



**Template for the review of the draft standards and guidelines  
associated with the draft regulations on exploitation of mineral resources in the Area**

**TEMPLATE FOR COMMENTS**

<i>Document reviewed</i>	
<b>Title of the draft being reviewed:</b>	Draft Guidelines for the preparation of an environmental impact statement
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<i>General Comments</i>	
<b>Draft Regulations EIS Template vs EIS Guideline</b>	
<p>We appreciate that the Guideline helps to identify additional resources that can be used by a Contractor to develop their Environmental Impact Statement (EIS) and directs them to the Regulations, Standards, REMP, and other Guidelines that need to be considered in order to ensure the EIS contains the necessary information.</p> <p>With that being said, we do find it confusing that much of this information is covered in Annex IV of the draft regulations. Because of the striking similarity in content between the two documents, it is difficult to understand what is required in the EIS vs. what is recommended in the Guideline.</p> <p>We believe it would be helpful to first finalize the EIS template in the Annex before any recommendations or supporting material is developed that is intended to help meet currently undefined requirements. Additionally, Annex IV of the draft Regulations specifies that the template is a recommendation. By making this template binding, there will be a clearer understanding amongst the Authority, Contractors, and Stakeholders of what must be included in the EIS. Additionally, by making the EIS structure consistent across Contractors it will make it easier for the Authority and Stakeholders to review the document during consultation periods. We understand that there may be some concern about making the template format a requirement in the regulation, as it would be difficult to amend after the regulations are adopted. If this is the concern, the template could be moved to a Standard, which would also be binding and presumably easier to amend.</p> <p>It would also be helpful to make a clear distinction that the EIA is a process, and the EIS is the</p>	

resultant documentation. Contractors are not going to annex an EIA and an EIS to their plan of work - only the EIS (and scoping report as an appendix to the EIS), which is the physical manifestation of the EIA process.

### **Binding Language used in Guideline**

We found the occasional use of obligatory language in the Guidelines to be confusing, as the Guidelines are intended to be a non-binding document. In our amendments we have not sought to remedy this problem as we believe a bulk of the information in this document, as stated in our previous comment, should be a requirement.

### **Stakeholder Consultation and Scoping**

The draft Regulations lack requirements relating to public review and stakeholder comments, in the EIA process. We propose that the scoping report be open for stakeholder consultation through the Authority’s website., recalling that States, with Agenda 2030 for Sustainable Development, have committed to “ensure responsive, inclusive, participatory and representative decision-making” at all levels and that the right to information and participation, declarations addressing environmental decision-making in particular, are internationally protected rights.

Consultation mechanisms are important because they lead to better decisions and higher public confidence. The ISA should therefore take a lead not only in conducting its own consultations, but also in requiring best practice from its contractors. Such detail (and more) could be included in a Standard, rather than the Regulations. While we appreciate that Stages of the Scoping process have been provided in greater detail in the Environmental Impact Assessment Guideline, we think that there should be more guidance for Step 3 (Scoping Consultation) regarding what constitutes as sufficient consultation. We recommend that Contractors be required to submit a draft scoping report to the Authority to be published for a 60-day comment period. Following the comment period, the Commission could look at the report and comments and provide recommendations to the Contractor, which will enable them an opportunity to make any necessary revisions prior to submitting their Plan of Work and instill greater confidence that their submission will be considered complete by the Commission.

The inclusion of greater stakeholder review will also help to establish the development of the EIA/EIS/EMMP as an iterative process that evolves through stakeholder consultation.

We have made edits to the EIS guideline and EIA Standard and Guideline (S&G) to address these issues.

### **Access to Essential Documents for Reviewing an EIS**

This document regularly refers to information that appears in the Plan of Work. Our understanding is that the EIS is likely to be a public document, while the Plan of Work was likely to be confidential. This leads to a strong concern about transparency in the EIS. If the EIS relies on the Plan of Work, it may make the EIS very difficult to review by stakeholders, such as not having enough information about the project information. The project/mining plan of the EIS should contain sufficient detail (even if it repeats elements of the Plan of Work) for independent assessment to be made without seeing the Plan of Work. This is a typical

approach in other industries.

Additionally, as the EIS will only be as good as the data it is based on, there should be a requirement for all baseline data to be submitted to the Authority prior to the submission of the EIS, possibly during the EIA scoping process. This should be uploaded to DeepData and should include coding used to analyze the data and independent reviews associated with any predictive models used.

### **Impact vs. Effect**

Where definitions are available in EIA guidance, the general consensus is that impacts are defined as the changes resulting from an action, and effects are defined as the consequences of impacts. This is reflected in the terminology section (with proposed amendments) and we have amended the text accordingly.

### **Analysis of Alternative Operations Considered**

An EIA should include a robust alternatives analysis that “present[s] the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public.” Identification and assessment of alternatives should be a fundamental requirement of any EIA, to enable the regulator to determine whether the least harmful approach for the environment and human health (see reference below) has been identified. This is a standard practice in many international EIA systems (see textbook reference below). An important part of the EIA will be assessing the Environmental Effects of these alternative operations. Justifications for not choosing these alternative approaches and differences from proposed mining operations should be clearly described in the EIS to allow stakeholders and members of the Authority to be able discern the financial and environmental cost/benefits of each approach. We have proposed edits to the EIS and EIA S&G to make it clear that a robust alternative analysis is an essential requirement of a EIA/EIS.

### **Impact Area**

The current draft regulation no longer includes the term “impact area”, but rather we are left with the terms “mining area” and “contract area”. From scientific literature, it is still unclear whether the impact area will stay within the bounds of the contract area, due to the dispersal of sediment through collector and dewatering plumes and distance traveled by light and noise. It would be helpful for the EIS to address the predicted impact area (defined horizontally and vertically) and incorporate discharge information into site- and region-specific circulation models to calculate the predicted impact area. It is possible that the impact area would be within boundaries of the contract area, or the regulations would require impacts be localized to the contact area, but until that is determined it is critical that the regulations (or Standard, if it is determined this content is more appropriate there) require Contractors to collect baseline information, provide an environmental risk and impact assessment, and develop an environmental monitoring and management plan for the impact area, regardless of whether that is inside or outside the “contract area”. We have added the term ‘Impact Area’ to the terminology section below, as previously included in the 2017 version of the draft Exploitation Regulation and have made amendments to the text accordingly.

### **Addressing Uncertainty**

The uncertainty in predictions has the potential to radically change the conclusions of the EIS (for example in comparisons between options, risk assessment etc.). At present there is little treatment of this. Identifying, and taking steps to resolve uncertainties should be an essential feature of an EIA for deep-sea mining in the Area. We therefore propose a standalone section (2.1.6bis) focused on this important aspect.

As well as a specific section on the uncertainty, the EIS should include a clear and explicit treatment of uncertainty in each relevant section, with an attempt made to quantify the magnitude of uncertainty. This should split the uncertainty by source, for example measurement error, environmental variation (in space and time), model variation, environmental change (e.g. climate change), uncertainty in the extent and sources of impacts etc. etc. A clear assessment of the consequences of the uncertainty on the predictions, potential outcomes and decision making should be made for each relevant section. The approach used in the IPCC reports provides a good example of how this could be done.

### **Physiochemical and Biological Characteristics**

Several essential physicochemical and biological characteristics were left out of the necessary components that should be described as part of the baseline assessment. If the intent of this template is to provide enough detail for Contractors to carry out the various components of the Plan of Work then we believe 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 more clear and these sections may be sufficient or may even be pared down, with more detailed information covered in the Standards for Baseline data collection and EIAs.

Additionally, we have proposed amendments to reflect that the depth range used for biological baseline descriptions may vary from region-to-region and should be based on the baseline data collection Standard and relevant REMP. Additionally, limiting the description of fauna to three depth ranges may be insufficient to capture the vertical spatial variability in the water column.

#### *Specific Comments*

<b>Page</b>	<b>Line</b>	<b>Comment</b>
1	28	<p>Replace: “prior environmental risk assessment and” with “Scoping Report”</p> <p>Scoping’ is an essential precursor to an EIA, in which the adequacy of a planned EIA and baseline datasets can be assessed before an expensive EIA is undertaken. It is important as, beyond including an environmental risk assessment, it also 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. We are appreciative that scoping has been included in the EIA S&amp;Gs, but it should be restated here. Submission of the report and review by Stakeholders and the Commission should also be made a requirement.</p>

		<p>Additionally, we would like to note that in other industries two risk environmental risk assessments (ERA) are carried out:</p> <p>1) at the scoping phase to highlight the general risks of a project of this type to the environment and to identify specific focus areas for the rest of the EIA,</p> <p>2) in the main EIA to assess the risk of the specific project options and re-assess in the light of planned mitigation strategies (or options).</p> <p>Seems as though there is some confusion about these two ERAs in both the EIS Guideline and EIA S&amp;G. We believe it would be helpful to make that point clearer, so contractors expect to carry out two ERAs as a part of the entire EIA process.</p>
1	32	<p>Add: “, findings” after “the objectives,”</p> <p>REMP should identify focus areas, regional risks etc as well as objectives and measures.</p>
1	35	<p>Add: “Standards,” after “with the applicable”</p>
1	58	<p>Add additional bullets:  “Environmental Quality Objectives; and  Types and degrees of Environmental Effects deemed acceptable for purposes of DR 13(4)(e).”</p> <p>Environmental Quality Objectives is currently listed as an Environmental Standard in 45 and would be essential for gauging impacts and effects of mining operations. Additionally, DR13(4)(e) covers the point at which the LTC decides whether or not to recommend the approval of a Plan of Work for Exploitation from an environmental point of view. The LTC must ask whether the environmental impacts likely to result from the mining (as forecast in the EIS) are judged to be acceptable. It would seem important for the Regulations (or Standards) to provide guidance as to the relevant factors, data, thresholds and values to guide the LTC in making this determination.</p>
2	67.	<p>Replace paragraph 6 with (changes in red): “The applicable Regional Environmental Management Plan (REMP) should also be read in conjunction by the applicant or Contractor in the EIA process and any region-specific methods for collecting baseline data, environmental objectives, indicators, and thresholds and management approaches”</p> <p>The REMP needs to directly influence the EIA/EIS/EMMP thus we propose deleting consideration. Additionally, the REMP goes beyond management and mitigation methodologies, defining the region specific env obj. indicators and thresholds as well.</p>
2	74	<p>Add:  6bis. Environmental Effect means any consequences in the Marine Environment for and for natural anthropogenic receptors arising from environmental impacts caused by the conduct of Exploitation activities, whether positive, negative, direct, indirect, temporary or permanent, or</p>

		<p>cumulative effect (whether arising over time or in combination with other mining impacts, or impacts caused by other sources).</p> <p>6ter. Environmental Impact means changes (physical and or chemical) to the environment resulting from the conduct of Exploitation activities.</p> <p>We propose some edits to the Environmental Effect listed in draft regulations Schedule section and have added the term Environmental Impact. We propose adding both here to eliminate any confusion about these terms. See general comment on “impact vs effect”.</p>
2	82	Add: “identifying the severity of” before “residual”
2	87	<p>Add to list of terminology:  “9bis. Impact Area means that area of the Marine Environment where Environmental Effects occur or are likely to occur as a result of Exploitation activities in a Mining Area”</p> <p>See general comments regarding “impact area”</p>
2	93-105	<p>As stated in the general comments, this template is nearly identical to the EIS template in Annex IV of the draft regulations. In the draft regulation and in the Guideline, it says the template is a suggestion/recommended format, but we believe the template should be a requirement. If there is concern about not being able to amend the template in the future, then the template could be moved to an EIS standard, which would be binding.</p> <p>Numerous regulatory agencies provide templates for submissions <b>that must be followed or used</b> in order for a submission to be accepted by the regulatory authority. This allows the regulator to determine (at a high level, at least) whether submissions are relevant or not, as those that have not been completed according to the template are usually not accepted. In cases where a template is prescribed, most regulatory agencies provide proponents with access to guidance from regulatory staff, to fill out a template submission appropriately. As such the purpose of this guideline should be to provide guidance on how to fill out the template, rather than just re-stating it.</p> <p>see also general comment above - “Draft Regulations EIS Template vs EIS Guideline”</p>
2	103	<p>delete: “and project” and replace with “and region”</p> <p>Thresholds should be region- and resource-specific but not project-specific. This is still a point of discussion at the ISA, so this should be agreed upon and reflected in the draft regulations before being explained in the Guidelines.</p>
3	Table	Add additional sections:

		<p>Methodology for description of the Marine Environment and Assessment of Environmental Impacts and Effects -2.1.4bis</p> <p>Assessment of Uncertainty - 2.1.6bis -- see general comment “Addressing Uncertainty”</p> <p>Replace “Assessment of impact” with “Assessment of Environmental Impacts and effects” for 2.1.6 section titles</p>
3	118	Add: “, including expected recovery rates of the system to its original state” at the end
3	120	Add: “and a description of any residual impacts that may occur despite mitigation”
4	140	Add another bullet:” any residual impact that may occur despite mitigation.”
4	147	Regarding “contained in the Plan of work relevant to the context and findings of the EIA” - There is an issue of transparency here. It was our understanding that the EIS was likely to be a public document, while the Plan of Work was likely to be confidential. If the introduction (and other sections) relies on the Plan of Work, it may make the EIS very difficult to review by stakeholders. It could also allow the contractors to hide significant project information that is directly relevant to the assessment. - See also general comments - “Access to Essential Documents for Reviewing an EIS”
4	158	After EIA, Add: “and previously included in the scoping report”. Highlights of the scoping report process and conclusions should be presented in the background
4	161	Regarding “highlights from the previous activities”
		Previous activities that are referred to in the EIS should be made publicly available for review alongside the EIS review. This includes detailed reports e.g. on specific aspects of the environment. The data from reports referred to should be incorporated into ISA Deep Data as an obligation.
4	167	Add: “to mankind” after “benefits” This is in the draft regulations EIS template, but has been omitted in the guidelines.
5	181-183	Add “test mining” - Test mining, in addition to component testing, should be included
5	193	Regarding “major shareholders” - Several of the more commercial contractors have a complex network of linked companies, multiple of which may hold different licenses. We suspect that this will be sufficiently known and may be reported but listing major shareholders would not be sufficient to reveal these linkages.

5	211-219	The scoping report is not referenced at all in this section, although some components of the scoping report are (e.g. environmental risk assessment). This should be referenced as it is a mandatory part of the EIA and EIS. Additionally, the scoping report should be attached in an appendix to the EIS.
6	257	Propose adding “- Convention on Biological Diversity - 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter” to the list
6	258	Add new paragraph “28bis. The Contractor shall also describe any national processes followed and permits received from the sponsoring State in relation to the environmental impact assessment” - listing national obligations is a critical part of the EIA/EIS
6	259	This section is considerably less descriptive than the EIS template in the Annex IV of the draft regulations. It is unclear to us why this is. We have proposed text to include in this section in the rows below through line 328
6	270	Add at the end “including the locations of impact reference zones and preservation reference zones, Areas of Particular Environmental Interest 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 any adjacent ISA contract sites and activities.
6	271	Add another bullet: “the supporting activities and infrastructure required (e.g., transportation corridors, ports of disembarkation for vessels, and unloading of ore) that are outside the direct mining site”
6	271	add “type (e.g., seafloor massive sulphides, polymetallic nodules, ferromanganese crusts),” before “size”
6	272	Add “(horizontal and vertical) after “spatial” & Add “(seasonal and annual)” after temporal
6	274-275	Replace bullet with (changes in red)- “Volumes, physical and chemical properties of material to be recovered, processed, and deposited and/or discharged into the water column or back to the seabed and a target depth range if any material will be discharged into the water column”
7	276	Replace: “Depth” with “an account of the area to be mined within the

		Contract Area, including the depth”
7	278	Replace bullet with (changes in red) “The likely extent of any secondary impacts such as sediment resettlement on the seabed or sediment dispersal in the water column from the collector and dewatering plume, noise, and light”
7	282	Add at the end “, 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.”
7	287	Replace “construction and operations standards” with “Construction operation standards, and energy requirements”
7	316	Add at the end ““The Contractor may also wish to refer to their required Mining Workplan.”
8	327-328	add new paragraph “33bis. Descriptions of alternative mining operations shall include the selection of the mine site, mine production scenarios, equipment design and engineering decision, transport, materials handling and shipboard processing and any alternatives considered for the mitigation of impacts.”  And in paragraph 34 delete “brief” before “description  See general comments regarding “Analysis of Alternative Operations Considered”
8	333	There is currently little to no requirements or guidance on the methodology that the Contractors should include in their EIA/EIS. Below is methodology section that should be a requirement of a “complete” EIS.  <b>4bis. Methodology for Description of the Marine Environment and Assessment of Impacts and Environmental Effects</b>  <i>Studies Completed:</i> 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.  <i>Methodology for Collecting Baseline Data:</i> For the physiochemical, biological, and socioeconomic environment description in section 2.1.5 of this Guideline, describe the methodology for collecting baseline data, including:

	<ul style="list-style-type: none"> <li>● spatial and temporal extent of sampling;</li> <li>● spatial and temporal frequency of sampling;</li> <li>● gear used for sampling and any modifications or calibrations conducted to the gear;</li> <li>● results of power analysis;</li> <li>● limitations of sampling and how this may impact certainty of impact assessments; and</li> <li>● Any cooperation with other research programmes in the Area, such as with the ISA, States, other contractors, or non-governmental organizations.</li> </ul> <p>In this description, highlight any deviations from baseline data collection requirements provided in relevant Standards and Guidelines, and the regional environmental management plan.</p> <p>Raw baseline data and computer code used to analyze and provide a description of the Marine Environment shall be included in the appendices 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.</p> <p><i>Methodology for Summarizing Baseline Data:</i> Provide a description of the methodology used to summarize baseline data collected. This shall include:</p> <ul style="list-style-type: none"> <li>● a description and justification of transformations performed to the data and analyses used to summarize the data;</li> <li>● a list of programme(s) used to analyze results; and,</li> <li>● Any limitations associated with the results of the analysis.</li> </ul> <p><i>Methodology for Assessments of potential environmental impacts and Environmental Effects to the Marine Environment</i></p> <p>For each assessment of potential environmental impacts and Environmental Effects in section 6 of this Guideline, describe the methodology used to assess impacts and Environmental Effects from proposed operations and alternative operations considered in section 2.1.4 (#33 and 33bis). Data, predictive models, and computer code used to analyze 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. Each description of methodology used to assess impacts shall include:</p> <ul style="list-style-type: none"> <li>● a description and justification of analyses and models used to summarize the data; and</li> </ul>
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		<ul style="list-style-type: none"> <li>Any limitations associated with the analysis or results.</li> </ul> <p>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.</p>
8	348	<p>Add “and Impact Area” after “Contract Area”</p> <p>See general comments regarding “Impact Area”</p>
8	348-350	<p>Replace “These descriptions should be based on the both primary data from baselines studies complete in the proposed Contract Area” with “These descriptions should be based on both primary data from baseline studies completed in accordance with Regulation 45 and 47, relevant Standards, and regional environmental management plans, taking account of Guidelines in the proposed Contract Area and Impact Area”</p> <p>Added reference to Regulations, S&amp;G and REMP to ensure that it is clear that baseline studies will be based on the requirements listed in those binding documents. Additionally, we propose adding “impact area”, as it is still unclear, and unexpected, that impacts will stay within the bounds of the contract area. - See general comments regarding “Impact Area”</p>
8	355	<p>Add “and Impact Area” after “Contract Area”</p> <p>See general comments regarding “Impact Area”</p>
9	370	<p>With the addition of the methodology section proposed above, we recommend deleting “Studies completed (including environmental reference baseline data collected in accordance with the exploration contract and contained in the DeepData database)”</p>
9	385-403	<p>Numerous physicochemical components have been left out of this section. Below is a modified list with additional bullets (edits is red)</p> <ul style="list-style-type: none"> <li>Meteorology and air quality (overview of climatology and description of air quality, including chemical characteristics);</li> <li>Geological setting (general geological landscape and topography, petrographic and geomorphological setting, and nature and extent of the resource);</li> <li>Seabed substrate characteristics (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 characteristics shall be described to a depth below the seafloor prescribed in the relevant Standard or regional environmental management plan</li> </ul>

		<ul style="list-style-type: none"> <li>● Physical oceanographic regional and site-specific setting (general oceanographic aspects including stratification and sediment rates, turbidity, current direction and velocity, oceanographic fronts, eddies, turbulence, boundary-layer processes, particle flux, natural particle concentrations and compositions throughout the water column, waves, and spatial (horizontal and vertical) and temporal (seasonal and interannual) variability of these properties as well as notable characteristics such as hydrothermal vents, seamounts, and canyons). Climate Change projections should also be included;</li> <li>● Chemical oceanographic setting (water mass characteristics throughout the water column at various depths, such as nutrients, particle loads, temperature, oxygen, salinity, density, particulate and dissolved organic matter, pH, 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);</li> <li>● Natural hazards (potential hazards for the region, including seismic activity, volcanic activity, and cyclones, hurricanes, or tsunamis and change in frequency of these events due to Climate Change);</li> <li>● Noise and light, including light intensity, backscatter, and attenuation (ambient levels, and influence of existing maritime, exploration, and exploitation activity in and around the proposed Contract Area, noting spatial (horizontal and vertical) and temporal (seasonal and interannual) variability in these characteristics); and</li> <li>● Greenhouse gas emissions and climate change (gas and chemical emissions from natural and anthropogenic activities in the region and affecting the sea floor and water column chemistry). Effects of mining on ocean climate mitigation functions and services should be described (including any anticipated alteration of CO<sub>2</sub> uptake and sequestration, or nutrient cycling).</li> </ul>
9	408-410	<p>Replace “The Contractor should..., where appropriate)” with “in the Impact Area. The Contractor must structure this section by depth regime from the sea surface to the benthic subsurface layers, in accordance with the relevant Standard and regional environmental management plans”</p> <p>The depth range used for biological baseline descriptions may vary from region-to-region and should be based on the baseline data collection Standard and relevant REMP.</p>
9	412	<p>Add “and Impact Area” after “Contract Area”</p> <p>See general comments regarding “Impact Area”</p>
9-10	416-419	Replace para. 42 with

		<p>“The discussion will address the diversity, abundance, biomass, life history stages and parameters, behavioral information, such as feeding rates of suspension feeders, recruitment, connectivity, trophic relationships, resilience, ecosystem function and services, and spatial and temporal variability of the communities present at each depth regime described in 43bis of section 2.1.5. Any community-level analyses, previous work with ecosystem models and ecosystem indications described in section 2.1.4bis should also be included in this discussion.”</p> <p>Above we have provided additional biologic environmental components that should be addressed and provided references to current and recommended sections listed in the EIS guideline to assist the contractor.</p>
10	421-433	<p>Replace paragraph 43 with</p> <p>“43. The Contractor should provide as comprehensive a list of known species in the Impact Area”</p> <p>“43bis. Descriptions of Biological communities and ecosystem functions must be structured by depth regimes, described in accordance with relevant Standards, and encompassing, as relevant:</p> <ul style="list-style-type: none"> <li>● surface seawater,</li> <li>● epipelagic zone (&lt; 200 metres)</li> <li>● mesopelagic zone (200-1000 metres),</li> <li>● bathypelagic zone (1000 - 4000 metres),</li> <li>● abyssopelagic zone (4000 - 6000 metres),</li> <li>● hadalpelagic zone (&gt; 6000 meters),</li> <li>● Benthic Boundary Layer (100m zone above the seabed/benthic zone), and</li> <li>● benthic zone.</li> </ul> <p>Limiting the description of fauna to three depth ranges may be insufficient to capture the vertical spatial variability in the water column.</p> <p>It would be best for the REMP to prescribe the depth regimes to be described. For now, we have listed the most plausible depth regimes that a REMP would prescribe.</p>
10	442	<p>Comment: Fish base is not a global biodiversity database, propose deleting this</p>
10	444	<p>replace “that include the size of the faunal and the life-history stages of fauna” with “. This should include the size distributions of the fauna and their life history stage”</p>
10	455	<p>Replace “food chain” with “food web”</p>

10	451-476	Few comments: “knowledge of trophic levels” - what aspect of the trophic levels? How many? “specialized predators” - what about other feeding modes?
11	487- 491	Proposed edits to simplify this paragraph Replace “and around the proposed...for preparing an EIS” with “the impact area that might be affected by the proposed project”
11	508	Add “, cultural, paleontological” after “archeological”
12	517	Replace “Assessment of Impacts’ to “Assessment of Environmental Impacts and Effects”  see general comment “Impact vs. Effect”
12	520-521	Replace “the Contractor should provide..., and socioeconomic environment” with “The contractor should provide an assessment of potential environmental impacts and effects of the proposed operation and alternative operations considered in section 2.1.4. to the physiochemical, biological, and socioeconomic environments in the Impact Area.  see general comment “Impact vs. Effect” See general comments regarding “Analysis of Alternative Operations Considered”
12	528	Add “and alternative operations considered” after “proposed project”
12	529	Add “pre-commissioning, operational, and decommissioning stages” after “proposed mining activities”
12	534-536	Replace three bullets with: <ul style="list-style-type: none"> <li>● The source, nature and spatial (horizontal and vertical) and temporal (seasonal and annual) extent of any actual or potential environmental impact and effect and a comparison of these impacts and effects to the relevant environmental objectives, indicators, and threshold values identified in the relevant Standards and Regional Environmental Management Plan;</li> <li>● Measures that will be taken to avoid, remedy or 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;</li> <li>● Any unavoidable (residual) impacts that may remain, including their expected longevity; and</li> <li>● The extent to which any potential impacts and Environmental Effects may occur in areas under a State’s national jurisdiction.</li> </ul> These bullets need to be more descriptive and list potential impacts to areas under a State’s national jurisdiction. Changes are in red.

12	539	Replace “, the length of time of impact from them,” with “in the Area and within a State's national jurisdiction, the length of time of impact from them, if any impact or effect exceed environmental objectives, indicators, or thresholds in the relevant Standards and regional environmental management plan
12	550-558	<p>Replace bullets with:</p> <p>Description of impacts categories and resulting and effects from proposed operation and alternative operations considered in section 2.1.4:</p> <ul style="list-style-type: none"> <li>○ The nature and extent of any actual or potential impact and effect, including indirect and cumulative impacts and effects, and interactions across impacts and effects;</li> <li>○ Measures that will be taken to avoid, remedy, or mitigate such impacts and effects (and that will be addressed in the EMMP);</li> <li>○ Unavoidable (residual) impacts that will remain; and</li> <li>○ any impacts and effects to State national jurisdiction.</li> </ul> <p>Edits for consistency with previous edits made (2 cells up)</p>
13	573-576	Move “seabed substrate characteristics” under “Geological setting” - These should be in the same section or be right after each other
13	600-605	Replace these lines with “environment identified in the relevant depth regimes described in section 2.1.5 and discussion of ecosystem and community level dynamics also described in section 2.1.5”
13	607-608	Add “and effects” after “potential impacts” & add “and alternative operations considered” after “proposed project”
14	614-615	Add “(horizontal and vertical) after “spatial” & Add “(seasonal and annual)” after temporal
14	621-651	This should reference the baseline standards and guidelines and relevant REMP rather than adding a list that may contradict those documents or confuse the contractor as what should depth regimes should be included in the final ERA
15	667	Add “cultural heritage” before the “other’ bullet
15	674	After “socioeconomic impacts” add “from the proposed project and the alternative operations considered”
15	679	<p>Add</p> <p><b>“6bis. Assessment of Uncertainty</b></p> <p>67bis. <i>Uncertainty Assessment</i>: Provide a detailed description and evaluation of any uncertainties in the assessments described in section 2.1.6. This uncertainty assessment shall:</p>

		<ul style="list-style-type: none"> <li>• identify any relevant areas of uncertainty and gaps in knowledge and the implications these have to the environmental impact assessment process and its findings; and,</li> <li>• describe the measures taken in the environmental impact assessment to reduce uncertainty in its findings to as low as reasonably practicable.</li> </ul> <p>67ter. <i>Resolving Significant Uncertainty</i>: 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”</p> <p>See general comment - “Addressing Uncertainty”</p>
15	694	After” could have,” add “in the Area or in a State’s national jurisdiction”
15	701-703	Replace “The EIS should refer users to the EMMP and need include only a brief discussion highlighting key issues that will be addressed in the EMMP, including” with “This section is useful opportunity to highlight some of the key issues from the Statement that will be addressed in the full Environmental Management and Monitoring Plan and provide stakeholders an opportunity to provide comments during the environmental impact assessment consultation, which should be done prior to submitting the application for Plan of Work. This section should include a discussion of”
16	707	<p>Add “indicators, and thresholds” after “Environmental Objectives”</p> <p>In the other S&amp;G and in the draft regulations there is a lot of inconsistent terminology and phrasing. For example, sometimes we see Environmental Objective or Environmental objective and indicator or Environmental Objective and threshold. This should be consistent and should include each term as proposed above.</p>
16	728	Add “journey and” after “the intended”
16	750	Replace “and extent” with “participants and outcomes”
17	762	Comment: The EIS template could include a description of any EIA process performed under the laws of the sponsoring state.
17	763	add “77bis. The Contractor shall provide 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.”
17	793	add

		“81bis. The EIS shall also describe any potential conflicts of interest, and the mechanisms used to manage any such conflicts.”
17	800-801	<p>Comment regarding references “This enables a user of the EIS to independently review the supporting documentation.”</p> <p>In reality this is often not true. References are impossible to obtain or confidential. This is a particular problem when the references are essential to support the findings of the EIA. This is common e.g. for consultancy reports on baseline or monitoring data.</p> <p>Ideally the EIA should be supported by peer-reviewed open access publications and data held within the ISA database DeepData. Otherwise all reports referred to should be made available, potentially through the ISA library or an online portal.</p> <p>See general comment above “Access to Essential Documents for Reviewing an EIS” for more info</p>
18	805	<p>After “exploration contracts” add “copies of stakeholder comments received, and review reports from independent experts for predictive models used”</p> <p>See general comment above “Access to Essential Documents for Reviewing an EIS” for more info</p>
<i>Additional rows can be added to this table by selecting “Table” followed by “insert” and “rows below”</i>		

*Comments should be sent by e-mail to [ola@isa.org.jm](mailto:ola@isa.org.jm)*