**

Annex IV Executive Summary

#### **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, ~~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 (physicochemical, biological, socioeconomic), including cumulative impacts;
- (d) Mitigation measures to minimize environmental impacts;
- (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.

#### **Rationale**

As suggested in other edits, the United States notes the importance of including alternatives analysis for decision makers to compare the impacts of a reasonable range of alternatives, as well as a no-action alternative, in sub-paragraph (a). Further, it will be important to consider factors exogenous to the mining project that may interact synergistically with impacts to the marine environment from exploitation in sub-paragraph (c). Finally, paragraph (f) should make explicit reference to consultation with stakeholders along with other parties, as stakeholder consultation is an integral part of the process and would help ensure a transparent process and informed decision-makings.

Annex IV Chapeau Paragraph 2, Template for Environmental Impact Statement

### **2. Template for Environmental Impact Statement**

The ~~recommended~~ format 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 on which the Authority can base its ~~assessment~~ decision, and any subsequent approval that may be granted. Further detail for each section is provided following the overview.

~~The 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. It does not provide details of methodology or thresholds that may be resource- and site-specific. These methodologies and thresholds may be developed as Standards and Guidelines to support the regulations.~~

### Rationale

As noted by many delegations and the Facilitator's explanation, paragraphs 1 and 2 in this section are contradictory. The United States proposes edits to remove the contradiction and clarify the template as part of the legally-binding regulations, as well as clarify that the objective of the Authority's consideration of the EIS is to make a decision on whether or not the activity can go forward. We further suggest language noting the requirement to use Best Available Scientific Evidence and Best Available Technology when documenting potential Environmental Effects.

### Annex IV Section 3

#### **3.7 Other alternatives considered**

Provide an account of alternative options that were considered and rejected in favour of the current proposal, including a "no action" alternative, together with a comparison of the effects of the proposed action and no action alternative. Aspects should include the selection of the mine site, mine production scenarios, transport and materials handling and shipboard processing.

#### **3.8 Mitigation of adverse impacts**

Provide a description of any reasonable measures for avoiding, preventing, minimizing and mitigating adverse impacts.

### Rationale

In paragraph 3.7, we would like to suggest that a description of the results of the analysis of alternatives, including a no-action alternative, be required as part of the Environmental Impact Statement. This will allow decision makers to consider and analyze the impacts of a reasonable range of alternatives to the proposed action, as well as a no-action alternative. A description of the results of alternatives analysis is an essential part of an EIS. Even where there are no technically and economically feasible alternatives, the alternative of "no action" is a means of assessing the effects of the proposed action. Additionally, we recommend adding a paragraph 3.8, to provide a description of the mitigation hierarchy analysis, that is analysis of any reasonable measures for avoiding, preventing, minimizing and mitigating adverse impacts, in that order.

### Annex IV 5.4.3

#### **Benthic**

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

### Rationale

Uniqueness should also be included in this list. It is included in other similar lists in other international fora and is particularly relevant in the deep sea context. In addition, the temporal and spatial variability in distribution and composition should also be evaluated in the benthic environment, as in the midwater and other environments.

Annex IV Section 8

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

Provide a detailed description and evaluation of potential impacts of the operation to the biological environment components identified in section 5 based on the Best Available Scientific Information and Best Available Technologies. 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 preferred approach for this template is to include for each component a description of:

### Rationale

The United States proposes language reiterating the requirement to use Best Available Scientific Evidence and Best Available Technology when describing and evaluating potential impacts.

Annex IV Part 11.

### **11.4.1 Monitoring**

Outline how the results of monitoring studies will be reported to the Authority, as well as the frequency and format of data releases in accordance with the draft regulations and any relevant Standards, and taking into account any relevant Guidelines.

### Rationale

The public release of monitoring data at monthly intervals will allow for regular and routine verification of environmental conditions at the site by the Authority, and contribute to the scientific knowledge about deep sea habitats.

## **Deep Ocean Stewardship Initiative**

Annex IV Executive summary

(c) Anticipated impacts of the activity (physicochemical, biological, socioeconomic), including expected recovery rates of the ecosystem to its original state;

### Rationale

Recovery rates differ between ecosystems and should be clearly stated and acknowledged in the executive summary

#### Annex IV, 3.3.1 Project scale

This should include an account of the area to be physically mined, the discharge depth range, as well as the likely extent of any secondary impacts (e.g., sediment plumes), which will be discussed in greater detail later.

##### Rationale

The target depth range of the discharge plume is important as the depth of this discharge plume will influence its extent as well as the magnitude (or severity) of the plume, because, but not limited to, the dilution of the sediment concentration and the time it will be present in the water column.

#### Annex IV 4.6 Physical oceanographic setting

Seasonal and interannual oceanographic variability are important elements to include, and should be measured over multiple years.

##### Rationale

The current wording of the text suggest that seasonal variability is important, but it does not explicitly state what to do with this. This misses the importance of monitoring such important oceanographic variability, which needs to be understood in relation to potential mining activities. Further, the proposed text now includes interannual oceanographic variability too, for the same reason as seasonal variability.

#### Annex IV 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, and 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.

##### Rationale

The original text could be interpreted in multiple ways. One way it could have been interpreted was that the focus on the 200 m above bottom was in relation to the oxygen minimum zone, which typically occur between water depths of 200 and 1000 m from the sea surface. The proposed textual changes aim to address this unclarity, with the intention that the chemical descriptions occur for the whole water column, but in particular the 200 m above seafloor.

#### Annex IV 4.9 Natural hazards

Provide a description of applicable potential natural hazards for the site, including volcanism, seismic activity, cyclone/hurricane trends, tsunamis, metrics of

climate hazard and cumulative climate hazard, etc.

#### Rationale

Deep-sea mining does not act alone on the ocean, but in concert with potential other stressors or hazards. Climate change will likely change the conditions in which the mining operations take place and therefore should be taken into account in the EIS.

Annex IV 4.11 Greenhouse gas emissions and climate change

Provide a description of the level of gas and fluid emissions from both natural and anthropogenic activities in the Area.

#### Rationale

Both gas and fluids are chemical contents. The proposed textual change is a more appropriate terminological description of the emission characteristics.

Annex IV 5.4 Biological environment

#### 5.4 Descriptions of the Communities and Ecosystem Functioning

Address diversity, abundance, biomass, community-level analyses, connectivity, trophic relationships, resilience, ecosystem function and services and temporal variability.

#### Rationale

The term ‘biological environment’ would refer to the environment experienced by life in the ocean according to most biologists, not life itself. The proposed change would better align with what is described in the paragraph. It is important to recognize the ecosystem services provided by the biological communities residing in the contract areas, and the proposed addition would do so.

Annex IV 5.4.1 Surface

Describe the biological communities from the surface to a depth of 200 meters, including microbes, plankton (phytoplankton and zooplankton), surface/near-surface fish such as tuna, and seabirds and marine mammals.

#### Rationale

The term ‘biological environment’ refers, for most biologist, not to the

life itself, but to the environment experienced by life. Further, microbes are an important component of the ecosystem and should be included in the EIS.

#### Annex IV 5.4.3 Benthic

Describe the benthic [microbial](#), invertebrate and fish communities, including infauna and demersal fish, up to an altitude of 50 meters above the sea floor.

#### Rationale

Microbes are an important component of the ecosystem and should be included in the EIS.

#### Annex IV 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](#)).

#### Rationale

The entire EIS needs a characterization of the global-scale regulating and supporting ecosystem services, including (but not limited to) carbon burial and sequestration, nutrients recycling. It is another use, but could benefit from having its own section too. Last, marine genetic resources are present in the project area and merit attention.

#### Annex IV 6.3 Sites of an archaeological or historical environment

6.3 Sites of an archaeological, historical, [cultural or paleontological](#) nature

List any sites of archaeological or historical significance, [cultural property or cultural heritage, and paleontological nature](#) that are known to occur within the potential area of impact.

#### Rationale

The contractor areas could potentially also cover areas that are culturally or paleontologically important, and these should be considered. This may relate, for example, but not limited to, to traditional knowledge, or sites that may relate to the mid-Atlantic Slave Trade.



## **The Pew Charitable Trusts**

Annex IV (Additional Annex on content of Scoping Report proposed as well)

### ANNEX IIIbis: Scoping Report

A Scoping Report should be submitted to the Authority in accordance with the relevant Standard and Guideline, and should include:

- (a) A brief description of the proposed Exploitation activities and any ancillary features, including what is known or anticipated about where the mining will occur within a Contract Area and the mining machinery to be used.
- (b) A description of what is known about the environmental setting for the project (Contract Area and regional setting),
- (c) Summary of existing environmental baseline studies, including a description of methodology for collecting and analyzing the baseline data,
- (d) Description of the technical, spatial and temporal boundaries for the EIA,
- (e) A list of any assumptions relied upon and identification and quantification of the uncertainties at this stage of the EIA, how they are being addressed, and assessment of their implications to the environmental risk assessment findings
- (f) A preliminary impact analysis which ranks the importance of issues for the EIA and evaluates the need for further information, taking into account the environmental risk assessment.
- (g) An environmental risk assessment, which includes:
  - the environmental consequence for each identified potential impact (the magnitude of the impact and the receptor characteristics),
  - the likelihood of the consequence occurring;
  - the confidence levels of experts, in order to account for uncertainty and a precautionary approach;
- (h) A description of the methodology employed in the environmental risk assessment
- (i) A description of the results of the environmental risk assessment, including identification of high priority risks requiring particular focus in the subsequent impact assessment phase of the EIA;
- (j) A preliminary Stakeholder list that proactively identifies likely Stakeholders, and an indicative schedule and methodology for engagement with key Stakeholders throughout the EIA process;
- (k) A report of consultations undertaken during scoping;
- (l) Consideration of feasible alternative means of carrying out the project that will be examined in detail in the EIA, and any others that have been discounted at this stage, and the reasons for that selection;
- (m) A draft Terms of Reference for the EIA, which identifies the activities and studies planned for the EIA, and any additional baseline data that will be required;
- (n) Explanation for how the activities and studies planned for the EIA will be sufficient to determine likely environmental impacts, and to propose Mitigation and management strategies and monitoring methodology;
- (o) A note describing and explaining any divergence from relevant ISA Guidelines.

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

(b) Provide information, based on data from, as a general rule, a minimum of 15 years of monitoring and in accordance with the relevant regulations, Standards and Guidelines, and the relevant 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

(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.

### **Executive summary**

(c) Anticipated impacts of the activity (physical, chemical, oceanographic, geological, biological, socioeconomic) including 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 Mitigation;;

## Section 1: Introduction

### 1.5.1 Scope

Provide detail as to what is and is not included, 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 ~~based on earlier assessments or work~~. 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.~~

## Section 2: Policy , Legal and Administrative Context

### 2.1 Applicable mining and environmental legislation, policy, and ~~agreements~~instruments

Outline the national and international legislation, regulation, **Standards** or guidelines as well as the Regional Environmental Management Plan that apply to the management or regulation of Exploitation in the Area, including how the proposed operation will ~~comply with~~ implement 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-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 United Nations Convention on the Law of the Sea and~~ the International Maritime Organization suite of environmental and safety conventions, 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 instruments ~~the Standards and Guidelines~~** 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.**

## Section 3. Description of the Proposed Development

### 3.1.1 Location

Include coordinates of the project area, detailed location maps (drawn to scale) 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, ~~a layout of the site and~~ 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.

#### **3.3.1 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, 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 and a map 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 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 from the mining vessel to the processing plant, 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.

### **3.5 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.

### **3.7 Other alternatives considered**

Provide an account of alternative options 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.

## **Section 3bis Methodology for Description of the Marine Environment and Assessment of Impacts and Environmental Effects**

### **3bis.1 Studies completed**

Describe any prior research/Exploration 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.~~

### **3bis.2 Methodology for Collecting Baseline Data**

For each of the baseline descriptions of the Marine Environment in sections 4 and 5 and socioeconomic environment in section 6, describe the methodology for collecting baseline data, including:

- spatial and temporal extent of sampling;
- spatial and temporal frequency of sampling;
- gear used for sampling and any modifications or calibrations conducted to the gear;
- results of power analysis;
- limitations of sampling and how this may impact certainty of impact assessments; and
- Any cooperation with other research programmes in the Area, such as with the ISA, States, other Contractors, or non-governmental organizations.

Highlight any deviations from baseline data collection requirements provided in relevant Standards and Guidelines, and the Regional Environmental Management Plan.

Raw baseline data and computer code used to analyse and provide a description of the Marine Environment shall be included in the annexures of the Environmental Impact Statement or, if the data and/or code has been previously submitted to the Authority, the applicant may provide a link to the Authority's database where the data and/or code is stored or other location where such information has been made available online.

### **3bis.3 Methodology for Summarizing Baseline Data**

Provide a description of the methodology used to summarize baseline data collected. This shall include:

- a description and justification of transformations performed to the data and analyses used to summarize the data;
- a list of program(s) used to analyze results; and,

Any limitations associated with the results of the analysis.

### **3bis.4 Methodology for Assessments of potential environmental impacts and Environmental Effects to the Marine Environment**

(a) For each assessment of potential environmental impacts and Environmental Effects in sections 7 and 8 and socioeconomic environment in section 9, describe the methodology used to assess impacts and Environmental Effects from proposed operations and alternatives considered in section 3.7. Data, predictive models, and computer code used to analyse and provide a description of the Marine Environment shall be included in the annexures to the Environmental Impact Statement or, if the data, model, and/or code has been previously submitted to the Authority, the applicant may provide a link to the Authority's database where the data and/or code is stored or other location where such information has been made available online. Each description of methodology used to assess impacts shall include:

- a description and justification of analyses and models used to summarize the data; and
- Any limitations associated with the analysis or results.

(b) In accordance with Regulation 47quater, where predictive models have been used these shall be reviewed by competent independent experts and the relevant review reports shall be provided as annexures to the Environmental Impact Statement.

## Section 4 Description of the Existing Physiochemical 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 Standard 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.

### 4.2 Regional Overview

Describe the general baseline environmental conditions of the site and impact area, including the physical, chemical, geological and oceanographic setting within a broader regional context and in accordance with refer to the applicable Regional Environmental Management Plan. This should be brief section that includes a map. A more detailed site-specific description and Impact Area description will be provided in accordance with the sections below.

#### 4.5.1 Description of Broader Geological Setting

Provide a baseline description of ~~Describe~~ the nature and extent of the mineral resource and bedrock within a broader geological context. Describe the ~~general geological landscape and topographic features~~ 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 information about tectonic and geophysical stability.

#### 4.5.2 Description of Seabed Substrate Characteristics

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, concentration of toxic elements, 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 baseline description of physical oceanographic properties including turbidity aspects such as currents, natural particle concentrations throughout the water column, sedimentation rates oceanographic fronts, eddies, particle flux and waves. Seasonal and interannual 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 to boundaries of the Impact Area (near field, far field). Climate change projections should be included.

#### 4.7 Chemical oceanographic setting

Provide a description of ~~water mass~~ chemical oceanographic properties at the site and above the site at various depths ~~of~~ throughout 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, oxygen, salinity, density, particulate and dissolved organic matter, pH, chemical composition, including concentrations of toxic elements and trace metals, ~~and~~ 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, ~~turbidity and geochemistry, etc.~~ 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, concentration of toxic elements, 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 applicable potential natural hazards for the site, including volcanism, seismic activity, cyclone/hurricane trends, tsunamis, and climate-related variability 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 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, 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. 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.

#### **5.2 Regional overview**

~~Provide general regional context, and include site specific issues and characteristics, existing Regional Environmental Management Plan, areas of particular environmental interest 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.~~

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. This should be a brief section that includes a map. A more detailed site-specific description and Impact Area description will be

provided in accordance with the sections below.

#### 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 function and services, and spatial (horizontal and vertical) and temporal (seasonal and interannual) variability of these properties. 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.

5.4.1 Alt Descriptions of biological communities and ecosystem functions shall be structured by depth ranges, described in accordance with relevant Standards, and encompassing, as relevant:

- (a) surface seawater,
- (b) epipelagic zone (< 200 metres)
- (c) mesopelagic zone (200-1000 metres),
- (d) bathypelagic zone (1000 - 4000 metres),
- (e) abyssopelagic zone (4000 - 6000 metres),
- (f) hadalpelagic zone (> 6000 meters),
- (g) demersal zone (part of the water column near to and significantly affected by the seabed), and
- (h) benthic zone.

##### 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 productivity, habitat heterogeneity, food-web complexity, carbon and nutrient cycling, benthic-pelagic coupling, biodiversity, succession, stability, the potential toxicity effects of plumes, bioavailability of toxins, early life-history stages, recruitment and behavioural information.

### Section 7. Assessment of impacts on the physiochemical 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 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 detail in this section is expected to be based on a prior environmental risk assessment prepared, reviewed, and revised in accordance with regulation 47quater. ~~The preferred approach for this template is to include for each component a description of:~~

- (b) Measures that will be taken to ~~avoid, remedy or m~~ 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.

#### 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 ~~effect~~ potential 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.

#### 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~~ proposed operations.

#### **7.x.x Potential impacts and Environmental Effects and issues to be addressed**

#### **7.x.x Environmental management measures to mitigate impacts and effects**

#### **7.x.x Residual impacts**

7.x.x Potential impacts and effects in areas under any State's national jurisdiction

### **7.9 Noise and light**

Provide a description of potential impacts and Environmental Effects from the proposed operation from noise and light above existing levels.

### **7.10 Greenhouse gas emissions and climate change**

Provide an assessment of gas and chemical emissions from proposed operations, relative to emissions from 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 ~~include~~ predicted maritime 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, nature and extent of any interactions between various potential environmental impacts and Environmental Effects across the environment. Where they may have cumulative effects, must be considered on both spatial and temporal scales over the lifetime of the proposed mining operation, and alternatives considered.

#### **7.13.1 Proposed operations impacts**

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

### **7.15 Summary of residual effects**

Summarize key findings on potential environmental impacts and Environmental Effects, environmental management measures, residual effects, and any 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 e~~Consider 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 detail in this section is expected to be based on a prior environmental risk assessment prepared, reviewed, and revised in accordance with regulation 47quater. The description shall be structured by the depth ranges described in section 5



and shall ~~preferred approach for this template is~~ to include for each component a description of:

- (a) ~~bis~~ The nature and extent (temporal and spatial) of any actual or potential impact, including cumulative impacts;
- (b) Measures that will be taken to ~~avoid, remedy or m~~ Mitigate and manage such impacts; and
- (c) The unavoidable (residual) impacts that will remain, including their expected longevity.
- (d) A comparison of the impacts and effects against t~~The applicable environmental goals and objectives, indicators and threshold values as identified in the applicable Regional Environmental Management Plan.~~

## 8.2 Description of potential impact categories

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

Provide an overview and description of the categories of potential impacts caused by the proposed mining operation and alternatives considered. This should introduce the major types of potential 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 biological, physical, chemical, geological, and oceanographic environment identified in section

Key elements that need to be included are:

- Descriptions of impact studies carried out during exploration (e.g., component testing and the resulting observations);
- 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[See Pew Submission 46bis] and included in the Scoping Report, and may be included as separate reports or appendices where appropriate; and
- 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.

## Section 9 Assessment of impacts on socioeconomic environment and proposed Mitigation

~~As in the preceding sections, P~~ 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 (horizontal and vertical) and temporal (seasonal and annual) extent of any actual or potential impacts and effects from the proposed operation and alternatives considered, including cumulative impacts;
- (b) Measures that will be taken to ~~avoid, remedy or m~~ Mitigate and manage such impacts within acceptable levels from the proposed operation. This will include a comparative analysis of how measures taken may differ across alternative operations considered;
- (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.

### 9.2.1 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.

#### **9.2.1.5 bis Ecosystem Services**

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

#### **9.4. Socioeconomic and sociocultural issues**

This section will provide a description of socioeconomic and sociocultural benefits or impacts, including any applicable social initiatives. Information considered relevant to the Convention's 'benefit to mankind' requirement for activities in the Area may be included here.

##### 9.4 bis Gender Impact analysis

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

#### **9.4 Summary of ~~existing socioeconomic impact~~ ~~cultural 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:

- identify any relevant areas of uncertainty and gaps in knowledge and their implications for the environmental impact assessment and its findings; and,
- describe the measures taken in the environmental impact assessment to reduce uncertainty in its findings to as low as reasonably practicable.

##### 9bis.2 Resolving 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.

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

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

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

### **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. ~~This section should include, at a minimum, with reference to 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.

#### **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.

## **Section 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 obligations, including in the Regulations and Standards.

#### **13.3bis Commission consultation**

Summarise the Legal and Technical Commission's recommendations on the g Report and proposed Terms of Reference for the applicant's environmental impact assessment submitted to the Commission, and justification for any deviation either from those submitted Terms of Reference, or from the Commission's recommendations

#### **13.3 ter Stakeholder and coastal State Consultation**

A description of how comments received under Stakeholder consultation have been or will be taken into account, or why they have not been taken into account, and the reasons for that decision.

## **Rationale**

### **Annex (IIIbis)**

'Scoping' is an essential part of the EIA process, in which the adequacy of a planned EIA and baseline datasets can be assessed before an EIA is undertaken. Scoping is critical as it enables early intervention to correct sub-standard EIA processes, targets the EIA processes towards the priority issues, and helps Contractors avoid expending resources on unnecessary or misguided research. Moreover, it provides comfort that a future EIS will not be rejected by the ISA for procedural flaws. While we note that the Draft Standard for environmental impact assessment process has a section on scoping which calls for a scoping report, the required content for this report is not described. We think this would be a useful subject for an additional annex alongside this Annex IV and have submitted specific text accordingly.

## **Executive Summary**

A key element of any environmental assessment is to analyze expected recovery rates of any systems affected. The length of time it will likely take an ecosystem to return to its original state may mean the difference between a minor or transitory impact and those that may last for years or in the case of the deep ocean, much longer still. These timelines should be a focus of any summary of anticipated impacts.

## **Section 1**

We propose a conforming edit to account for the incorporation of an initial risk assessment into the Scoping Report.

## **Section 2**

Currently, the ISA has contractors who are private sector companies, as well as State or State-owned contractors. International agreements will generally be applicable to States, but not the private sector companies unless there are national laws that apply the relevant provisions of international treaties to companies within the jurisdiction. We therefore propose a small drafting amendment to this section 2.3 to indicate that international agreements may be applicable to operations either directly, or via incorporation into domestic laws, and that this section further requires a description of how those agreements or laws will be observed.

Also, as clearly described by the ITLOS Advisory Opinion of 2011, Sponsoring States have their own direct obligations to ensure Environmental Impact Assessments are undertaken, which may involve separate processes from those managed by the ISA. We propose an additional provision (see 2.5)

## **Section 3**

Regarding paragraph 3.1.1 we note that the term 'project area' is used. 'Project area' is not a defined term in the Regulations. It may therefore be helpful to specify that the Contract Area and Mining Area (which *are* defined terms) would be included in the project area.

This section 3.1.1 would be a good place in which to require the proponent to identify and elaborate on other marine users in the project area with a view toward describing later in the EIS how it will address them.

We also think there should be a requirement here to identify nearby Coastal States or States that may be affected by the mining activities as this will assist with implementation of DR4 and Article 142 UNCLOS.

Regarding section 3.3.2 we suggest a new short addition at the end of the section (and sections 3.3.4 and 3.3.5), which should read as follows "Describe the energy requirements of the requisite machinery". We propose this addition as we believe the energy requirements of the operation is important information that the ISA should require in order for the ISA to be able to assess the likely climate impacts of the project, and how these may be mitigated and managed and to verify projected emissions.

Regarding section 3.5, We suggest to insert 'or certification standards' after 'design codes'. Certification standards, which are usually audited and verified by third parties, may be a useful mechanism to assist the ISA in reviewing construction and operations standards of applicants.

Regarding section 3.7, we believe that justifications for not choosing alternative approaches and differences from proposed mining operations should be clearly described in this section to allow stakeholders and members of the ISA to be able discern the financial and environmental cost/benefits of each approach.

## **Section 3bis**

It is critical that an EIS should describe methodologies used to prepare it. We note some inclusions to that effect in the facilitator's document, which we support. We are pleased that these include a requirement to describe assumptions relied upon in any models used. However, we would propose it would be clearer, and more in line with usual EIS practice, to include (instead or in addition) a standalone section to describe the methodology used by the proponent, both in collecting baseline data and assessing impacts. This should detail the methodology used to 1. collect baseline information, 2. summarize baseline information, and 3. assess the impact of proposed/alternative mining operations with a justification of those methods and any underlying assumptions. Therefore, we propose that a new section be placed as *3bis*, so that it precedes a discussion of results in the following sections.

## **Section 4**

One general comment: If the intent of these annexes is to provide enough detail for Contractors to carry out the various components of the Plan of Work, then this needs to be fleshed out in greater detail. If the intent of this Annex is merely to provide a template with substantive instructions to follow in Standards, then that should be made clearer. As of right now the drafting seems to us to be inconsistent in the amount of detail used. This comment applies particularly to sections 4-9. We have provided the level of detail we think appropriate but this may need to be revisited after further clarification about the level of detail for templates is clarified.

Regarding the first paragraph, the EIS cover the Impact Area, and use the definition of Impact Area used in a previous version of the draft Regulations.

## **Section 5**

In the introduction to this section, there should be a reference to the relevant REMP, as depth range used for biological baseline descriptions may vary from region-to-region (see further text to this point in 5.4.1 alt above). In addition, to provide coherence and conform to other sections, there should be an instruction incorporated at the beginning of this section setting out the contractor's general duty

Regarding Section 5.2, we believe it can be usefully amended to be more specific.

Regarding 5.4.1-5.4.3, a Standard should be developed to specify the types of biota that need to be identified and how these should be reported, rather than an attempt to describe it in this template, using incomplete lists of examples.

Also the term 'main' taxonomic / ecological groups, should be deleted as it is unclear, subjective, and could have left important groups out of the assessment due to the high degrees of uncertainty regarding various communities in the pelagic zones.

## **Section 7**

There is some inconsistency in drafting between the various subsections. Each subsection should cover the following points:

- 7.x.x. Potential impacts and Environmental Effects and issues to be addressed
- 7.x.x. Environmental management measures to Mitigate impacts and effects
- 7.x.x. Residual impacts
- 7.x.x. potential impacts and effects in areas under any State's national jurisdiction

## **Section 8**

Section 8.3-8.5 could benefit from greater specifics and a more consistent framing as an obligation on a contractor, providing an overview and description of the categories of potential impacts caused by the proposed mining operation and alternatives considered. This should introduce the major types of potential 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 biological, physical, chemical, geological, and oceanographic environment identified in section. These descriptions should be linked back to impact studies conducted, the environmental risk assessment, and descriptions of methods.

## **Section 9**

Several delegations have noted throughout the week the importance of carefully assessing uncertainty in the face of the significant unknowns at play in this largely untested industry. While descriptions of uncertainty should be embedded throughout an EIS wherever it is relevant, we believe that following Section 9, an additional Section 9bis would be the optimal point to include a synthesis of these uncertainties. We have proposed text to this effect.

## **Section 11**

On section 11.1 we note that mining is renowned as one of the worst sectors globally for gender diversity. In

adopting SDG5, States agreed to work to 'achieve gender equality and empower all women and girls' (in all sectors). Taking informed decisions, and tracking success towards that goal is difficult if gender-disaggregated data are not available. We therefore suggest that data on organizational structure and responsibilities be disaggregated by gender.

Regarding 11.3 the draft Regulations envisage an applicant for a Plan of Work submitting to the ISA the EIS (developed in accordance with this template) at the same time as the draft EMMP and Closure Plan, for Council review of both documents concurrently. It might be more sensible, however, for the regulations to provide that an EIS be submitted and reviewed prior to the development of EMMP and Closure Plan. While this would add another stage to the review process, it could usefully clarify the elements to be required in the EMMP and Closure Plan - such as measures to address uncertainty, or the length of post-contract monitoring that may be required by the Closure Plan - before it is submitted. In that case, these subsections would serve as a preview. If the two documents are indeed to be submitted together, it is unclear whether this 11.3-11.4 is needed and we would seek clarity on their intent.

### **Section 13**

This section should describe not only the nature and extent, but also the outcome of consultations that have taken place with Stakeholders. We note that this is a defined term, and should be capitalized here, and would include parties with existing interests.

We also believe this section could benefit from a subsection summarizing the consultations with the LTC, specifically its recommendations on the scoping Report (assuming that we all agree an LTC review of this report would be useful) and proposed Terms of Reference for the applicant's environmental impact assessment submitted to the Commission, and justification for any deviation either from those submitted Terms of Reference, or from the Commission's recommendations. Finally, it could also include a specific summary of the consultations carried out with Coastal States. We have submitted text to this effect.

## Annex VII

### Environmental Management and Monitoring Plan

#### Explanation / comment

- While the proposals which in my view did not encounter any opposition at the February 2020 session of the Council are reflected in Annex VII, it is noted that the Legal and Technical Commission has developed draft guidelines on the preparation of environmental management and monitoring plans.
- Comments in relation to draft regulation 48 concerning the frequency of the monitoring of the EMMP and the entity responsible for deciding on the performance indicators and objectives are also applicable to this Annex.

1. The Environmental Management and Monitoring Plan prepared under these regulations and this annex VII shall be:

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

(a)bis Prepared in accordance with the relevant Regulations, taking into account applicable Guidelines, on the basis of Best Environmental Practice, Best Available Scientific Evidence, and Best Available Information; and

(b) Verified by the report of independent competent persons appointed by the Authority.

2. An Environmental Management and Monitoring Plan shall contain:

(a) A non-technical summary of the main conclusions and information provided to facilitate understanding by members of the Authority and Stakeholders;

(b) A description of the area likely to be affected by the proposed activities;

(c) The environmental objectives based on baseline environmental data and standards to be met;

(d) Details of the Environmental Management System and the applicant's environmental policy;

(e) An assessment of the potential Environmental Effects of the proposed activities on the Marine Environment, and any significant changes likely to result;

(f) An assessment of the significance of the potential Environmental Effects, and proposed mitigation measures and management control procedures and responses to minimize the harm from Environmental Effects consistent with the environmental impact assessment and the Environmental Impact Statement;

(g) A description of the planned monitoring programme and the overall approach, standards, protocols, methodologies, procedures and performance assessment of the Environmental Management and Monitoring

Plan, including the necessary risk assessment and management techniques, including adaptive management techniques (process, procedure, response), if appropriate, needed to achieve the desired outcomes;

(h) Details of the proposed monitoring stations across the project area, including the frequency of monitoring and data collection, the spatial and temporal arrangements for such monitoring and the justification for such arrangements;

(i) The location and planned monitoring and management of preservation reference zones and impact reference zones, or other spatial management planning tools;

(i)bis The location and boundaries of planned or established long-term protected areas as determined in the applicable Regional Environment Management Plan;

(j) A description of relevant environmental performance Standards and indicators (trigger and threshold points), including decision rules based on the results of the monitoring of these indicators;

(k) A description of a system for ensuring that the plan shall adhere to Good Industry Practice, Best Available Techniques and Best Available Scientific Evidence, and a description of how such practices are reflected in the proposed Exploitation activities;

(l) Details of the quality control and management standards, including the frequency of the review of the performance of the Environmental Management and Monitoring Plan;

(m) A description of the technology to be deployed, in accordance with Good Industry Practice and Best Available Techniques;

(n) Details of the training programme for all persons engaged or to be engaged in activities in the project area;

(o) Details of Mining Discharges, including a waste assessment and prevention audit;

(p) Details of ongoing consultation with other users of the Marine Environment;

(q) Details of any practicable restoration of the project area;

(r) A plan for further research and studies; and

(s) Details of reporting requirements and timing.



## **I - Members**

### **Costa Rica**

Annex IV – Environmental Management and Monitoring Plan, Part IV - ISBA/27/C/IWG/ENV/CRP.1

Environmental Management and Monitoring Plan.

1. The Environmental Management and Monitoring Plan prepared under these regulations and this annex VII shall be:
  - ...
  - (a) bis Prepared in accordance with the relevant Regulations and Regional Environmental Management Plan, taking into account applicable Guidelines, on the basis of Best Environmental Practice, Best Available Scientific Evidence, and Best Available Information; and
    - ...
  - 2. An Environmental Management and Monitoring Plan shall contain:
    - ...
    - (c) The environmental objectives, indicators and thresholds, based on baseline environmental data and standards to be met;
      - ....
      - (r) A plan for further research and studies;
        - (r) bis Detail of the process and measures to be taken in case of non - compliance with the Environmental Monitoring and Management Plan.
      - (s) Details of reporting requirements and timing

### **Rationale**

1- REMPS Must also guide the Development of the Environmental Management Plan.

2- Indicators and thresholds must be well determined.

3- There should be established measures to address non-compliance, including a reporting process

### **Finland**

2. (h) Details of the proposed monitoring stations across the project area, including the frequency of monitoring and data collection, the spatial and temporal arrangements for such monitoring and the justification for such arrangements, including how in situ validation of modelled results will be carried out;

### **Rationale**

As it is expected that monitoring data will, in addition to provide site specific trends, also feed into modelling approaches that interpolate the results spatially, there's also need to secure monitoring data that can be used for in situ validation of such models.

## **II - Observers to the International Seabed Authority as referred to in rule 82 of the Rules of Procedure of the Assembly**

### **United States of America**

2. An Environmental Management and Monitoring Plan shall contain:
  - (a) A non-technical summary of the main conclusions and information provided to facilitate understanding by members of the Authority and Stakeholders;
  - (b) A description of the area likely to be affected by the proposed activities;
  - (c) A description of the environmental baseline data, including measured baseline values for parameters at the site, a characterization of the area proposed to be mined, adjacent areas that could be affected by mining, rare and endangered species present, and areas that will be avoided due to their environmental value.
  - (d) The environmental objectives based on baseline environmental data and standards to be met;

### **Rationale**

A description of environmental baseline data is needed to properly assess any potential environmental effects and will be critical to assess any significant change as a result of mining activities. While this material will be covered in the EIA and EIS, we consider that it is worth restating a description of the baseline data in the EMMP for easy reference as well to provide context for the environmental objectives.

### **The Pew Charitable Trusts**

1. The Environmental Management and Monitoring Plan prepared under these regulations and this annex VII shall be:
  - (a) Prepared in plain-clear language and in an official language of the Authority, together with, where applicable, an official English-language version; and
  - (a)bis Prepared in accordance with the relevant Regulations and Standards, and Regional Environmental Management Plan, taking into account applicable Guidelines, on the basis of Best Environmental Practice, Best Available Scientific Evidence, and Best Available Information; and
  - (b) Verified by the report of independent competent persons appointed by the Authority.

2. An Environmental Management and Monitoring Plan shall contain:

- (a) A non-technical summary of the main conclusions and information provided to facilitate understanding by members of the Authority and Stakeholders;

(b) A description of the project and the area likely to be affected by the proposed activities, the Preservation Reference Zones, and the surrounding area with reference to the Regional Environmental Management Plan;

(b) bis A description of relevant legal and administrative frameworks applicable to the proposed Plan of Work, including: the rules, regulations and procedures of the Authority; the applicant's own environmental policy, regulations of the Sponsoring State, and other relevant policy or legal instruments to which the applicant may be subject (e.g. environmental or sustainability requirements from funders);

(b) ter A description as to how the Environmental Management and Monitoring Plan has been prepared, and a list of Stakeholders;

- (c) The project-specific environmental objectives, indicators and thresholds, based on baseline environmental data and relevant Standards to be met;
- (d) Details of, or cross-references to, the Environmental Management System including allocation of roles and responsibilities [and the training programme] for and the applicant's environmental policy;
- implementing the measures reflected in the EMMP,
  - monitoring, recording and reporting fulfilment of the EMMP, and
  - regularly reviewing and updating the EMMP to ensure that it complies with rules, regulations, and procedures of the Authority;
- (e) An assessment of the predicted potential Environmental Effects of the proposed activities on the Marine Environment, including how long they will last, and any significant changes likely to result, consistent with the environmental impact assessment and the Environmental Impact Statement;

(e) bis A description of uncertainties identified from the environmental impact assessment and the plan to reduce or manage these;

(g) A description of the planned monitoring programme and the overall approach, standards, protocols, methodologies, procedures and performance assessment of the Environmental Management and Monitoring Plan, including the necessary risk assessment and management techniques, including the use of monitoring data to validate predictive models and reduce uncertainties, and adaptive management techniques (process, procedure, response), if appropriate, needed to achieve the desired outcomes. Each component should be described separately in a manner consistent with sections 7-10 of Annex IV. This section should also include monitoring targets and actions that will contribute to an understanding of regional and cumulative effects and inform the Authority's Regional Environmental Management Plan.

(h) Details of the proposed monitoring stations across and beyond the project Contract Area, including the frequency of monitoring and data collection, the spatial and temporal arrangements for such monitoring and

the justification for such arrangements;

(i)ter Details of any plans outside of the Contract Area to increase scientific knowledge in the relevant region, including in collaboration with other contractors or via international cooperation efforts;

(l) Details of the quality control and management standards, and how the effectiveness of management measures will be monitored, assessed and reviewed, including list of reporting deliverables to the Authority and time schedule, plans for real-time reporting of environmental data to the Authority, internal and external auditing and reporting of environmental performance, and the frequency of the review of the performance of the Environmental Management and Monitoring Plan for the purposes of Regulation 51;

(p) bis. Details of arrangements made or planned with other marine users, with the aim to ensure due regard to each other's rights and activities.

(q) Details of any practicable restoration and rehabilitation of the project area;

(r) A plan for further research and studies; ~~and~~

~~(r) bis~~ A description of the measures that will be taken to address non-compliance with the Environmental Monitoring and Management Plan, including reporting, recording and response action protocols;

(r) ter A description of the document control system that will be used for environmental management documentation; and

### **Annex Xter: Design Criteria For Impact Reference Zones And Preservation Reference Zones**

Contractors must establish impact reference zones (IRZs) and preservation reference zones (PRZs) in order to monitor the environmental impacts of their activities. The following parameters shall be followed in the designation of IRZs and PRZs.

1. IRZs and PRZs must be situated within the Contract Area (and the Contract Area may need to be selected around the need for appropriate IRZ/PRZs, especially where multiple or large zones are required).
2. IRZs must be sites where direct impacts from mining are likely to occur.
3. For each type of impact identified in the environmental impact statement, there must be at least one corresponding IRZ which will enable the Contractor to monitor that impact. This is likely to require multiple IRZs (or a very large IRZ).
4. PRZs will be important in identifying natural variations in environmental conditions against which impacts will be assessed. Their species composition, habitat types, and occurrence of mineral resource, must be comparable to that of the impacted areas.
5. PRZs must be areas that will not be impacted by mining activities, including impacts from operational and discharge plumes.
6. If a Contract Area consists of several disjunct sub-areas that are isolated from each other, then each of those areas would require a corresponding PRZ.
7. Use of multiple PRZs should be considered for increase in statistical rigour, and

chance of detecting effects and adding redundancy in case of unexpected variation/plan changes.

8. The area of the PRZ needs to be sufficiently large to contain (and buffer) sufficiently large populations to guarantee long-term survival.
9. In theory, all species within the IRZ and PRZ will need to be monitored to quantify impacts. In practice, some representative set might suffice. To establish an adequate baseline and find suitable indicator species (e.g. the sensitive species that will suffer most from an impact) it will be necessary to catalogue most species in the IRZ and PRZ in question. This will require an extensive sampling effort to collect sample sizes that allow for a meaningful comparison (i.e., with high statistical power)
10. The longevity of PRZs is important. The duration of post-mining monitoring should until no measurable difference between IRZ and PRZ can be detected anymore.
11. Isolation of PRZs is important: any PRZ will by definition have to remain unimpacted throughout the post-mining monitoring period.
12. To designate representative IRZs/PRZs requires characterisation of pelagic and benthic communities within all sub-habitats that may be impacted by mining operations, and determination of regional distributions and patterns of connectivity. Temporal variation must also be evaluated annually over multiple years (for at least one test-mining site, and the PRZ site).
13. A Contractor will need to be able to demonstrate knowledge of species' ecological requirements (e.g. for successful reproduction); an average population density alone will not suffice.

### Rationale

On para 1(a) we propose the addition of 'Standards' and 'Regional Environmental Management Plan' after 'Regulations' in listing the instruments that the Contractor must use in order to prepare the EMMP.

On para 1 (b), we note the reference to independent competent persons. The same term is used in various places in the Regulations. Pew recalls, we hope correctly, that Jamaica made a submission previous to this session, that there could be provisions added to the Regulations - a new Annex perhaps - that would more precisely set out a process for identification and selection of competent independent experts. We would support that proposal in the interests of ensuring accountability and transparency about use of experts. It should also help ensure that there is collective understanding about the meaning and process behind the use of 'independent competent persons' each time this phrase appears in the regulations.

On proposals regarding 2 (b) (b bis) and (b ter): Pew would recommend that not only should the EMMP describe the area 'likely to be affected', but also the surrounding area (with reference to the Regional Environmental Management Plan) as well as the Preservation Reference Zones (which by definition should not be 'area likely to be affected').

An EMMP should also, for context, at the outset contain a description of the proposed activities that are the subject of the EMMP. This seems to have been omitted in this

Annex. But could be added into sub-paragraph (b) also.

We would also consider it usual practice for an EMMP to include a description of the relevant legal framework applicable to the proposed Plan of Work; as well as a description as to how the EMMP has been prepared, including a list of stakeholders consulted.

With regards sub-paragraph (c), we consider use of the term 'environmental objectives' here to be confusing. We presume this means project-specific environmental objectives, rather than the ISA's strategic environmental objectives, and suggest this be specified in the Regulation. We also think that the word 'standards' should be capitalised here, so it is clear that this means to refer to ISA Standards.

Edit on para2 (h): 'Project area' is not a defined term in the regulations.

Proposal on 2 (i)ter: Contractors should be key players in collecting essential survey data to contribute to large-scale regional assessments and to assist ISA's governance of activities in the Area. But this is only likely to happen if the ISA incentivises or requires scientific work outside of Contract Areas, and takes leadership in directing that research.

Edits on para 2 (l) - To ensure the ISA is receiving appropriate monitoring information, and that the Contractor is regularly auditing its environmental systems.

#### **New Annex on Impact Reference Zones and Preservation Reference Zones**

Impact Reference Zones (IRZ) and Preservation Reference Zones (PRZ) should be designated during the exploration phase, as they will be needed to assess the impacts of test mining under an exploration contract. As such, rules for the design of these zones may be better placed in another instrument that pertains more specifically to Exploration Contractors. But in the current absence of such a document, we do have some provisional ideas for parameters for their design which we might provisionally incorporate as additional annex to these draft regulations pending the opportunity to find them a better home. There is an urgency to elaborate this aspect of the regime, as Contractors should be taking these design decisions now during testing, but at present confusion continues to persist over what the terminology means and what their designation entails.

## Annex VIII

### Closure Plan

1. The Closure Plan shall be prepared and implemented in accordance with the Guidelines and the relevant regional environmental management plan and shall include the following information:

(a) A description of the closure objectives and how these relate to the mining activity and its environmental and social setting;

(b) The period during which the plan will be required, which shall be determined by reference to a specified duration, achievement of a specified event or target indicator or compliance with specified terms agreed with the Authority;

(c) A plan with coordinates showing the area(s) subject to the closure objectives;

(d) A summary of the relevant regulatory requirements, including conditions previously documented;

(e) Details of the closure implementation and timetable, including descriptions of the arrangements for the temporary suspension of mining activities or for permanent closure decommissioning arrangements for vessels, Installations, plant and removal of all equipment (where applicable);

(f) Data and information relating to baseline conditions for monitoring measures;

(g) An updated environmental impact assessment for the activities that will be undertaken during closure, if any, together with details of the identifiable residual Environmental Effects, including any relevant technical documents or reports;

(h) Details of monitoring to be undertaken during and after closure that specify the sampling design (spatial and temporal sampling), the methods to be used and the duration of the post-closure activities;

(i) Details of the management measures to Mitigate the residual Environmental Effects;

(j) Details of any the restoration and remediation objectives and activities, where applicable; -

(k) Information on reporting and management of data and information post-closure;

(l) Details of the persons or entity (subcontractor, consultant(s)) that will carry out the monitoring and management measures under the Closure Plan, including their qualification(s) and experience, together with details of the budget, project management plan and the protocols for reporting to the Authority under the Closure Plan;

(m) Details of the amount of the Environmental Performance Guarantee provided under these regulations;

(n) Details of any compensatory measures agreed or proposed to achieve the agreed closure objectives; and

(o) Details of consultations with Stakeholders in respect of the plan.

2. The level of detail in the Closure Plan is expected to differ between cases involving a temporary suspension of mining operations and cases involving final mine closure. The content of the Closure Plan is to be commensurate with the nature, extent and duration of activities associated with the level of closure and maturity of the project.

**Explanation / comment**

- The proposals reflected in paragraph 1(e), (j) and (n) may require explanations from their proponents and further discussion.

**I - Members**

**Costa Rica**

Closure Plan 1

The Closure Plan shall be prepared and implemented in accordance with the Standards and taking into account the relevant Guidelines and the relevant regional environmental management plan and shall include the following information: (

**Rationale**

1- There should be standards decided by the authority , applicable to all closure plans, which should be mandatory.

**II - Observers to the International Seabed Authority as referred to in rule 82 of the Rules of Procedure of the Assembly**

**United States of America**

1. (e) Details of the closure implementation and timetable, including descriptions of the arrangements for the temporary suspension of mining activities or for permanent closure decommissioning arrangements for vessels, Installations, plant and removal of ~~all~~ any equipment (where applicable);

**Rationale**

In 1.(e), there may be cases where leaving installations and/or equipment at the mine site may be better environmental management than removing all infrastructure.

**The Pew Charitable Trusts**

1. The Closure Plan shall be prepared and implemented in accordance with the Standard, taking account of the relevant Guidelines and the relevant regional environmental management plan and shall include the following information:

(j) bis Details of any anticipated residual impacts that will remain even after Mitigation measures.

(k) Information on reporting and management of data and information post-



closure, including information on how data will be archived and made available post-closure

### Rationale

On para 1, we would agree with the several delegations who have suggested that the Closure Plan should be implemented in accordance with a binding Standard.

We would also like to propose a new subparas jbis - to include details of any residual impacts that will remain after mitigation measures have been implemented,

And finally a requirement to be included in subpara k to include information on how data will be archived and made available post closure.