Annex IV – EIS Template

Written submission by the African Group [date]

FACILITATORS TEXT Their proposed new text in **bold**, proposed deletions are ~~struck through~~ New text/edits from AG in BLUE	RATIONALE/COMMENTS (if any)
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 taking into account the ~~relevant~~ applicable regional environmental management plan**, corresponding to the scale and potential magnitude of the activities, to assess the likely Environmental Effects of the proposed activities. Such effects shall be discussed in proportion to their significance. Where an applicant **or Contractor** considers an **Environmental** Effect to be of no significance, there should be sufficient information to substantiate such conclusion, or a brief discussion as to why further research is not warranted; and	
c) Include a non-technical summary of the main conclusions and information provided to facilitate understanding of the nature of the activity by Stakeholders.	
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~~ **Techniques** on which the Authority can base its assessment, and any subsequent approval that may be granted. Further detail for each section is provided following the overview. This document is a template only, ~~and is not intended to be prescriptive but rather to guide the format and general content of an Environmental Impact Statement~~ **and** ~~It~~ does not provide details of methodology or thresholds that may be resource- and site-specific. These methodologies and thresholds **should** be developed as Standards and Guidelines to support the regulations.	
Executive Summary	
One of the main objectives of the executive summary is to provide an overview of the project and a summary of the content of the Environmental Impact Statement for non-technical readers. Information provided in the executive summary should include:	
(a) A description of the proposed ~~development~~ **project**, ~~and~~ its objectives; ~~**and a description of alternatives analyzed;**~~	REMOVAL: We suggest that alternatives are separated from the project description. These are separate issues that both deserve elaboration.
(a)bis A description of alternatives analyzed	ADDITION: Alternatives are different to benefits, and should be treated separately.

(b) Anticipated economic, financial and other benefits to be derived from the project;	CLARITY NEEDED: 1) What 'other' forms of benefit expected to be included in the EIA – benefits could be seen as being related to environment, society, capacity building etc. 2) Benefits also have to be 'anticipated' given that market conditions for the project's future production are not yet known.
(c) Anticipated impacts of the activity [**including but not limited to**] (~~physicochemical~~, **oceanographic, geological,** biological, socioeconomic), **including cumulative impacts**;	
(d) Mitigation measures expected to minimise environmental impacts ~~**and a description of any residual impacts;**~~ noting how the mitigation hierarchy is being employed in assessing impacts.	STANDARDISATION: Neither the Facilitator's Text or the EIS Standard currently use typical language when describing the mitigation hierarchy language (avoid, minimise, rehabilitate/restore). Given the number of different phrasings currently being used throughout the regulations, we suggest just using "mitigation hierarchy" (and define this in the schedule). REMOVAL: We suggest separating out the description of residual effects. DEFINITION: Mitigation hierarchy needs defining.
(d)bis A description of any residual impacts	ADDITION: We suggest separating out residual impacts into a separate subparagraph.
(d)ter Expected recovery rate of the marine environment impacted	ADDITION: A key element of any environmental assessment is to consider 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 / transitory impact and those that may last for years or longer.
(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 the Closure Plan; and	COMMENT: there is a big difference between reporting back on how the EIA is helping to form the EMMP, and how the EIA/EIS is in conformity with already existing policies and plans. These two issues have been split out into separate subparagraphs. Also linkages to the Closure plan should be mentioned.
(e)bis conformity with the Authority's global environmental policy and strategy and the applicable regional environmental management plan.	NOTE: the Authority does not currently provide an Environmental Strategy.
(f) Consultation undertaken with other parties **and Stakeholders**.	
1 Introduction	
The purpose of the Introduction section is to set the scene for the EIA. This section should contain enough detail for a reader to form an overall impression of the proposed project and how it has developed, and understand how the EIA is structured. As this section mainly provides a 'roadmap' to more detailed material in the EIA, it may be relatively short.	ADDITION: Paragraph provides context for the section (there should be a contextual paragraph at the start of each section).
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. Provide understanding of the policy on alternatives being followed by the applicant. The determination of project viability may include a summary of	COMMENT: We suggest to include alternatives to be specifically included, so that all EISs contain a thorough understanding of alternatives (including a no mining alternative). Also, we highlight that it is critical for the alternatives policy followed to be specifically included here, so that the EIS

feasibility investigations related to geophysical, engineering, geotechnical, oceanographic, biological and other components of project operations.	contains a transparent understanding of alternatives chosen, accepted and rejected. Adding further detail ensures that the EIS will cover each of the aspects of viability needed.
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, depth zones and any component / systems testing conducted to date. The time, location, and parties involved in exploration work should be included. For the component / systems testing, provide a brief description of activities. If applicable, include any report(s) related to results of component / systems testing including any monitoring and assessment of the environmental impacts as an Appendix.	COMMENT: we feel it is important to include the possibilities for systems testing as well as component testing (dependent on test mining regulation drafting).
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, and the proponent's environmental record for this work and any previous comparable works should be summarised as well as how they intend to support commitments made elsewhere in the application.	ADDITION: This addition ensures that the proponent's historical environmental record is included in the information available to stakeholders.
1.5 This report	
This section should constitute a guide for users of the EIS on how to effectively use the information contained in the EIS.	ADDITION: An introductory paragraph is needed for section 1.5.
1.5.1 Scope Provide detail as to what is and is not included, ~~based on earlier assessments or work~~ and which risks have been prioritised and which received less emphasis, in this Environmental Impact Statement, based on the Scoping Report and previous feedback from the Authority and Stakeholders. Link to other supporting information.	
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.~~ This subsection should refer to the prescribed structure of the template, but should also indicate where to find information that is not obvious from the table of contents, for example in cases where the EIS relates to a larger project covering several Mining Areas within the Contract Area or for an EIS that contains a large volume of information (especially multiple volumes). Authorship should be provided for chapters.	REPLACEMENT: These additions align the EIS structure with international best practice and the EIS S&G.
1.5.3 Consultation overview. Provide overview of mandatory voluntary stakeholder consultation process and consultations.	ADDITION: This addition aligns the EIS structure with international best practice and the EIS S&G.
2. Policy, legal and administrative context	
Provide information on the relevant legislation, policies, agreements, Standards and guidelines that are applicable to the proposed mining operation.	
2.1 Applicable seabed mining and environmental legislation and policy. ~~and instruments~~ **rules, regulations and procedures of the Authority**	

Outline the national ~~and international~~ legislation **and policy,** for example those **adopted in accordance with article 209 of the Convention**, regulations**, Standards or guidelines** as well as the Regional Environmental Management Plan **of the Authority** ~~if any~~ that apply to the management or regulation of Exploitation in the Area, including any guidance provided for implementation ~~how the proposed operation will implement them.~~	CLARITY NEEDED: There is a difference between Annex IV and Standards in accepting the concept of international legislation. This needs to be standardised. ADDITION: including "*for example those*" is important as it ensures a wider understanding than that of Art 209.
2.2 Other applicable **national** legislation, policies and regulations	
Outline any other legislation, policies or regulations that do not necessarily apply specifically to seabed mining or the environment, but may be relevant to the proposal (e.g., shipping regulations, maritime declarations), ~~[marine scientific research, climate change policies, Sustainable Development Goals). This section should also refer to national regulations and laws that relate to the effects of Exploitation activities on coastal States, or other places where components of Exploitation (e.g., processing) could occur]~~, including any guidance provided for implementation ~~**and how the mining activity will comply with them.**~~	REMOVAL: We support the removal of the end of this paragraph 1) MSR has been removed as this is not appropriate for this part of the Annex (this should be included, if anywhere, in Other Users of the Sea). 2) The SDG have also been removed as there inclusion has already been considered inappropriate during discussions in July Council due to their time limited nature. 3) Climate change policies are included in 2.3. In addition we suggest to also delete the recently proposed addition of '*and how the mining activity will comply with them'.*
2.3 Applicable international and regional agreements	
In addition to the United Nations Convention on the Law of the Sea and the 1994 Agreement relating to the Implementation of Part XI of the Convention, list the international agreements applicable to the operation, (**whether directly or via incorporation into domestic laws cited in section 2.2 above**), such as the International Maritime Organization ~~suite of~~ environmental and safety**-related** conventions, **applicable environmental and biodiversity conventions, climate change conventions, and applicable regional agreements,** which includes the International Convention for the Safety of Life at Sea (SOLAS), the International Convention for the Prevention of Pollution from Ships (MARPOL) and the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention) and the 1996 Protocol thereof; the Convention on Biological Diversity and the Convention on Migratory Species of Wild Animals; and applicable regional agreements, including any guidance provided for implementation ~~**and describe how the proposed operation will comply with them.**~~	CLARITY NEEDED: Should BBNJ be mentioned here, and if so, how? Should CITES be specifically mentioned? Including any guidance provided for implementation.
2.4 Other applicable standards, principles and guidelines	2.4 Other applicable standards, principles and guidelines
Discuss other applicable principles, standards, and guidelines that will be adhered to or aligned with throughout the operation, such as the ~~Standards and Guidelines~~ **instruments** of the International Seabed Authority **not already included in section 2.1**, the Equator Principles, the Environmental Management Standards of the International Organization for Standardization, the Code for Environmental Management of Marine Mining of the International Marine Minerals Society, the Performance Standards on Environmental and Social Sustainability of the International Finance Corporation and the Sstandards of the Extractive Industries Transparency Initiative.	CLARITY NEEDED: as to whether language should be 'instruments' or 'Standards and guidelines'. Has 'instruments' been used in this way elsewhere in the draft regulations?
2.5 National Processes	
Describe any national processes followed and permits received from the sponsoring State in relation to the environmental impact assessment.	We agree with the inclusion and wording of this new subparagraph.
3. Description of the proposed ~~development~~ **project**	

Provide details of the proposed ~~development activity~~ **project**, including relevant diagrams and drawings. 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 should 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.	LANGUAGE: Given that this is in the regulations, it shouldn't be 'expected' that an applicant / Contractor would provide. Suggest removing those few words.
3.1 Project area definition	
3.1.1 Location	
Include coordinates of the project area, detailed location maps (drawn to scale), ~~a layout of the site~~ **and showing the relevant sites proposed as Contract Area and Mining Area and any other features that can be usefully marked upon the map at the time of application, including** the locations of proposed impact reference zones and preservation reference zones as well as locations of other nearby contract areas or known seabed infrastructure. Provide general location of the project on a regional map.	DEFINITIONS: The definition of Mining Area in the schedule is ambiguous: "Mining Area" means the part or parts within the Contract Area, described in a Plan of Work, as may be modified from time to time in accordance with these regulations." COMMENT: Maps are incredibly important - both site specific but also for putting the mining site in context of the region.
3.1.2 Associated activities	
Describe the supporting activities and infrastructure required (e.g., transportation corridors, **ports for disembarkation of vessels, ports for unloading of ore** that are outside the direct mining site.	
3.2 Mineral resource	
Provide details of the type of resource proposed for extraction (e.g. sea floor massive sulphides, polymetallic nodules, ferromanganese crusts), the type, size, shape, tonnage, volume and grade of the mineral deposit. Estimates of the inferred ~~and~~ indicated resource **and probable reserves** should be provided **on the basis of the international CRIRSCO reporting template or national accepted codes (NI 43- 33 101, JORC Code) and the official ISA mineral classification (PMN, PMS and CFC**).	CLARITY NEEDED: We are unsure whether there should be such specific examples of reporting templates in the regulations - should these be left to standards / guidelines where updating would be easier? ADDITION: details of resource requested in the Standard have been added
3.3 Project components	
Provide background information on the proposal and the technologies and equipment to be employed, and include the subsections set out below.	
3.3.1 Project scale	
Provide an overview of the spatial **(horizontal and vertical)** and temporal **(seasonal and annual)** scales of the mining operation, including volumes, surface area and **depth** of penetration into the seabed**.** Provide an overview of **physical and chemical properties** of material to be recovered, **dewatered**~~processed~~ and deposited or discharged into the water column or back to the seabed, **and the target depth range for any such discharge**. This should include an account of the area to be ~~physically mined~~ directly impacted, as well as the likely extent of any secondary impacts (e.g., sediment plumes, **noise, light**), which will be discussed in greater detail later.	CLARITY NEEDED: when depth is discussed, it should always be noted whether that is depth in the sediment, depth in water column etc or else it could be misleading
3.3.2 Mining **Equipment**	

Provide details of the technologies to be employed, including relevant diagrams and drawings that address: the Mining Workplan, timelines and the general mining sequence, the technologies to be employed to recover the resource from the seabed, the depth of penetration into the seabed, the **specific technologies developed to reduce the direct impact of mining activities (e.g. noise, light, plumes)** and other details the mining activities. **Describe the energy requirements and emissions of the requisite machinery** subsea and on the surface.	ADDITION: to ensure that energy requirements are considered subsea and on the surface.
3.3.3 Transport/materials handling	
Provide a description of all methods to be used to transport the mineral-bearing ore, including from the sea floor to the surface, and any methods related to the trans-shipment of the mineral-bearing ore, including transfers at sea. **Describe the energy requirements** and emissions **of the requisite machinery,** including any specific technologies developed to reduce impact.	STANDARDISATION: Need for energy requirement information should be standardised across subsections of 3.3. Add in need for emissions data across 3.3.
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 water column activities (such as riser pipe transfer) and 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 and separation of the mineralized material at the surface. This section should also cover any disposal of processing water, seawater/fines. Include a description of the waste management, transport, disposal and discharge of sediment, wastes or other effluents into the Marine Environment and the disposal of waste from general ship operations. Describe the management of shipboard wastes to be transported to shore-based disposal facilities, including the handling and management of hazardous materials, together with a description of the nature of such material and its transportation, storage and disposal. **Describe the energy requirements** and emissions **of the requisite machinery**, including any specific technologies developed to reduce impact.	STANDARDISATION: Note use of "mineralized material" here in the Annex compared to "mineral resource" elsewhere
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 and emissions of the requisite machinery,** including any specific technologies developed to reduce impact.	We agree with the inclusion and wording of the majority of this subparagraph, and add a small addition for clarity at the end.
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.	
3.4 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.	COMMENT: The information required should be further elaborated in Standards / SOPs
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 Alternatives considered	
Provide an account of alternative options that were considered**, demonstrating that reasonable alternatives to the proposed project** were rigorously explored and objectively evaluated **but 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**, environmental impacts, financial feasibility, transport and materials handling, shipboard processing and stakeholder support. A no mining scenario must be included.	ADDITION: to ensure that the alternatives section matches up to expectations from international EIA processes (particularly including alternatives around stakeholder support and environmental impacts)
3.8 Development timetable (detailed schedule)	
3.8 Provide a description of the overall timetable, from initiation and equipment construction, the implementation of the mining programme, through 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) Pre-construction activities including the development and testing of mining equipment, operations and systems in situ (if applicable); (a) bis Timing of expected regulatory approvals (b) A construction schedule and staging timetable; (c) An infrastructure development schedule; (d) A monitoring schedule (during and after operations); and (e) A closure schedule. Whether the availability of funds is subject to approvals should be noted on the timetable.	ADDITION: the timeline should include timing of expected regulatory approvals (and how they tie up with releases of funding)
4. Description of the existing ~~physicochemical~~ **oceanographic** environment	
Give a detailed account of knowledge of the environmental **(physical, chemical, geological, oceanographic)** conditions at the ~~mine site~~ **impact area**, which should include information from a thorough literature review as well as from on-site studies. The Guidelines on baseline data collection shall guide the drafting of	COMMENT: Given the overlap between subsections in these chapters, requirements for each subsection need to be made clear, and should not duplicate effort. It should be highlighted that this is the *description* for the contents of the whole section.

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~~ the prior environmental risk assessment that will have identified the main impacts, and thus the elements that need to be measured and assessed ~~emphasized~~ in the environmental impact assessment.	DEFINITIONS / STANDARDISATION: The use of mining site / mine site / mining area / impact area needs to be standardised and defined. NOTE: while it is clear that the Guidelines need to be referred to here, currently they are not fit for purpose, and including them here means that they will have to be improved before this becomes operational.
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).	COMMENT: Note that 6 bullet points could still equal a considerable amount of text
4.2 Regional overview	
Describe the general **baseline** environmental conditions of the site **and impact area**, including **but not limited to** the **physical, chemical** geological and oceanographic setting within a broader regional context and ~~refer~~ **in accordance with** to the applicable Regional Environmental Management Plan ~~**if any**~~. This should be brief section that includes a map. A more detailed site-specific **and impact area** description will be provided in accordance with the sections below.	Remove 'if any' after reference the REMP
4.3 Studies completed	
Describe any prior research / Exploration studies (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~~ This research should be detailed in the appendices / reports attached to appendices ~~and the environmental reference baseline data collected for the Authority, as outlined in the exploration contract conditions, should accompany the Environmental Impact Statement.~~	COMMENT: language revised to make it clearer what it expected here
4.4 Meteorology and air quality	
Provide a general overview of **meteorology**~~climatology~~ (e.g., wind directions and speeds, seasonal patterns) in the Contract Area. Provide description of air quality, including chemical characteristics. This section may be most relevant to surface operations.	ADDITION: of extra requirements from the Standard
4.5 Geological **properties and habitat classification** ~~setting~~	
Describe the nature and extent of the mineral resource and bedrock within the broader geological context. Describe the geological, petrographic and geomorphological setting of the site, including high-resolution bathymetric maps and sedimentation rates, and refer to submarine features such as hydrothermal vents, ~~seepsand~~ seamounts, abyssal hills and canyons as appropriate. **Provide a baseline description of seabed substrate composition characteristics (to benthic subsurface layers), including specific gravity, bulk density, grain size, dissolved and particulate organic and inorganic carbon, nutrients, carbonate, physical and chemical composition of pore-water, redox regimes, and spatial (horizontal and vertical) and temporal (seasonal and interannual) variability in these characteristics. Substrate composition shall be described to a depth below the seafloor prescribed in the relevant Standard or Regional Environmental Management Plan.**	CHANGE: Language changed around features to ensure that all the features mentioned (hydrothermal vents, seamounts, abyssal hills and canyons) are defineable and in common use when describing the seafloor. Seeps, for example, are not so defineable. STANDARDISE: Language changed to standardise all subparagraphs. NOTE: new text depends on values in Standard / REMP. What if the relevant Standard / REMP ends up not including this?

4.6 Physical oceanographic setting	
Provide a Contract Area and site-specific description of oceanographic aspects such as **thermohaline conditions, optical properties and turbidity, currents regime, tides, waves, turbulence, and oceanographic fronts and eddies.** Seasonal variability is an important element. Detail is required on the regional setting, as well as the specific mining site and impact area, and should include changes in physical conditions and processes according to depth and horizontal distance from the proposed mine site (near-field, far-field).	ADDITION: 'Mining' site and 'impact area' added for clarity.
4.7 Chemical oceanographic setting	
Provide a description of water mass characteristics at the site and above the site at various depths of the water column, including the structure and development of the oxygen minimum zone in particular near the sea floor (up to 200m above bottom), that includes nutrients, particle loads, temperature and dissolved gas profiles, vent-fluid characteristics if applicable, turbidity, etc.. **Provide a description of chemical oceanographic properties at the site and above the site throughout the water column, including nutrients, particle loads, turbidity, temperature, oxygen, salinity, density, particulate and dissolved organic matter, pH, chemical composition, including concentrations of trace metals, dissolved gas profiles, depth range and characteristics of oxygen minimum zone, redox regimes, carbonate saturation, and spatial (horizontal and vertical) and temporal (seasonal and interannual) variability of these properties, and vent-fluid characteristics if applicable.** ~~**Provide projections of how and where these aspects are likely to change over the next 50 years (or time period relevant to the contract term and subsequent Closure period.)**~~	STANDARDISATION: "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.)" is not mentioned in other similar sections. Would suggest deleting this, or reframing into "expected changes due to natural or anthropogenic change over the period of the Contract", across all necessary sections.
4.8 Seabed substrate characteristics	
Provide a description of seabed substrate composition, including physical and chemical properties (e.g. sediment composition, pore-water profiles, grain size sediment mechanics, **dissolved and particulate organic and inorganic carbon, nutrients , carbonate, redox regimes physical and spatial (horizontal and vertical) and temporal (seasonal and interannual) variability in these characteristics.** Substrate composition should be described to a depth below the seafloor prescribed in the relevant Standard or Regional Environmental Management Plan.	ADDITION: of extra requirements from the Standard. COMMENT: language revised to make it clearer what it expected of this requirement.
4.9 Natural hazards	
Provide a description **and trend analysis variation related to** ~~**of**~~ applicable potential natural hazards for the site, including volcanism, seismic activity, cyclones/ hurricanes ~~trends~~ and tsunamis, etc. and how these may vary in future as a consequence of climate change;	COMMENT: Unsure what 'trend analysis of variation' is suggesting here - this should be clarified or removed.
4.10 Noise and light	

Provide a description of ambient noise and light at the seabed, in the water column and at the surface, **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~~.	REMOVAL: Remove "and the influence of existing Exploitation, Exploration and maritime activity" as this chapter only provides the baseline description against which impacts will be measured and assessed. ADDITION: of "at the seabed, in the water column and at the surface" to cover all possibilities where light or noise may be occurring
4.11 Greenhouse gas emissions and climate change	
Provide a description of the level of gas and ~~chemical~~ **fluid** emissions from both natural and anthropogenic activities in the Area, as well as those affecting sea floor and water-column chemistry. **Effects of mining on ocean climate mitigation functions and services should be described (including any anticipated alteration of CO_2 uptake and sequestration, or nutrient cycling),** or the appropriate REMP referenced.	EIA CONTENT: "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)" - if this is regional, then it should be in the REMP and referred to here.
4.12 Summary of the existing physicochemical environment	
Summarize key findings and include notes on special considerations for hydrothermal vents, ~~seeps~~, **ridges**, seamounts and oceanographic fronts or eddies, abyssal hills and canyons **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 that the key messages section.	COMMENT: May not be needed with key messages up front. If kept, ensure that it is not a duplication of key messages. STANDARDISATION: ensure list of features is the same as 4.5.
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 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 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 measured and assessed ~~emphasized~~ in the environmental impact assessment.	STANDARDISATION: Rearranged to match the wording to that in the previous section
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).~~ Provide key messages (overview of the main findings, covered in six or fewer bullet points);	COMMENT: Note that 6 bullet points could still equal a considerable amount of text
5.2 Regional overview	

~~Provide general regional context, and include site-specific issues and characteristics, existing Regional Environmental Management Plan **if any, existing** areas of particular environmental interest, **ecologically or biologically significant marine areas** and national areas of adjacent countries, if any. References to relevant technical data and previous studies should also be included. This section should be brief, but provide broader context for the more detailed site-specific description below.~~	DELETION: We have suggested a second Alt text to Standardise with 4.2 (see below).
~~**5.2 Alt Describe the general baseline biological environmental conditions of the mining site and Impact Area, within a broader regional context and in accordance with the applicable Regional Environmental Management Plan.**~~	DELETION: We have suggested a second Alt text to Standardise with 4.2. (see below)
5.2 Alt 2 Provide regional context for the baseline environmental conditions of the mining site and impact area, including but not limited to the general biological setting, in accordance with the applicable Regional Environmental Management Plan. This should be a brief section that includes a map. A more detailed site-specific and impact area description will be provided in accordance with the sections below.	STANDARDISATION: We have suggested a second Alt text to Standardise with 4.2.
5.3 Studies completed	
Describe any prior research studies / Exploration studies (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. This research should be detailed in the appendices / reports attached to appendices, and the environmental reference baseline data collected for the Authority, as outlined in the exploration contract conditions, should accompany the Environmental Impact Statement.	STANDARDISATION: Standardisation with above
5.4 Biological environment	
Address diversity, abundance, biomass, richness, density, community-level analyses (such as connectivity, trophic relationships, ecosystem resilience, ecosystem function) **as well as spatial** and temporal variability. Results of work on ecosystem models and accepted ecosystem indicators, metrics and methods should also be presented here. Any understanding of recovery in the ecosystems should also be presented. 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 (at least surface, midwater and benthic as below), there should be a ~~description~~ comprehensive list of the ~~main~~ taxonomic/ecological groups in and around the proposed Contract Area (e.g., plankton, fish, marine mammals, benthic invertebrates, demersal scavengers), ~~using~~ in accordance with the Authority's Standards and Guidelines. The description ~~needs to detail fauna communities in the water column down to the Mining Area,~~ should include the size distributions of the fauna and their life history stages (such as larval and juvenile stages, which differ from the adult stage). Discussions of species should include considerations of whether they are endemic (restricted to just the site, resource substrate or region) or are known to be rare, threatened or endangered. ~~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~~	ADDITION: to include the requirements of the Standard

~~scale of impacts to be expected if mining occurs.~~ Migratory and highly mobile species should be included where foraging ranges / migration pathways / management units have been noted as overlapping with proposed operations during scoping.	
5.4.1 Surface	
Describe the biological ~~environment~~ **communities** from the surface to a depth of 200 metres, including **microbes,** plankton (phytoplankton and zooplankton), surface/near-surface fish such as tuna, and seabirds, **marine turtles** and marine mammals. ~~The description should also evaluate the temporal and spatial variability in distribution and composition.~~, Address factors provided in 5.4, as well as spatial and temporal variability.	We agree with proposed amendments of this subparagraph and propose a further small reworking of the last sentence text to link to 5.4.
5.4.2 Midwater	
Describe the 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.~~ Address factors provided in 5.4, as well as spatial and temporal variability.	We propose a small reworking of the last sentence text to link to 5.4.
5.4.3 Benthic	
Describe the benthic **microbial,** invertebrate and fish communities, including infauna, **epifauna** and demersal fish, up to an altitude of 50 metres above the sea floor. **Ecosystem functions**, **such as** bioturbation **etc.** should also be covered in this section. . ~~The description should also evaluate the temporal and spatial variability in distribution and composition.~~ Address factors provided in 5.4, as well as spatial and temporal variability.	We propose a small reworking of the last sentence text to link to 5.4.
5.4.4 Ecosystem -level description	
[Alt] Summarize existing community and ecosystem-level studies. This should include integration of connectivity studies (e.g. life history and recruitment research), trophic interactions and the linkages between food energy and contaminants in the food chain (including bentho-pelagic couplings) and ecosystem functioning / services. Food energy linkages and the complexity of the food web should be included, giving consideration to the impacts that may result from contaminants or other disruptions to the food web. Understanding across depths should be provided. Emphasis might be placed on knowledge of trophic levels, the degree of interaction between benthic and pelagic communities, whether there are specialized predators that could be more vulnerable than generalists, and the complexity of the food web and species interactions, with a view to gaining an idea of the resilience of the system to disturbances. It is important to consider wider community relationships to enable assessments to move beyond community descriptions to incorporate potential changes in ecosystem function.	ADDITION: The existing text needs considerably more detail to allow contractors to understand what is expected here. An alternate paragraph is suggested derived from text in the Draft Standard.
5.5 Summary of the existing biological environment	
Summarize findings ~~with respect to the biological environment including regional distributions, special faunal characteristics, etc~~. focussing on key ecosystems and species determined above, ~~from the sea surface to the sea bed~~. It is envisaged that this summary will be up to one page in length.,	ADDITION: There needs to be a connection starting to emerge to the key species and ecosystems that will be assessed below.
6. Description of the existing socioeconomic **and sociocultural** environment	

This section should describe the socioeconomic **and sociocultural** aspects of the project. This may include consideration of the scale of effects (such as the creation of jobs and estimates of the risk of environmental impacts), extent of duration of impacts in time and space, intensity or severity of social impacts and an assessment of whether impacts are likely to be cumulative. It is important to consider the social equity or distribution of impacts across different populations: in other words, which groups are likely to be affected in which ways.	ADDITION: of text from Standard
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 of the main findings)~~ Provide key messages (overview of the main findings, covered in six or fewer bullet points);	COMMENT: Note that 6 bullet points could still equal a considerable amount of text SUGGESTION: 6.1 and 6.5 are likely to contain considerable duplication. Could they be streamlined into one subsection?
6.2 Existing uses	
6.2.1 Fisheries	
Relevant fisheries shall be described here. This should include description of areas of significance for fish stocks, such as spawning grounds, nursery areas or feeding sites. ~~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 fisk stocks, such as spawning grounds, nursery areas or feeding sites as well as ecologically or biologically significant marine areas.~~ Provide a 'heat map' showing important fishery areas in relation to proposed operations and note any areas of interaction or cumulative impact.	ADDITION: Maps are essential when it comes to understanding impact, and each of these sections should be accompanied by maps.
6.2.2 Marine traffic	
This section describes the non-project-related marine traffic occurring within the ~~project~~ Contract area and uses the REMP to provide a summary of regional movements. Provide a 'heat map' showing densities of marine traffic in relation to proposed operations and note any areas of interaction or cumulative impact. Provide this per season if repeatable seasonal variation exists.	We suggest reference to the REMP and the inclusion of a map in this subparagraph.
6.2.2bis Submarine cables	
This section describes the in situ non-project-related submarine cables occurring within the Contract area. Provide a map showing known submarine cables in relation to proposed operations and note any areas of interaction or cumulative impact.	We suggest the inclusion of a map in this subparagraph.
6.2.3 Tourism	
Describe areas used by cruise liners and for game fishing, sightseeing, marine mammal watching and other relevant tourism activities. Provide a 'heat map' showing densities of tourism in relation to proposed operations and note any areas of interaction or cumulative impact. Provide this per season if repeatable seasonal variation exists.	We suggest the inclusion of a map in this subparagraph.
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.~~	COMMENT: This needs to go in a different section - maybe in section 2
6.2.5 bis 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)]	We agree with the inclusion and wording of this subparagraph Though it should be labelled 6.2.5 bis
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**~~).	EIA CONTENT: Remove MGR and regulating / supporting ecosystem services - impossible to assess impact to MGR, and ecosystem services are already covered further up
6.2bis Planned uses	
Describe the planned uses of the area for which information is publicly available (e.g. other exploitation contracts, exploration contracts, fisheries, maritime traffic, tourism, marine scientific research, submarine cables, area-based management tools).	CLARITY: It would be useful to understand the meaning of 'planned' used here.
6.3 Sites of an archaeological ~~or~~, historical **or paleontological** nature	
List any sites of archaeological, historical or **paleontological** significance that are known to occur within the potential area of impact. Provide a map showing known archaeological and historical sites in relation to proposed operations and note any areas of interaction or cumulative impact.	We suggest the inclusion of a map in this subparagraph.
6.4 Summary of existing **socioeconomic and** sociocultural environment	
Summarize findings, focussing on key **socioeconomic and** sociocultural environments for the EIA.	
7. Assessment of impacts on the ~~physicochemical~~ **oceanographic** environment and proposed Mitigation	

Provide a detailed description and evaluation of potential impacts **and Environmental Effects** of the operation to components of the physical, **chemical, geological, and oceanographic** environment identified in section 4. This ~~may need to~~ should consider ~~effects that could happen during~~ the entire lifespan of the project, i.e. construction/developent (pre-commissioning), operational and decommissioning phases.~~, as well as the~~ The potential for accidental events should also be considered. ~~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 and limitations of any impact modelling undertaken);~~ ~~(b) Measures that will be taken to avoid, remedy or mitigate such impacts; and~~ ~~(c) The unavoidable (residual) impacts that will remain, including their expected longevity.~~ ~~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~~ the scoping environmental risk assessment that will have identified the main impacts, and thus the elements that need to be emphasized in the environmental impact assessment.	These three chapters (7-9) need considerable streamlining and development. There is a lot of duplication (particularly between 7 and 7.2), and a lot of confusion in the way that requirements for Contractors are set out (e.g. mixing up impacts and operations / impacts and effects). Suggestions for resolution of this are provided here - the suggestion is more detailed than would be expected in most international EIAs, but the want for such detail seems clear in Council.
7.1 Key messages	
Provide an overview of the key content covered in section 7.	.
7.2 Description of potential impact categories	
Provide an overview and description of the categories of ~~general~~ **potential** impacts caused by the **proposed** mining operation~~. This should introduce the major types of 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~~. Key elements that need to be included are: (new a) the major types of potential impacts, such as habitat removal, the creation of sediment plumes, noise, light, etc.; (a) Descriptions of impact studies carried out during exploration (e.g., component testing and the resulting observations from the associated monitoring); (a bis) Descriptions of test mining studies undertaken prior to the application; (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 pathways and assessment from impact to receptor (including the assumptions and limitations of any impact modelling undertaken);	CLARITY: Duplicated text removed /moved to the list below for clarity. .
~~7.3 Meteorology and air quality~~ ~~Provide a description of potential impacts and Environmental~~	*We propose to replace 7.3 (meteorology and air quality) to 7.7 (Seabed substrate characteristics) with two new sections:*

~~eEffects on air quality and components of meteorology from the surface or subsurface operations.~~ ~~7.3.1 Potential impacts and Environmental Effects and issues to be addressed~~ ~~7.3.2 Environmental management measures to mitigate impacts and effects~~ ~~7.3.3 Residual impacts~~ ~~7.4 Geological setting Provide a description of impacts the mining operation may have on the geomorphology of the site or its sedimentary and geological characteristics.~~ ~~7.4.1 Potential impacts and issues to be addressed~~ ~~7.4.2 Environmental management measures to mitigate impacts~~ ~~7.4.3 Residual impacts~~ ~~7.5 Physical oceanographic setting~~ ~~Provide a description of the effects on the current speed/direction , etc. A regional oceanographic model will be relevant to this section. Provide a description of the impacts (e.g., sediment plume generation, discharge water) and their effects on the oceanographic settings (e.g., changes in temperature and salinity of water, optical characteristics and turbidity, etc.). A regional oceanographic model will be relevant to this section. Characteristics of sediment and discharge plumes (their frequency, spatial extent, composition and concentration, etc.) should be described (or a reference is made to subparagraph 7.6)~~ ~~7.5.1 Potential impacts and issues to be addressed~~ ~~7.5.2 Environmental management measures to mitigate impacts~~ ~~7.5.3 Residual impacts~~ ~~7.6 Chemical oceanographic setting~~ ~~Provide a description of the effects such as sediment plume generation (frequency, spatial extent, composition and concentration) and the clarity of water, particulate loading, water temperature, dissolved gas and nutrient levels etc., in all relevant levels of the water column. A regional oceanographic model will be relevant to this section. For a sea floor massive sulphide project, the modification of vent fluid discharges, if present, should be addressed.~~ ~~7.7 Seabed substrate characteristics~~ ~~For example: changes in the sediment composition, grain size, density and pore-water profiles.~~	*7.2 bis Description of impact pathways* *7.2 ter Receptors and impacts* *See replacement text below. T*he suggestion is more detailed than would be expected in most international EIAs, but the want for such detail seems clear in Council.
7.2 bis Description of impact pathways	
The preferred approach for this template is to include for each receptor descriptions of: (a) The methods used to determine the pathway from impact to receptor (including the assumptions and limitations of any impact modelling undertaken); (b) The source(s) of impact (c) The nature, spatial extent and temporal extent of potential impact(s), including cumulative impacts; (d) Measures that will be taken to avoid, minimise or mitigate such impacts; and (e) The unavoidable (residual) impacts that will remain, including their expected longevity.	*We propose to replace 7.3 (meteorology and air quality) to 7.7 (Seabed substrate characteristics) with two new sections:* *7.2 bis Description of impact pathways* *7.2 ter Receptors and impacts.* *T*he suggestion is more detailed than would be expected in most international EIAs, but the want for such detail seems clear in Council.
7.2 ter Receptors and impacts	

Receptors for which this will be done include: (a) Meteorology and air quality (b) Geology (c) Physical oceanography (d) Chemical oceanography (e) Seabed substrate characteristics Impacts to be considered include: (a) Sediment plume generation, (b) discharge of water (b)bis Energy flow pathways (such as hydrothermal fluid); (c) Noise and light (d) Greenhouse gas emissions and climate change emissions (including estimated greenhouse gas emissions and a greenhouse gas emissions assessment where appropriate) Effects to be considered include: (a) changes in temperature and salinity of water, (b) optical characteristics / water clarity (c) turbidity / particulate loading (d) sediment characteristics (including changes in the sediment composition, grain size, density and pore-water profiles) (e) discharge plumes (frequency, spatial extent, composition and concentration, etc.) (f) primary sediment plume (frequency, spatial extent, composition and concentration) (g) dissolved gas levels (h) nutrient levels (i) For a sea floor massive sulphide project, the modification of vent-fluid discharges, if present, should be addressed.	*We propose to replace 7.3 (meteorology and air quality) to 7.7 (Seabed substrate characteristics) with two new sections:* *7.2 bis Description of impact pathways* *7.2 ter Receptors and impacts.* *T*he suggestion is more detailed than would be expected in most international EIAs, but the want for such detail seems clear in Council.
7.8 Natural hazards	
Discuss any impacts of the operation on natural hazards and plans to deal with these hazards.	
7.9 Noise and light	
Provide a description of potential impacts and Environmental Effects from the proposed operation from, n Noise and light above existing levels **especially the impacts of noise** on avoidance, masking and availability of prey (e.g. **on marine mammals)**	COMMENT: Noise and light is normally dealt with in a separate chapter given its cross-physical and biological nature
7.10 Greenhouse gas emissions and climate change	
Provide an~~A~~ assessment of gas and chemical emissions from **proposed operations, relative to emissions** both natural and anthropogenic activities, ~~as well as those affecting sea floor and water-column chemistry~~. Subsections should include estimated greenhouse gas emissions and a greenhouse gas emissions assessment where appropriate.	
~~7.11 Maritime safety and interactions with shipping~~	
~~**Provide a description of predicted maritime** Include project safety **issues** and **potential** interactions with other vessels from the proposed activities.~~	CHANGE: Move to later chapter - either socio-economic chapter or separate chapter dealing with other users of the sea
~~7.12 Waste management~~	
~~**Provide a description of proposed vV**essel waste management, with reference to compliance with relevant conventions, legislation and principles, and methods of cleaner production and energy balance.~~	CHANGE: Waste management compliance belongs in a different or separate chapter.

7.13 Cumulative impacts	
Provide a description of Tthe **source of** nature and extent of any interactions between various **potential environmental** impacts **and subsequent Environmental Effects. wW**here they may have cumulative effects, **they** must be considered on both spatial and temporal scales over the lifetime of the **proposed** mining operation.	
7.13.1 Proposed operations impacts Cumulative within the ~~scope~~ **Impact Area** of the mining proposed herein.	
7.13.2 Regional operation impacts Cumulative between activities, where known in the region	
7.14 Other issues	
Outline here other, more general issues, as applicable.	
7.15 Summary of residual effects	
Summarize key findings on potential environmental impacts and Environmental Effects, environmental management measures, residual effects, and any potential impacts and effects to areas under any State's national jurisdiction. A table may be a useful summary format to pull together the above elements in a simple visual mode.	
8. Assessment of impacts **and Environmental Effects** on the biological environment and proposed Mitigation	
Provide a detailed description and evaluation of potential impacts **and Environmental Effects** of the **proposed** operation **and alternatives considered in section 3.7** to the biological environmental components identified in section 5 in the Impact Area. ~~This may need to should c~~Consider **impacts and** effects that could happen during the entire lifespan of the project, i.e. construction/development (pre-commissioning), operational and decommissioning phases~~. As well as~~ The potential for accidental events should also be considered. ~~The preferred approach for this template 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 (temporal and spatial) of any actual or potential impact, including cumulative impacts;~~ ~~(a)ter The methods used to determine impacts (including the assumptions and limitations of any impact modelling undertaken);~~ ~~(b) Measures that will be taken to avoid, remedy or mMitigate and manage such impacts; and~~ ~~(c) The unavoidable (residual) impacts that will remain, including their expected longevity.~~ ~~(d) A description of the impacts and effects against Thethe applicable environmental goals and objectives, indicators and threshold values as identified in the applicable Regional Environmental Management Plan, if any.~~ ~~It is important that these sections make clear the expected longevity of unavoidable (residual) impacts and whether or not the biological environment is expected to recover, and in what time frame, following disturbance.~~ The detail in this section is expected to be based on ~~a prior~~ the scoping environmental risk assessment that will have identified the main impacts, and thus the elements that need to be emphasized in the environmental impact assessment.	We suggest some amendments to this introductory para, including moving the listed aspects to the relevant rewritten sections below so as to be clear on where the information is to be provided.

8.1 Key messages	
This section should provide an overview of the key content covered in section 8.	
8.1bis Description of the key sources of environmental impacts	
This section should describe the key sources of impacts on the marine environment from the mining operation.	
8.2 Description of potential impact categories	
This section is an overview and description of the categories of general potential impacts caused by the proposed mining operation. ~~This is not expected to be detailed, but rather to introduce the major types of impacts and their effects, such as habitat removal, the crushing of animals, the creation of sediment plumes, noise and light, etc. A description should be included of any lessons learned from activities during the exploratory phase of the programme (e.g., mining system component tests).~~ Key elements that need to be included are: (new a) the major types of potential impacts, such as habitat removal, the creation of sediment plumes, noise, light, etc. These impact categories should be used in subsequent descriptions and evaluations of potential environmental impacts and Environmental Effects from the proposed operations. (a) Descriptions of impact studies carried out during exploration (e.g., component testing and the resulting observations from the associated monitoring); (a) bis Descriptions of test mining studies undertaken prior to the application; (b) Descriptions of the results of any environmental risk assessments, which should be ~~based on the initial environmental risk assessment conducted in accordance with Regulation 46quarter and included in the Scoping Report, and may be~~ included as separate reports or appendices where appropriate; and (c) Descriptions of the methods applied to describe and quantify impact ~~categories~~ pathways and assessment ~~of associated effects that have not previously been described in section 3bis~~.	
~~8.3 Surface~~ ~~Description of potential effects on the biological environment from the surface down to a depth of 200 metres, including any impacts on plankton (phytoplankton and zooplankton), nekton, surface/near-surface fish such as tuna, and seabirds, marine turtles and marine mammals.~~ ~~8.3.1 Potential impacts and issues to be addressed~~ ~~8.3.2 Environmental management measures to mitigate impacts~~ ~~8.3.3 Residual impacts~~ ~~8.4 Midwater Description of the potential effects on the biological environment from a depth of 200 metres down to 50 metres above the sea floor, including zooplankton, nekton, mesopelagic and bathypelagic fishes and deep-diving mammals.~~ ~~8.4.1 Potential impacts and issues to be addressed~~ ~~8.4.2 Environmental management measures to mitigate impacts~~ ~~8.4.3 Residual impacts~~ ~~8.5 Benthic Description of the potential effect on benthic invertebrate and fish communities, including infauna, epifauna and demersal fish, up to an altitude of 50 metres above the sea floor.~~ ~~8.5.1 Potential impacts and issues to be addressed~~ ~~8.5.2 Environmental management measures to mitigate impacts~~ ~~8.5.3 Residual impacts~~	We propose to replace 8.3 (Surface) to 8.5 (Benthic) with two new sections: 8.2 bis Description of impact pathways 8.2 ter Receptors and impacts The suggestion is more detailed than would be expected in most international EIAs, but the want for such detail seems clear in Council.

8.2 bis Description of impact pathways	
The preferred approach for this template is to include for each impact pathway an overarching description of: (a) The methods used to determine the pathway from impact to receptor (including the assumptions and limitations of any impact modelling undertaken); (b) The source(s) of impact (c) The nature, spatial extent and temporal extent of potential impact(s), including cumulative impacts; (d) Measures that will be taken to avoid, minimise or mitigate such impacts; and (e) The unavoidable (residual) impacts that will remain, including their expected longevity.	We propose to replace 8.3 (Surface) to 8.5 (Benthic) with two new sections: 8.2 bis Description of impact pathways 8.2 ter Receptors and impacts The suggestion is more detailed than would be expected in most international EIAs, but the want for such detail seems clear in Council.
8.2 ter Receptors and impacts	
Receptors for which this must be done include: (a) Microbial communities (b) Phytoplankton / zooplankton / nekton (c) Meiofauna (infauna / epifauna) (d) Macrofauna (infauna / epifauna / demersal fish) (e) Megafauna, including surface/near-surface fish such as tuna, and seabirds, marine turtles and marine mammals As appropriate, these receptors are to be considered (a) at the surface (from the surface down to a depth of 200 metres) (b) midwater (from a depth of 200 metres down to 50 metres above the sea floor) (c) up to an altitude of 50 metres above the sea floor, including zooplankton, nekton, mesopelagic and bathypelagic fishes and deep-diving mammals. Impacts to be considered include: (a) Sediment plume generation, (b) discharge of water (c) Noise and light (d) Greenhouse gas emissions and climate change emissions (including estimated greenhouse gas emissions and a greenhouse gas emissions assessment where appropriate) Effects to be considered include: (a) changes in temperature and salinity of water, (b) optical characteristics / water clarity (c) turbidity / particulate loading (d) sediment characteristics (including changes in the sediment composition, grain size, density and pore-water profiles) (e) discharge plumes (frequency, spatial extent, composition and concentration, etc.) (f) primary sediment plume (frequency, spatial extent, composition and concentration) (g) dissolved gas levels (h) nutrient levels (i) For a sea floor massive sulphide project, the modification of vent-fluid discharges, if present, should be addressed.	We propose to replace 8.3 (Surface) to 8.5 (Benthic) with two new sections: 8.2 bis Description of impact pathways 8.2 ter Receptors and impacts The suggestion is more detailed than would be expected in most international EIAs, but the want for such detail seems clear in Council.
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~~	REMOVAL: Residual issues are covered in 8.8
8.7 Cumulative impacts	
The nature and extent of any interactions between various impacts where they may have cumulative effects must be considered. This should include an evaluation of the spatial and temporal intensity of mining and its effects on other impacts **as well as an evaluation of the nature and spatial and temporal extent of any potential and actual interference with the ecological balance of the marine environment.** Describe how spatial and temporal cumulation will differ between faunal groups and different habitats.	We support the proposed additional text and further suggest including "Describe how spatial and temporal cumulation will differ between faunal groups and different habitats."
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	
Summarize key findings on potential environmental impacts and Environmental Effects, environmental management measures, residual effects, and any potential impacts and effects to areas under any State's national jurisdiction. Information on potential recovery times following disturbance and the longevity of residual effects should be included. This will give readers an understanding of the temporal component and efficacy of proposed mitigation measures. A table may be a useful summary format to pull together the above elements in a simple visual mode.	We have provided here some more detailed wording that will make the summary of residual effects easier to assess.
9. Assessment of impacts and **Environmental Effects** on the socioeconomic environment and proposed Mitigation	

~~As in the preceding sections,~~ Provide a detailed description and evaluation of potential impacts **and Environmental Effects** of the operation to the socioeconomic components identified in section 6. This ~~may need to~~ should consider ~~effects that could happen during~~ the entire lifespan of the project, i.e. construction/development (pre-commissioning), operational (including maintenance) and decommissioning phases ~~as well as the potential for accidental events~~. Attitudes towards, and perceptions of, the proposed project are among the variables that should be considered in determining the significance of impacts. The potential for accidental events should also be considered. ~~The preferred approach for this template is to include for each component a description of:~~ ~~(a) The **source**, nature and **temporal (seasonal and annual)** extent of any actual or potential impacts **and effects from the proposed operation and alternatives considered**, including cumulative impacts;~~ ~~(a)bis The methods used to determine impacts (including the assumptions **and limitations** of any impact modelling undertaken);~~ ~~(b) Measures that will be taken to avoid, remedy or mMitigate **and manage** such impacts **within acceptable levels from the proposed operation.**~~ ~~(c) The unavoidable (residual) impacts that will remain.~~ The detail in this section is expected to be based on the scoping environmental risk assessment that will have identified the main impacts, and thus the elements that need to be emphasized in the environmental impact assessment.	We suggest some amendments to this introductory para, including moving the listed aspects to the relevant rewritten sections below so as to be clear on where the information is to be provided.
9.1 Key messages	
Provide an overview of the key content covered in section 7.	
9.1 bis Description of potential impact categories	
Provide an overview and description of the categories of ~~general~~ **potential** impacts caused by the **proposed** mining operation. Key elements that need to be included are: (a) the major types of ~~effect~~**potential impacts**, such as habitat removal, the creation of sediment plumes, noise, light, etc. These impact categories **should be used in subsequent descriptions and evaluations of potential environmental impacts and Environmental Effects from the proposed operations.** (b) Descriptions of impact studies carried out during exploration (e.g., component testing and the resulting observations from the associated monitoring); (c) bis Descriptions of test mining studies undertaken prior to the application; (d) Descriptions of the results of any environmental risk assessments, which should be included as separate reports or appendices where appropriate; and (e) Descriptions of the methods applied to describe and quantify impact pathways and assessment.	*New para to align with section 8.2*
9.1 ter Description of impact pathways	New para to align with section 8.2 bis

The preferred approach for this template is to include for each impact pathway an overarching description of: (a) The source (a)ter The methods used to determine impacts (including the assumptions **and limitations** of any impact modelling undertaken); (a)bis The nature, spatial extent and temporal extent of potential impacts, including cumulative impacts; (b) Measures that will be taken to avoid, minimise or mitigate such impacts; and (c) The unavoidable (residual) impacts that will remain, **including their expected longevity**. The detail in this section is expected to be based on the scoping environmental risk assessment that will have identified the main impacts, and thus the elements that need to be emphasized in the environmental impact assessment.	
9.2.1 Existing uses	
9.2.1.1 Fisheries A description of potential impacts on fisheries occurring within the project area ~~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~~	We area supportive of removing the sub-paragraphs of 9.2.1.1, however the initial descriptive text should remain. ADDITION: Fisheries impacts need to be considered here given their inclusion in chapter 6.
~~9.2.1.2 Marine traA description of potential impacts on non-projectrelated marine traffic occurring within the project area, along with proposed management measures and a description of residual impa~~	We are unclear if this was meant to be deleted – or was accidently deleted along with the fisheries sub-paragraphs. Clarity is needed.
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., , other mineral Exploration or Exploitation projects).	
9.2.1bis Planned uses Describe the potential impacts on planned uses of the area for which information is publicly available (e.g. fisheries, maritime traffic, tourism, marine scientific research, submarine cables, area-based management tools).	

9.3 Sites of an archaeological or historical nature. Describe, as applicable, potential impacts to sites of archaeological or historical significance that are known to occur within the potential area of impact, along with proposed management measures and a description of residual impacts.	
9.4 Socioeconomic and sociocultural issues This section will provide a description of socioeconomic and sociocultural benefits or impacts, including any applicable social initiatives.	
~~**9.4 bis Gender Impact analysis Assess and analyse how the proposed operations may impact on gender roles and relationships.**~~	DELETION: This does not belong in an EIA, except where direct or indirect impacts can be tied back to proposed operations (included above). Where? In the project area? Sponsoring state? At sea ops? What are the timeframes? We request the proponent of this paragraph to elaborate on the intention here.
9.5 Summary of ~~existing~~ **socioeconomic**~~sociocultural~~ environment **Summarize key findings on potential impact and effects, management measures, residual effects, and any potential impacts and effects [to areas under any State's national jurisdiction].** A table may be a useful summary format **to pull together the above elements in a simple visual mode.** Potential cumulative effects should also be included.	
~~**[9bis. Assessment of Uncertainty**~~	
~~**9bis.1 Uncertainty Assessment Provide a detailed description and evaluation of any uncertainties in the assessments described in section 7, 8, and 9. This uncertainty assessment shall:**~~ ~~**(1) Identify any relevant areas of uncertainty and gaps in knowledge and their implications for the environmental impact assessment and its findings; and,**~~ ~~**(2)**~~ ~~**Describe the measures taken in the environmental impact assessment to reduce uncertainty in its findings to as low as reasonably practicable.]**~~	DELETION: Currently this suggests that the applicant should detail all uncertainties - which could be unending, given the deep sea environment and the measures taken to reduce all of these. This is impractical.
~~**9bis.2 Addressing Significant Uncertainty**~~ ~~**Where significant uncertainty exists despite the efforts described in 9bis.1(b), provide a detailed description of environmental monitoring and management measures for managing and reducing uncertainty during the proposed operations, to be incorporated into the Environmental Monitoring and Management Plan and describe how these will enable the applicant to ensure compliance with relevant Rules of the Authority.]**~~	CLARITY: It would be better to have an 'uncertainties' section in each of chapters 4-6 detailing MAJOR uncertainties, and in chapters 7-9 highlighting how those uncertainties impact the assessments and how they should feed through to EMMP.
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. Reference should be made to the ERCP. 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.	We suggest a reference to the ERCP is included.
10.1 Extreme weather For example: hurricanes/cyclones.	

10.2 Natural hazards For example: volcanic eruptions, seismic events.	
10.3 Accidental events For example: leakage or spillage of hazardous material, fires and explosions, and collisions, including potential loss of equipment	
11. Environmental management, monitoring and reporting	
Provide sufficient information to enable the Authority to anticipate possible environmental management, monitoring and reporting requirements for an environmental approval. Information listed include a description of the applicant's environmental management system and should reflect the proponent's environmental policy and the translation of that policy to meet the requirements of this section and previous sections during different stages of the project life (i.e., from construction to decommissioning and closure). The Environmental Management and Monitoring Plan is a separate report from the Environmental Impact Statement, but this could be a useful opportunity to highlight some of the key issues from the Statement that will be addressed in the full Environmental Management and Monitoring Plan. Information detailed in this section should include the headings set out below.	
11.1 Organizational structure and responsibilities	
This section should show how the Contractor's environmental team fits into its overall organizational structure. Responsibilities **and professional qualifications** of key personnel should be outlined. **Data should be disaggregated by gender.**	COMMENT: If needing disaggregation by gender, then should disaggregate by geography and age too (and such disaggregation would also need to be applied in the relevant sections under EMMP and EMS)
11.2 Environmental management system	
A full and agreed environmental management system shall exist at the time the Environmental Impact Statement is submitted. The applicant has to demonstrate that it will be capable of managing ~~all~~ **appropriate** relevant environmental questions, and outline the standards that will be considered and/or aligned with when developing the system for the project.	
11.3 Environmental Management and Monitoring Plan	
An Environmental Management and Monitoring Plan will be submitted as a separate document for the Authority's approval prior to the commencement of mining operations. This section should provide an overview of what the Plan is expected to entail. **With reference to** ~~This section should include, at a minimum~~, the headings set out below **and Annex VIII of the Exploitation Regulations of the Authority. Alternatively, the applicant may prefer to submit the draft Environmental Management and Monitoring Plan alongside this EIS and use this section to cross-refer.**	
11.3.1 Mitigation and management	
Summarize the **mitigation and management measures that will be taken, based on** ~~actions and commitments that have arisen from~~ the impact minimization and mitigation **analysis undertaken as part of the environmental impact assessment**.~~strategies~~.	
~~11.1.5 Monitoring plan~~ ~~Provide an overview of the envisaged monitoring programme (further detail will be provided in the Environmental Management and Monitoring Plan). Summarize the monitoring plan approach and programme.~~	DELETION: covered in 11.3
~~11.3.2.1 Approach~~	DELETION: covered in 11.3

~~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).~~	DELETION: covered in 11.3
11.3.3 Closure Plan A Closure Plan will be submitted as a separate document for the Authority's approval. However, this section should provide an overview of what the Closure Plan will entail, including decommissioning, continued monitoring and rehabilitation measures, if applicable. **Alternatively, the applicant may prefer to submit the draft Closure Plan alongside this EIS and use this section to cross-refer**.	
11.4 Reporting	
11.4.1 Monitoring Outline how the results of monitoring studies will be reported to the Authority.	
11.4.2 Incident reporting Outline how Incidents will be reported and managed.	
12 Product stewardship	
Provide a brief description of the intended use of the mineral-bearing ore once it leaves the Area. This description should also address how the Contractor will minimize health, safety, environmental, and socioeconomic effects of the intended product or products to meet~~ing of~~ international standards for environmental management, and should address the following potential impacts: (a) Energy and materials consumption; (b) Waste generation; (c) Toxic substances; (d) Air and water emissions. 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.	ADDITION: We have provided some amendments that benefits the clarity of the subparagraph.
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~~ sStakeholders.	NOTE: Spain provided new text for section 13 post-July Council.
13.1 Consultation methods Describe the mechanism(s) used to consult with different groups and how this aligns with any relevant consultation obligations **Regulations and Standards]**	
13.2 Stakeholders List any relevant sStakeholders that have been consulted and explain the process by which sStakeholders were identified.	
13.3 Public consultation and disclosure Provide a description of the goals and consultation workshops/meetings that occurred prior to the preparation of the report. Include a description of the concerns and comments identified by s**S**takeholders and how these will be addressed, and, if not, describe the reasons for that decision.	

13.4 Continuing consultation and disclosure Outline any further consultation with s**S**takeholders 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.~~ Include a glossary of terms, acronyms and abbreviations used throughout the document. The glossary should include definitions for and key terms defined in the regulations so as to ensure that users of the Environmental Impact Statement, including the decision-makers and relevant stakeholders, have a clear understanding of the intention behind the use of certain terms in the EIS. The glossary should be included in the table of contents for the EIS and referenced in the introduction section.	ALTERNATE: We propose an alternate para for section 14 to provide further clarity.
15 Study team	
Outline the people involved in carrying out the environmental impact assessment studies and in writing the Environmental Impact Statement. If independent scientists or other experts were involved in any of the work, they should be listed. The names, occupational qualifications and their role in the generation of the Environmental Impact Statement of such people should also be included. **Any conflict of interest must be identified, ~~reported~~ disclosed in detail in this section including the way it was and continues to be managed**	ADDITION: We have provided some slightly changed wording to the proposed additional sentence.
16 References	
~~Provide details of reference materials used in sourcing information or data used in the Environmental Impact Statement.~~ Evidence obtained from outside sources should be documented throughout the EIS, with the use of footnotes or other suitable reference mechanism. In addition, all sources used in preparation of the EIS (including those specifically referenced in the body of the document) should be listed in bibliography format, with full details of the source (including website addresses, if applicable). This enables users of the EIS to review the supporting documentation independently.	ALTERNATE: We propose an alternate paragraph for section 16.
17 Appendices	
The appendices section should include a list of all technical reports carried out for parts of the environmental impact assessment ~~and the Environmental Impact Statement~~ or that are used in support of any aspect of the environmental impact assessment (such as prior risk assessments or monitoring activities conducted as part of exploration contracts). Copies of these reports should be provided as appendices to the Environmental Impact Statement, with clear indications as to which section(s) the document is being provided to support.	ADDITION: We suggest some clarifications to the existing text