

**TEMPLATE FOR SUBMISSION OF TEXTUAL PROPOSALS DURING THE 28TH SESSION:
COUNCIL - PART I**

Please fill out one form for each textual proposal which your delegation(s) wish(es) to amend, add or delete and send to council@isa.org.jm.

1. Name of Working Group:

Informal Working Group on the protection and preservation of the marine environment

2. Name(s) of Delegation(s) making the proposal:

Federal Republic of Germany

3. Please indicate the relevant provision to which the textual proposal refers.

Annex IV - Environmental Impact Statement

Green text is in original draft; **blue text** indicates Germany's textual proposals

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

1. Preparation of an Environmental Impact Statement

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

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

~~(b) Provide information, [based on data from,] [as a general rule, a minimum of 15 years of] [monitoring,] in accordance with the relevant regulations, [applicable regional environmental management plan,] [requirements of regional environmental management plans,] and]Standards and [[taking into account the relevant]] Guidelines [and the relevant applicable regional environmental management plan,] [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.]~~

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

2. Template for Environmental Impact Statement

~~{The [required] recommended format and~~ contents **and 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, Best Environmental Practices, and Best Available Techniques, and Good Industry Practice on which the Authority can base its decision, and any subsequent approval that may be granted. Further detail for each section is provided following the overview. }

This document is a template and does not provide details of methodology or thresholds that may be resource- and site-specific. These methodologies and thresholds may also change over time in accordance with, for example, development of new technologies, [or] new scientific data [or new knowledge], and will 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 project, its objectives, if any, a description of alternatives analysed, and a justification of the alternative chosen;

Alt (a)bis A description of alternatives analyzed;

(b) Anticipated Economic, financial and other benefits to be derived from the project, and the beneficiaries for each;

(c) A description of anticipated and cumulative, risks and impacts of the activity, as assessed by experts, (including, but not limited to, oceanographic, geological, biological, socioeconomic and sociocultural) including the expected spatial extent and duration of impacts and cumulative impacts in relation to the identified baselines, and the expected recovery rates of the system to its original state;

(d) Measures to [minimize and] [[to]] mitigate anticipated and cumulative environmental impacts [support recovery of the marine environment from impacts,] and a description of any anticipated and cumulative residual impacts, that may occur despite Mitigation, noting how the mitigation hierarchy is being employed in assessing impacts;

[[Alt (d bis) A description of any residual impacts;]]

[[Alt (d ter) Expected recovery rate of the marine environment impacted;]]

(e) Linkages with development of the Environmental Monitoring and Management Plan and the Closure Plan; [and]

[[e)bis Conformity with the Authority's global environmental policy and strategy and the applicable regional environmental management plan; and]]

(f) Consultation undertaken with other parties and Stakeholders.

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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 and regional agreements applicable to the

operation, (whether directly or via incorporation into domestic laws cited in section 2.2 above), such as relevant conventions, including annexes and Guidelines, of the International Maritime Organization related to protection of the environment, biodiversity and safety. These include the International Convention for the Safety of Life at Sea (SOLAS), the International Convention for the Prevention of Pollution from Ships (MARPOL), the Ballast Water Management Convention (BWMC), the International Convention on the Control of Harmful Anti-fouling Systems on Ships and the 1996 Protocol thereof and the Convention on Biological Diversity and the Convention on Migratory Species of Wild Animals [and the international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction \(BBNJ\)](#); and describe how the proposed operation will comply with them.

...

3.3.1 Project scale

Provide an overview of the spatial (horizontal and vertical) and temporal (seasonal and annual) scales of the mining operation, including volumes, depth of penetration into the seabed. Provide an overview of physical, chemical, geological and oceanographic properties of material to be recovered, dewatered 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 directly impacted [over time, including the water column and seafloor beyond the contract area, if applicable](#), as well as the likely extent of any secondary impacts (e.g., sediment plumes, noise, light), which will be discussed in greater detail later.

3.3.2 Mining Equipment

Describe any equipment expected [to qualify as Best Available Technology](#) for mining and support operations (e.g., mining vessels/platforms, supply vessels, barges), including the anticipated frequency of vessel movements for these activities. Also, including a description of any specific technologies developed to reduce impacts should be included. Provide details of [\[methodologies of exploitation \(drilling, dredging, excavating, disposing of waste, constructing and operating or maintaining installations, pipelines and other devices\) and give specifications of\]](#) the technologies to be employed [in relation to Best Environmental Practice](#), including relevant diagrams and drawings, that address: the Mining Workplan, timelines and the general mining sequence, the technologies to be employed to recover the resource from the seabed, the depth of penetration into the seabed the specific technologies developed to reduce the direct impact of mining activities (e.g. noise, light, plumes) and other details of the mining activities 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 [in relation to Best Environmental Practice](#), and any methods related to the trans-shipment of the mineral-bearing ore, including transfers at sea. Also, a description of any specific technologies developed to reduce impacts should be included[, [highlighting at which levels, in the water column \(generation of plume at the seafloor, turbidity in the water column, addition of bottom sediments to the surface waters\) resulting impacts to the marine ecosystem, may be mitigated during the different phases for collection, separation, lifting, transportation, processing, and discharge of effluents.](#)]

3.3.4 On-site processing

Provide a [\[detailed\]](#) description of the [\[plan for\]](#) processing of the mineralized material that will occur within or above the Area [in relation to Best Environmental Practice](#), 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 seawater/fines [\[and include the spatial layout of the activities over time which will provide a comprehensive map of the disturbance area from which to assess harm to the Marine Environment\]](#). 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, including the specific technologies and methods to be adopted to reduce harmful impacts of such disposal to the marine environment. [The description should acknowledge respective ISA Standards and Guidelines as well as other applicable legal frameworks.](#) Describe the

management of shipboard wastes to be transported to shore-based disposal facilities, including the handling and management of hazardous materials should also be described, together with a description of the nature of such material and its transportation, storage and disposal. Also, a description of any specific technologies developed to reduce impacts should be included.

...

3.5 Construction and operating standards

Outline the design codes or certification standards to which the equipment will be or has been built, as well as the operating standards that will be applied to mining operations, [including those for Best Available Technology and Best Environmental Practice issued by ISA](#). This section should include subsections such as those set out below.

...

3.6 Decommissioning and closure

Describe the steps that will occur when the mining operation is completed or in the event of an emergency, including the decommissioning [and removal](#) of offshore infrastructure or the temporary suspension of mining activities, under a Closure Plan.

...

3.7bis Environmental management measures to mitigate impacts

Provide a summary description of reasonable measures taken to mitigate adverse impacts to the physical, chemical, geological, biological[, [and](#)] socioeconomic[, [and sociocultural](#)] environment.

...

Section 3bis1 Summary of Scoping results, including of the risk assessment process

Provide a brief overview of the results of the scoping exercise including with regard to the sufficiency of the scientific baseline data collected during exploration to support a robust Environmental Impact Assessment. (New proposal)

Section 3bis2 Methodology for Description of the Marine Environment and Assessment of Impacts and Environmental Effects

3bis.1 Studies completed

Describe any prior research/Exploration that could provide relevant information for this Environmental Impact Statement and future activities. These should be detailed in the appendices.

3bis.2 Methodology for Collecting Baseline Data

For each of the baseline descriptions of the Marine Environment in sections 4 and 5 and socioeconomic [[and sociocultural](#)] environment in section 6, describe the methodology for collecting [and analysing](#) baseline data, including:

1. spatial and temporal extent of sampling;
2. spatial and temporal frequency of sampling;
3. gear used for sampling and any modifications or calibrations conducted to the gear;

4. results of power analysis;
5. limitations of sampling and how this may impact certainty of impact assessments; and
6. any cooperation with other research programmes in the Area, such as with the ISA, States, other Contractors, or non-governmental organizations. Highlight any deviations from baseline data collection requirements provided in relevant Standards and Guidelines, and the Regional Environmental Management Plan.

Assess the sufficiency of baseline data collected and compiled in view of the aim to establish mining-related environmental change in relation to natural variability.

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

3bis.3 Methodology for Summarizing Baseline Data

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

- (a) a description and justification of transformations performed to the data and analyses used to summarize the data;
- (b) a list of program(s) used to analyze results;
- (c) a list of methods to determine species identification and life history; and,
- (d) any limitations associated with the results of the analysis.

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

For each assessment of potential environmental impacts and Environmental Effects in sections 7 and 8 and socioeconomic [and sociocultural] environment in section 9, describe the methodology used to assess impacts and Environmental Effects from proposed operations and alternatives considered in section 3.7. in line with the applicable regulations and standards and taking into account the applicable guidelines. Data, predictive models, and computer code used to analyse and provide a description of the Marine Environment shall be included in the annexures to the

Environmental Impact Statement or, if the data, model, and/or code has been previously submitted to the Authority, the applicant may provide a link to the Authority's database where the data and/or code is stored or other location where such information has been made available online. Each description of methodology used to assess impacts shall include:

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

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

4. Description of the existing physiochemical and geological oceanography

Give a detailed account of knowledge of the oceanographic (physical, chemical and geological) conditions at each mining site and impact area as well as Reference Zones, which should include information from a thorough literature review as well as from on-site studies in accordance with the Regulations and applicable Standard and taking into account the relevant Guidelines to be specified. The Guidelines on baseline data collection, as updated from time to time by the Commission, shall guide the drafting of this section by providing information on the minimum amount of detail required for an acceptable baseline description. The account will provide the baseline description of the oceanographic conditions, including physical, chemical and geological oceanographic setting, including its spatial and temporal variability and temporal trends and conditions, against which impacts will be measured and assessed. The detail in this section is based on the prior environmental risk

assessment [carried out in line with the respective standard and guideline](#), that will have identified the main impacts, and thus the [priority](#) elements that need to be ~~considered~~[measured](#) and assessed in the environmental impact assessment.

4.1 Key messages

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

4.2 Regional overview

Describe the general baseline environmental conditions of the site and impact area, in accordance with the [Standard and Guideline](#) on baseline data collection, including but not limited to the physical, chemical and geological oceanographic setting as well as known or suspected Underwater Cultural Heritage within a broader regional context and [\[taking into account\] \[~~in accordance with\]~~](#) the applicable Regional Environmental Management Plan. This should be a brief section that includes a map. While intangible cultural heritage may not lend itself to a map, known intangible human connections to the area should also be acknowledged. A more detailed site-specific and impact area description will be provided in accordance with the sections below.

4.3 Studies completed

Describe any prior research/Exploration studies (including methods used for completing the studies based on Best Available [Science using Best Available](#) Techniques, including surveys of the seabed for Underwater Cultural Heritage) that could provide relevant information for this Environmental Impact Statement. This research should be detailed in the appendices or in reports attached to the appendices.

4.4 Meteorology and air quality

Provide a general overview of the local meteorology (e.g., wind directions and speeds, seasonal patterns and variability). Provide description of air quality, including chemical characteristics. This section may be most relevant to surface operations [and the general risk assessment](#).

4.5 Geological properties and habitat classification

Provide a baseline description of the nature and extent of the mineral resource and bedrock within a broader geological context. Describe the geological petrographic and geomorphological setting of the [mining sites, the impact areas, and the designated preservation reference zones \(PRZs\)](#), including sea floor mapping (bathymetry and backscatter), high-resolution sub-bottom profiling, and sedimentation rates, and refer to submarine features such as hydrothermal vents, seamounts abyssal hills and canyons as appropriate. Provide habitat classification using an appropriate system as prescribed in the relevant Standard [\[and taking into consideration the\] \[or\]](#) Regional Environmental Management Plan.

4.6 Oceanographic setting

Provide a description of oceanographic aspects including but not limited to thermohaline conditions, optical properties and turbidity, currents regime, tides, waves, turbulence, and oceanographic fronts, eddies and climate change projections, including spatial variation at and above the site. Seasonal [and longer-term](#) variability is an important element. Detail is required on the regional setting, as well as the specific mining site and impact areas, [and the designated Preservation Reference Zones \(PRZs\)](#), and should include changes in physical conditions and processes according to depth and horizontal distance from the proposed mine site to boundaries of the Impact Area. [\[For activities conducted in areas of seamount chains, hydrothermal vent fields, trenches and canyons or other areas with complex bathymetry, oceanographic currents will be influence by topographic forcing and will require a more detailed oceanographic assessment, including targeted sampling programs, to determine the impact area.\]](#) Climate change projections should also be included.

4.7 Chemical oceanographic setting

Provide a description of water mass characteristics at the [mining sites, the impact areas, and the designated Preservation Reference Zones \(PRZs\)](#), and above the sites 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 [mining sites, the impact areas, and the designated Preservation Reference Zones \(PRZs\)](#), ~~above the site~~ throughout the water column and horizontally from the proposed mine site, that includes nutrients, particle loads, temperature, oxygen, salinity, density, particulate and dissolved organic matter, pH, chemical composition, including[, but

not limited to] 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.

4.8 Seabed substrate and sub-seabed characteristics

Provide a description of seabed substrate and sub-seabed composition (to benthic subsurface layers) of the wider mine sites, the impact areas, and the designated Preservation Reference Zones (PRZs), including, but not limited to, physical, chemical, geological and oceanographic properties, specific gravity, bulk density, sediment composition, physical and chemical composition of pore-water and pore-water profiles, grain size, sediment mechanics, dissolved and particulate organic and inorganic carbon, nutrients, carbonates, 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 on Baseline Information and the applicable [as indicated in the] [or] Regional Environmental Management Plan.

New 4.8bis Rare or sensitive habitats

Identify and describe the physical and chemical characteristics of rare or sensitive habitats in line with the respective international guidelines (FAO 2009, Azores Criteria 2010) and policy decisions (, UN, CBD ...) such as hydrothermal vents, ridges, seamounts, as well as oceanographic fronts or eddies, abyss hills and canyons and other geological and oceanographic features.

4.9 Natural hazards

Provide a description and trend analysis of variation related to applicable potential natural hazards for the site, including, but not limited to, volcanism, seismic activity, cyclone/hurricane, tsunamis, climate-related oceanographic changes and variability etc. and how these may develop in future, e.g. as a consequence of climate change.

4.10 Noise and light

Provide a description of local ambient noise and light at the seabed, ~~in~~throughout the water column and at the surface, including, but not limited to, light intensity, backscatter, and attenuation, bioluminescence, and spatial (horizontal and vertical) and temporal (seasonal and interannual) variability in these characteristics, indicating pertinence to fauna where known.

4.11 Greenhouse gas emissions ~~and climate change~~

Provide a description of the level of gas and fluid emissions from both natural sources and anthropogenic activities in the Area, as well as those affecting sea floor and water-column chemistry. ~~{The climate mitigation functions and services of the ocean should also be described (including CO2 uptake and sequestration, or nutrient cycling).}~~

New 4.11bis Climate Change

Description of the expected changes in physical and chemical oceanographic conditions and processes in the broader area of the mine site due to climate change.

4.12 Summary of the existing physicochemical environment

Summarize key findings and include notes on special considerations for rare or sensitive habitats hydrothermal vents, ridges, seamounts and oceanographic fronts or eddies, abyss 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 than the key messages section.

5. Description of the existing biological environment

Give a detailed account of knowledge of the biological communities' composition and structure and ecosystem functions in the proposed mining sites and impact areas, and the designated Preservation Reference Zones (PRZs), including information from a thorough literature review and baseline data collected from on-site campaigns, in accordance with the Regulations and applicable Standard and taking into account the relevant Guidelines. The description of the site should be divided by depth regime (surface, midwater from 200m depth to 50m above bottom and benthic including benthopelagic, 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 [Standard Guidelines](#) on baseline [environmental](#) 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 identified, and thus the elements that need to be measured and assessed in the environmental impact assessment.

5.1 Key messages

Provide key messages (overview of main findings, covered in six or fewer bullet points).

5.2 Regional overview

Provide regional context for the baseline environmental conditions of the mining site and impact areas, [and the designated Preservation Reference Zones \(PRZs\)](#), including but not limited to the general biological setting, [\[taking into account\]](#) in accordance with the applicable Regional Environmental Management Plan. This should be a brief section that includes a [habitat classification](#) map. A more detailed [description of the mining site, the Preservation Reference Zones \(PRZs\) specific](#) and impact area description will be provided in accordance with the sections below.

5.3 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 activity. This research should be detailed in the appendices, and the environmental reference baseline data collected for the Authority, as outlined in the exploration contract conditions, should accompany the Environmental Impact Statement.

5.4 Biological environment

Provide a description of biological properties in the [region and the mine site, with special focus on the designated preservation reference zones PRZ and the total Impact Area](#), including diversity, abundance, biomass, life history parameters, relevant behaviour, including feeding rates, community-level analyses, connectivity, trophic relationships, resilience, ecosystem functions and services as well as seasonality and spatial (horizontal and vertical) and temporal variability. Any work on ecosystem models and appropriate ecosystem indicators, etc., should also be presented here. This section should span the size range from megafauna to microbial communities [and shall be guided by the variables given by the Standard for the establishment of baseline environmental data](#).

The description of the fauna [and its food web](#) 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 of the taxonomic/ecological groups (e.g., plankton, fish, marine mammals, marine turtles, benthic microbial invertebrates, demersal scavengers) the Authority's Guidelines.

The description should include the size [and habitat](#) distributions of the fauna and their life history stages (such as larval and juvenile stages, which differ from the adult stage) [as well as trophic pathways](#). Discussions of species [and communities](#) 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. 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.

[The climate mitigation functions and services of the ocean shall also be described \(including CO2 uptake and sequestration, or nutrient cycling\).](#)

[\(Moved up from next Section\)](#) Describe the biological communities and ecosystem functions, structured by depth ranges in accordance with relevant Standards and [\[taking into account\]](#) Regional Environmental Management Plan, which may encompass:

1. surface seawater
2. epipelagic zone (< 200 metres)
3. mesopelagic zone (200-1000 metres),
4. bathypelagic zone (1000 - 4000 metres),
5. abyssopelagic zone (4000 - 6000 metres),
6. hadalpelagic zone (> 6000 meters),

7. demersal zone (part of the water column near to and significantly affected by the seabed), and
8. benthic zone.

The description should evaluate the temporal and spatial variability in distribution and composition.

5.4.1 Surface

Describe the biological communities from the surface to a depth of 200 metres, including microbes plankton (phytoplankton and zooplankton, **microbial plankton and organic matter**), **micro-nekton**, surface/near-surface fish such as tuna, and seabirds, marine turtles and marine mammals. Address factors provided in 5.4, as well as spatial and temporal variability **and trends**.

~~Alt. 5.4.1 Surface~~

~~Describe the biological communities and ecosystem functions, structured by depth ranges in accordance with relevant Standards and [taking into account] Regional Environmental Management Plan, which may encompass:~~

- ~~1. surface seawater~~
- ~~2. epipelagic zone (< 200 metres)~~
- ~~3. mesopelagic zone (200–1000 metres),~~
- ~~4. bathypelagic zone (1000–4000 metres),~~
- ~~5. abyssopelagic zone (4000–6000 metres),~~
- ~~6. hadalpelagic zone (> 6000 meters),~~
- ~~7. demersal zone (part of the water column near to and significantly affected by the seabed), and~~
- ~~8. benthic zone.~~

~~The description should evaluate the temporal and spatial variability in distribution and composition.~~

5.4.2 Midwater

Describe the pelagic ~~communities~~**fauna** and their habitat in the open water from a depth of 200 metres down to 50 metres above the sea floor, and include **particulate organic matter**, **microbes**, zooplankton, nekton, mesopelagic, bathypelagic and abyssopelagic fishes and deep-diving mammals. Address factors provided in 5.4, as well as spatial and temporal variability.

5.4.3 Benthic

Describe the benthic microbial, invertebrate and fish communities, including infauna, epifauna, **benthopelagic fauna**, and demersal fish **and scavengers**, up to an altitude of 50 metres above the sea floor. This should include considerations of species richness, biodiversity, faunal densities, community structures and connectivity, etc. Ecosystem functions, such as Bioturbation, habitat **and food** supply and elemental cycling etc. should also be covered in this section. Address factors provided in 5.4, as well as spatial and temporal variability.

~~5.4.4 Ecosystem/community-level description~~

~~Summarize existing community and ecosystem studies that integrate elements of the above sections. The summary should consider productivity, habitat heterogeneity, food web complexity, carbon and nutrient cycling, benthopelagic coupling, biodiversity, succession, stability, the potential toxicity effects of plumes, bioavailability of toxins, trophic relationships, ecosystem functioning, benthic-pelagic couplings, ecosystem connectivity, early life history stages, recruitment and behavioural information. Name any unique, rare and threatened elements, outline which habitats and communities can be considered representative and their distribution, indicate existence and connectivity to the same habitats and communities outside the mine site and the potential impact zone. (Preference for Alt version)~~

Alt. 5.4.4 Ecosystem/community-level description

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 benthopelagic 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.

New 5.5 Rare or sensitive habitats and species

Identify and describe the biological characteristics of rare or sensitive habitats and species potentially affected by the planned mining operation. The identification (as in 4.8bis) shall be guided by the respective international guidelines (FAO 2009, Azores Criteria 2010) and policy decisions (UNGA, CBD) and include features such as hydrothermal vents, ridges, seamounts, as well as oceanographic fronts or eddies, abyss hills and canyons and other geological and oceanographic features.

Identify any unique, rare and threatened elements, outline which habitats and communities can be considered representative and their distribution, indicate existence and connectivity to the same habitats and communities outside the mine site and the potential impact zone.

5.5 Summary of the existing biological environment

Summarize the findings focusing on key ecosystems and species determined above. It is envisaged that this summary will be up to one page in length.

6. Description of the existing human activities / the socioeconomic and sociocultural environment

This section should describe the socioeconomic and sociocultural environment aspects and **potential** impacts of the project **based** on **the existing** human activities. 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.

6.1 Key messages

Provide key messages (overview of main findings, covered in six or fewer bullet points).

6.2 Existing uses

6.2.1 Fisheries

Relevant fisheries shall be described here to further assess the socioeconomic impacts. This should include description of areas of significance for **migratory** fish stocks, such as spawning grounds, nursery areas or feeding sites. Any closed fishery areas such as VME closures, MPAs, or voluntary closures must be named and taken into consideration. Provide a 'heat map' showing important fishery areas in relation to proposed operations and note any areas of interaction or cumulative impact.

...

6.2.4 Marine scientific research

Outline the **ongoing** current scientific research programmes taking place in the area, studying the essence of phenomena and processes occurring in the marine environment and the interrelations between them.

6.2.5 Sociocultural uses

List [**human activities in**] **sociocultural values and 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 as well as known or suspected Underwater Cultural Heritage).

...

7. Assessment of impacts on the physical, chemical and geological 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 and geological environment identified in section 4. This should consider the entire lifespan of the project, i.e. construction/development (precommissioning-) of the mine site, operational and decommissioning phases, and following Closure of the site. The potential for accidental events and natural hazards. The detail in this section is expected to be based on a prior environmental risk assessment prepared, reviewed, and revised in accordance with [Annex IVbis \(h\) Regulation 47ter and respective Standard and Guideline for Environmental Impact Assessment \(chapter III Scoping, D\)](#). It should include for each component a description of:

- (a) The source (action, temporal and spatial duration) and nature of the disturbance;
- (a)bis The nature, duration and extent of any actual or potential impact, including cumulative effects and taking into account ecological and biologically significant areas;
- (a)ter The methods used to determine impacts (including the assumptions and limitations of any impact modelling or other analysis undertaken);
- (b) Measures that will be taken to prevent, mitigate and manage such impacts; and
- (c) The unavoidable residual impacts that will remain, including their expected longevity.
- (d) The extent to which any potential impacts and Environmental Effects may occur in areas under a State's national jurisdiction.

The detail in this section is expected to be based on the environmental risk assessment [carried out according to the relevant regulations, Standards and Guidelines](#) that will have identified the main impacts, and thus the elements that need to be emphasized in the environmental impact assessment.

...

7.9 Noise and light

Provide a description of the expected emissions of noise and light from the proposed operations. ~~and any potential environmental effects, especially any impacts of noise on avoidance, masking and availability of prey (e.g., on marine mammals) and fish. Provide a description of the measures that will be taken to ensure compliance with applicable environmental quality objectives and quantitative thresholds for noise and light levels for relevant fauna, in accordance with these regulations and the applicable Standard, and taking into account the relevant Guidelines.~~ (Suggestion to move to Section 8)

7.10 Greenhouse gas emissions and climate change

Provide an assessment of gas and chemical emissions from proposed operations, relative to emissions both natural and anthropogenic activities. Subsections should include estimated greenhouse gas emissions and a greenhouse gas emissions assessment where appropriate. ~~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.)~~ (Suggestion to move to Section 8)

7.13 Cumulative impacts

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

7.13.1 Proposed operations impacts

Cumulative within the mining site and Impact Area of the mining proposed herein.

7.13.2 Regional operation impacts

Cumulative between activities, actions, or natural phenomena, 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, 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. The table should include a column outlining the measures that will be taken to address potential environmental impacts and manage residual effects and ensure long-term site compliance with the environmental quality objectives, quantitative thresholds, and indicators in accordance with these regulations and the applicable Standard and taking into account the relevant Guidelines.

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

Provide a detailed description and evaluation of potential impacts and Environmental Effects of the proposed operation and alternatives considered in section 3.7 to the biological environment components identified in section 5 in the mine site and the Impact Areas. Consider impacts and effects that could happen during the entire lifespan of the project i.e. construction/development (pre-commissioning), operational and decommissioning phases and following Closure of the site. The potential for accidental events and natural hazards should be considered. The detail in this section is expected to be based on a prior environmental risk assessment prepared, reviewed, and revised in accordance with [Regulation 47ter][Annex IVbis(h)] and respective Standards and Guidelines for Environmental Impact Assessment Process. The ~~description~~analysis shall be structured by the depth ranges described in section 5 and shall for each component, provide a description of:

- (a) The source (action, temporal and spatial duration) and nature of the disturbance;
- (a)bis The nature and extent (temporal and spatial) of any actual or potential impact, including cumulative effects;
- (a)ter The methods used to determine impacts (including the assumptions and limitations of any impact modelling or other analyses undertaken);
- (b) Measures that will be taken to prevent, mitigate and manage such impacts with reference to the submitted Environmental Management and Monitoring Plan; and
- (c) The unavoidable residual impacts that will remain, including their significance and expected longevity.
- (d) An evaluation of the impacts and effects against the applicable environmental goals and objectives, ~~and~~ indicators ~~and thresholds~~ [as identified in the ~~in~~ relevant environmental standards and Guidelines and in the applicable Regional Environmental Management Plan.
- (e) The extent to which any potential impacts and Environmental Effects may occur in areas ~~beyond the contract area or~~ under a State's national jurisdiction.

The detail in this section is expected to be based on the ~~scoping~~ environmental risk assessment, ~~carried out according to the relevant regulations, Standards and Guidance~~ that will have identified the main impacts, and thus the elements that need to be emphasized in the environmental impact assessment.

...

8.2 Description of potential impact categories

Provide an overview and description of the categories of potential impacts caused by the ~~hazards arising from~~

the proposed mining operation and alternatives considered. This should introduce the major types of impacts and their effects [on the biotic environment](#), such as habitat removal, the crushing of animals, the creation of sediment plumes, noise and light, etc. and be referred to in subsequent descriptions and evaluations of potential environmental impacts and Environmental Effects from the [hazards posed by the](#) proposed operation and alternatives considered. A description should be included of any lessons learned from activities during the exploratory phase of the programme (e.g., mining system component tests). Key elements that need to be included are:

(a) Description of the major types of potential impacts, such as habitat removal, the biological effects of sediment plumes and dewatering 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);

(b bis) Descriptions of test mining studies undertaken prior to the application; Descriptions of the results of any environmental risk assessments, which should be included as separate reports or appendices where appropriate; and

(d) Descriptions of the methods applied to describe and quantify impact pathways and assessment [in line with the relevant Standard and Guideline, i.e. EIA Guideline](#).

...

8.2 ter Receptors and impacts

Receptors for which this must be done include:

(a) Microbial communities

(b) Phytoplankton [/zooplankton/nekton](#)

[\(b\)bis zooplankton and micronekton](#)

[\(b\)ter nekton](#)

[\(b\)quart benthopelagic fauna, including scavengers](#)

(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 zooplank

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.

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

8.6.1.1 Noise and light

Provide a description of the expected emissions of noise and light from the proposed operations and any potential environmental effects, especially any impacts of noise on avoidance, masking and availability of prey (e.g., on marine mammals) and fish. Provide a description of the measures that will be taken to ensure compliance with applicable environmental quality objectives and quantitative thresholds for noise and light levels for relevant fauna, in accordance with these regulations and the applicable Standard, and taking into account the relevant Guidelines. (Moved from Section 7)

8.6.1.2 Greenhouse gas emissions and climate change

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.) (Moved from Section 7)

8.6.2 Environmental management measures to mitigate impacts

8.7 Cumulative effects

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 including existing uses considered in the Assessment and described in Section 9 of the Environmental Impact Statement as well as an evaluation of the resulting cumulative effects to the ecological balance of the marine environment, including the spatial and temporal extent of such effects. Describe how spatial and temporal cumulation will differ between faunal groups and different habitats.

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

8.7.1 Proposed operations effects

Cumulative effects within the scope of the [site and Impact Area of the mining](#) proposed herein.

8.7.2 Regional operation effects

Cumulative effects between activities [to be analysed by the Secretariat according to the REMPs, 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. The table should include a column outlining the measures that will be taken to address potential environmental impacts and residual effects and ensure long-term site compliance with the environmental quality objectives, quantitative thresholds, and indicators in accordance with these regulations and the applicable Standard and taking into account the relevant Guidelines.

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

...

9.2 Impact identification

9.2.1 Impacts on existing human uses

For each of the following marine uses, describe:

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

...

~~9.2.1.5bis~~ 9.2.2 Impacts on Sociocultural values and uses

A description of potential impacts and issues to be addressed pertaining to sociocultural uses of the area (e.g., traditional navigation routes, migratory paths of culturally significant marine species, sacred sites and waters associated with ritual or ceremonial activities of Indigenous Peoples and local communities), along with proposed management measures and a description of residual impacts.

~~9.2.1.5ter~~ 9.2.3 Impacts on Ecosystem Functions and Services

A description of potential impacts of the operation on any ecosystem [functions and services](#), for example, carbon burial and sequestration, [taking into account the relevant Guidance.](#)

~~9.2.1.6~~ 9.2.4 Other impacts

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

~~9.2.1bis~~ 9.2.5 Impacts on 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).

9.2.23 Impacts on Area-based management tools

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

9.34 Impacts on Sites of an archaeological or historical nature

Describe, as applicable, potential impacts to sites of archaeological, paleontological 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 Gender Impact analysis

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

9.5 Socioeconomic and socio-cultural issues

~~This section will highlight and provide a description of socioeconomic and socio-cultural benefits or impacts, including any applicable social initiatives (Duplication with Section 9.2.2)~~

...

135. Consultation

Consultations shall be inclusive, transparent and open to all relevant stakeholders, including States, global, regional, subregional and sectoral bodies, as well as civil society, the scientific community, indigenous peoples and local communities.

135.1 Consultation methods

Provide a description of the nature and extent, participation and outcomes of consultation(s) that have taken place with relevant Stakeholders, and how their **substantive and relevant** comments have been addressed in the Environmental Impact Assessment.

This includes describing the mechanism(s) **and criteria** used to consult with different groups and how this aligns with the relevant Standards and Guidelines, also incorporating criteria for Preservation Reference Zones and Impact Reference zones.

...

135.3bis Commission consultation

Summarize the Legal and Technical Commission's recommendations on the Scoping Report and proposed Terms of Reference for the applicant's environmental impact assessment submitted to the Commission, and justification for any deviation either from those submitted Terms of Reference, or from the Commission's recommendations. ~~[If the Legal and Technical Commission has not issued a recommendation concerning the Scoping Report and proposed Terms of Reference for the applicant's environmental impact assessment, then the applicant is to summarize efforts taken to consult with the Legal and Technical Commission and any response received.]~~

135.3 ter Stakeholder and coastal State Consultation

Describe 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. **The summary should be based on the detailed response of the applicant to each consulted party and be available for review.**

...

157. 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. [Any remuneration should be mentioned](#). The names, [current and validated contact information,] occupational qualifications and their role in the generation of the Environmental Impact Statement of such people should also be included. [A statement that those individuals so named concur with the content of the report should be included.] Any conflict of interest must be identified, disclosed in detail in this section including the way it was and continues to be managed.

...

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

- GER thanks for many improvements as suggested by the facilitator.
- In general, as proposed by the intersessional group on EIA provisions in July, most of the content of Annex IV should be placed as a Standard on the assessment of environmental impacts. The here outlined content should be treated as requirements for the EIA – a mere form for the EIS will be based on this and should also be developed as a standard. The advantage of a Standard vs. an Annex to the Regulations is that it can more easily be revised than the regulations.
- Para. 3.7bis would merit from a section of its own, e.g. following the three assessment chapters as 9quart in the proposed structure.
- We would seek clarification where the risk assessment of the Scoping phase comes in, e.g. in in Para 3bis.4?
- In Sect. 3bis.4 it should be clarified that the ‘competent independent experts’ should not be paid by the Contractors.
- Sect. 4.5: So far, habitat classification is not specified and a ‘Standard’ for habitat classification does not yet exist.
- For Sect. 5.4.4 we support the proposed ALT version over the original.
- We suggest to transfer the final sentence of Section 4.11 (“*The climate mitigation functions and services of the ocean should also be described (including CO2 update and sequestration, or nutrient cycling).*”) to section 5 under biology.
- Section 8.1bis is identical to the identification of hazards in the Risk Assessment process (see EIA guideline in section III D).