

**Appendix II Contributions from Individual Members of the IWG on the
Original GER/BEL/CHN/GER Joint Proposal (received in
November 2025)**

- 1) Canada
- 2) Japan
- 3) Norway
- 4) Switzerland
- 5) United Kingdom
- 6) Vanuatu
- 7) The Pew Charitable Trust
- 8) Contractors (GSR, NORI, GM)

1) Canada

Our inquiries generally relate to how Contractors would move from the pilot mining phase to the Commercial Production phase as well as the interplay between pilot mining and the commencement of commercial production as outlined in DR 27 and the associated Draft Standard:

Firstly, would appreciate clarifying on whether pilot mining is to be conducted after Plan of Work for Exploitation is submitted and approved.

- Under the proposed DR 48 ter. Alt.2. , paragraph 2 states that “a Contractor shall conduct “Pilot Mining” before starting any Commercial Production under an Exploitation Contract.” But paragraph 5 goes on to “Pilot Mining requires a prior approval by the Commission and Council.” It is not clear if pilot mining activities must specifically be approved after a plan of work has been approved but before activities actually begin.
- Secondly, in terms of process timeline, we wonder if there is a prescribed or recommended duration for the pilot mining phase in order to validate the operation of the integrated system?
 - From what we can tell, the timeline appears open-ended. Moreover, there is also a requirement for the Contractor to prepare a Pilot Mining Report for submission to the Commission’s consideration and subsequent recommendation to the Council. We imagine that these reviews and decisions will be subject to the regular meeting schedule of these organs – which may or may not align with the Contractor’s activities. If the report is not approved, what would be the process?
- Third, we would also request more detail on the rationale for paragraph 7 of the proposal that any gains from the recovery of mineral resources during the Pilot Mining Phase would need to be paid to the benefit-sharing mechanism?
 - If contractors are unable to generate any income during the Pilot Mining Phase, which as we mentioned earlier appears to be open-ended, this may result in unequal treatment among contractors, and would be contrary to provisions under Article 13(c) of UNCLOS. This is because Contractors which are state-owned may have a greater ability to operate without revenue, while the viability of commercial contractors will be more dependent on revenue coming in.
- Finally, the Pilot Mining Phase is clearly related to the draft definition for the Commencement of Commercial Production, which is currently included in DR 27. Currently, the proposed definition expresses commencement of commercial production in terms of a certain % of production capacity sustained over a certain number of consecutive days. With a pilot mining phase, we would likely need to set the parameters of the definition at lower levels since the assumption is that significant integrated system testing would have already occurred prior to commercial

production. Regardless, the two topics are linked and should be considered in conjunction.

Our view is that we will need to take the above considerations into account.

2) Japan

Regulation 7, paragraph 3.bis (d)bis:

A Test Mining Report with all information obtained from testing mining activities conducted during Exploration¹; study prepared in accordance with Regulation 48 ter. In cases where an applicant utilizes [mature] [demonstrated] mining technology that has been internationally validated, there shall be no requirement to conduct Test Mining. Instead, the applicant shall provide supporting materials in relation to the [mature] [demonstrated] mining technology when submitting the application.

Regulation 11:

To replace throughout the regulation: "Test Mining study" with "Test Mining Report".

Regulation 12, paragraph 4:

Any previous operating record of the applicant, including in relation to Exploitation activities within other jurisdictions, as well as the applicant's performance during the Exploration stage, including the quality of annual reports and baseline data, and ~~results of test Exploitation activities~~ the Test Mining Report.

Regulation 13:

To supplement paragraph 9 with a new subparagraph (e):

(e) Whether the Test Mining Report is in accordance with the applicable requirements and demonstrates that the test mining activities:

(i) Support the information provided in the present application for the approval of a Plan of Work for Exploitation;

(ii) Did not cause harmful effects on the Marine Environment; and

(iii) Were conducted under appropriate technical, spatial and temporal conditions, in accordance with any applicable Recommendation from the Commission;

Regulation 25, paragraph 1:

At least 12 months prior to the proposed commencement of Commercial Production ~~in a Mining Area~~ [Sustained Large-scale Recovery Operations], the Contractor shall provide to the Secretary-General a Feasibility Study prepared in accordance with [Annex ~~IX~~] and Good Industry Practice, and the applicable Standard, taking into ~~consideration~~ account the applicable Guidelines as well as ~~the results of the Test [Pilot] Mining study Report and the updated Environmental Plans,~~ pursuant to Regulation ~~[48 ter Alt.2bis], paragraph 2 or 3, as applicable,~~ and in accordance with Annex [IV ter]. ~~and the Secretary General shall submit this matter to the Commission.~~

Kommentiert [SK1]: When mining technology previously demonstrated is used, its implementation may be optional; therefore, we would propose restoring this text to its original form. And since "mature" is qualitative, we would favor "demonstrated" as it requires the use of technology with a proven past and added it in brackets.

¹ An open issue is whether an applicable Standard or further details on Test Mining should be developed.

Regulation 46, paragraph 3:

~~(a) Be based on relevant [and representative] environmental baseline data [based on sufficient scientific information]; in accordance with [applicable] Standards [and Regional Environmental Management Plans] and taking into consideration the Guidelines [and the objectives and measures of the [relevant] Regional Environmental Management Plan];~~

~~{(f) Take into account the results from Test Mining activities conducted during Exploration, [if applicable,] in accordance with Regulation 48 ter;}~~

Regulation 48, paragraph 3(b):

Demonstrate that the proposed Exploitation is in accordance with all relevant environmental Standards and the Authority's environmental objectives and [taking into consideration] [in accordance with the requirements of] the relevant Regional Environmental Management Plan, [environmental baseline data] as well as any ~~additional objectives as set by the Contractor~~ Test Mining activities conducted during Exploration [or relevant data from any demonstrated Test Mining activities]; and any results of the performed Test Mining Study, where applicable;

Kommentiert [SK2]: Brackets have been added to account for cases where previously collected data is used. This applies when TM implementation is optional.

Regulation 48 ter: To delete.

Regulation 48 ter. Alt.2.:

~~1. Unless otherwise provided, nothing in this Regulation shall exempt the Applicant or Contractor, as the case may be, from conducting Test Mining before the submission of a Plan of Work for Exploitation;~~

Kommentiert [SK3]: Considering the possibility that TM implementation may be optional, we would suggest removal.

~~21.~~ Subject to this Regulation ~~and the applicable Standard~~, a Contractor shall conduct "Pilot Mining" before starting any Commercial Production under an Exploitation Contract. Information gathered through Pilot Mining shall be compiled in a Pilot Mining ~~R~~report in accordance with the applicable Standard and taking into consideration the Guidelines.

~~32.~~ Pilot Mining is conducted by a Contractor in its preparation for commencement of Commercial Production, and to assist the Commission in its evaluation of the Feasibility Study.

~~43.~~ The purpose of ~~the~~ Pilot Mining is to validate that the proposed mining equipment is commercially and technically appropriate and the effects of the activity, in particular with regard to the Protection of the environment, operates as described in the Environmental Impact Statement/Plan of Work.

~~54.~~ Pilot Mining ~~in the Area~~ requires a prior approval by the Commission ~~and~~

~~Council~~ and shall be carried out with reasonable regard for other activities in the Marine Environment, in accordance with Articles 87 and 147 of the Convention, and in accordance with the applicable Standard and taking into consideration the Guidelines, in particular to ensure effective protection for the marine environment from harmful effects in accordance with Article 145 of the Convention.

~~6. A validation monitoring system shall be established by the Contractor, in line with the Environmental Management and Monitoring Plan, in order to monitor whether the~~

Kommentiert [SK4]: (Comments)
The scale of commercial production varies by contractor, and the scale of TM also differs. If TM can be conducted at the same level as commercial scale, it is possible to proceed directly to commercial production upon signing the exploitation contract without conducting Pilot Mining.

requirements of the Plan of Work are complied with. In case of non-compliance, Regulation 52 will apply.

75. Any gains from Mineral resources which have been collected during Pilot Mining shall be paid to the ~~Environmental Compensation Fund~~ mechanism for the sharing of benefits to be established by the Authority, as established by Regulation 54.²

86. If a Material Change has been determined in accordance with Regulation 25 ~~and/or~~ 57 (2), the Council shall determine whether and on which aspects any additional Pilot Mining may have to be undertaken based on the recommendations of the Commission in order to ~~provide sufficient information to~~ satisfy the requirements of paragraph 32 above. In this case, paragraphs 12 and 34 above apply.

97. After the Pilot Mining, the Contractor shall submit to the Commission a Pilot Mining Rreport. The Pilot Mining Rreport shall provide information on the findings from the Pilot Mining, in accordance with the Standards and taking into consideration the Guidelines. On this basis, the Contractor shall accordingly update its Environmental Plans. The Pilot Mining Rreport and the updated Environmental ~~Impact Statement~~ Plans shall mutatis mutandis be subject to Regulation 11 and provide the Commission with required information ~~to review for its assessment in accordance with the provisions of regulations 12 to 16~~ the findings in light of the ~~Environmental Impact Statement/Plan of Work.~~ The Commission shall, without undue delay, review the findings of the Pilot Mining ~~Report~~ study and the updated Environmental Plans and make appropriate recommendations to the Council.

108. The Council shall, without undue delay, consider the findings of the Pilot Mining ~~Report~~ study and the updated Environmental ~~Impact Statement~~ Plans based on the recommendation of the Commission and in accordance with the procedure set out in Regulation 16 ~~in light of the Environmental Impact Statement/Plan of Work based on the recommendation of the Commission.~~ If the findings of the Pilot Mining and the updated Environmental Impact Statement and Environmental Management and Monitoring Plans are in accordance with the criteria set out in Regulation 13, Environmental Impact Statement/Plan of Work and the requirements for any modifications under Regulation 57 are met, the Council shall make an affirmative decision and notify the Contractor through the Secretary-General. Thereafter, the Contractor may commence Commercial Production in accordance with the Exploitation Contract.

1140. The provisions under regulations 12 to 16 shall apply mutatis mutandis to paragraphs 68 to 810 in this Regulation.

12. Pilot Mining shall not equate to Commercial Production as defined under Regulation 27 and in the Schedule.

Annex II, paragraph d:

Details of the equipment, methods and technology expected to be used in carrying out the proposed Plan of Work, including the results of {Test Mining} conducted, [or relevant data from any demonstrated Test Mining activities] ~~[as applicable]~~ and the details of any tests and Pilot Mining to be conducted in the future, as well as any other relevant information about the

Kommentiert [SK5]: Brackets have been added to account for cases where previously collected data is used. This applies when TM implementation is optional.

² Recognizing the discussions in the intersessional working group on test mining, the proponents would like to invite views towards the collection of royalties arising from Pilot Mining and the point in time such payment should be made.

characteristics of such technology, including processing and environmental safeguard and monitoring systems, [and electricity or other energy supply] together with details of any certification from a conformity assessment body;

Annex IV, paragraph 3.11:

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

{Provide a description of Methodologies, for collecting and analyzing baseline and “Test Mining” data and assessing the potential Environmental Impact and Environmental Effects from the proposed operations and alternatives considered.}

Annex IV in general:

To support inclusion with references to “Test Mining” (now in suspense document) into Standards and Guidelines.

Annex VII, paragraph 2(k):

Details of the proposed monitoring stations across the Contract Area, including the frequency of monitoring and data collection, the spatial and temporal arrangements for such monitoring and the justification for such arrangements, including how in situ validation of modelled results will be carried out. ~~{Where Test Mining was conducted,} proposed monitoring stations should, at a minimum, include the monitoring stations used during [test] mining [tests carried out in the Exploration phase]~~ Proposed monitoring stations should, at a minimum, include the monitoring stations used during Test Mining, [where if any demonstrated Test Mining data is used, the proposed monitoring stations should correspond to those used at the time of that data collection];

Kommentiert [SK6]: Considering the possibility that TM implementation may be optional, we would propose adding this sentence.

Schedule

{“Pilot Mining” means an in situ operating of the integrated system of all equipment and all related process steps, including collector, raiser and release techniques, for exploitation activities in a Contract Area under appropriate technical, spatial and temporal conditions which provides evidence concerning, inter alia, environmental impact, commercial capacity, duration of operations to validate feasibility of future Commercial Production.}

~~“Test Mining” means an in-situ testing that do not have harmful effects on the marine environment of the integrated system of all equipment and all related process steps (e.g. including collector, raiser and release techniques) for Exploitation activities in a Contract Area under appropriate technical, spatial and temporal conditions which allows the Test Mining for the provision of evidence to support the information provided by an applicant in its application for a Plan of Work for Exploitation, and to assist the Commission and the Council in its evaluation of the application against the criteria contained in Regulation 13 and 15.~~

~~“Test Mining ALT” means the use and testing of a fully integrated and functional mining system, including collection systems and water discharge systems;~~

Kommentiert [SK7]: If the definition of TM is based on ISBA/25/LTC/6/Rev.3, then this explanation is either unnecessary or should be identical to that document.

3) Norway

Regulation 7, 11, 12, 13, 25, 46, 48, 48 ter, 48 ter alt (new Alt.2).

Annex II, IV, VII.

Schedule Pilot Mining, Test Mining.

Regulation 7, paragraph 3.bis (d)bis:

A Test Mining Report with all information obtained from testing mining activities conducted during Exploration³; study prepared in accordance with Regulation 48 ter [In cases where an applicant utilizes mature mining technology that has been internationally validated, there shall be no requirement to conduct Test Mining. Instead, the applicant shall provide supporting materials in relation to the mature mining technology when submitting the application];

Regulation 11:

To replace throughout the regulation: "Test Mining study" with "Test Mining Report".

Regulation 12, paragraph 4:

Any previous operating record of the applicant, including in relation to Exploitation activities within other jurisdictions, as well as the applicant's performance during the Exploration stage, including the quality of annual reports and baseline data, and ~~results of test Exploitation activities the Test Mining Report.~~

Regulation 13:

To supplement paragraph 9 with a new subparagraph (e):

(e) Whether the Test Mining Report is in accordance with the applicable requirements and demonstrates that the test mining activities:

(iv) Support the information provided in the present application for the approval of a Plan of Work for Exploitation;

(v) Did not cause harmful effects on the Marine Environment; and

(vi) Were conducted under appropriate technical, spatial and temporal conditions, in accordance with any applicable Recommendation from the Commission;

Regulation 25, paragraph 1:

At least 12 months prior to the proposed commencement of Commercial Pproduction ~~[in a Mining Area]~~ [Sustained Large-scale Recovery Operations], the Contractor shall provide to the Secretary-General a Feasibility Study prepared in accordance with [Annex-~~XI~~] and Good Industry Practice, and the applicable Standard, taking into ~~consideration~~ ~~account the applicable~~ Guidelines as well as ~~the results of the Test [Pilot] Mining study Report and the updated Environmental Plans,~~ pursuant to Regulation [48 ter Alt.2bis], ~~paragraph 2 or 3, as~~

Kommentiert [Norway8]: As a general comment we note that the distinction between Test Mining and Pilot Mining should be clearly defined before progressing discussions on textual proposals regulating TM and PM. When further defining the concepts of TM and PM it is important that the scope and purpose of the tests are clearly regulated, so as to avoid duplication of testing.

We also note that TM is an activity that will be performed during the exploration phase. It is therefore appropriate to regulate detailed requirements for TM as part of the exploration regulations, e.g. through recommendations or standards under the exploration regulations. Regulation of TM in the exploitation regulations should be limited to requirements with respect to documenting that necessary testing has been performed.

Kommentiert [Norway9]: With this deletion the proposal contains no text on exemption from TM. Norway is of the opinion that an exemption should be permitted where successful testing of the relevant mining equipment has been performed in similar conditions. In the absence of any alternative proposal on exemption, Norway would prefer to keep the deleted text.

Kommentiert [Norway10]: The possibility for exemption should be reflected in this provision. We propose adding "if required pursuant to Regulation 7", so that the provision reads:
"Whether the Test Mining Report, if required pursuant to Regulation 7, is in accordance with the applicable requirements and demonstrates that the test mining activities: [...]"

³ An open issue is whether an applicable Standard or further details on Test Mining should be developed.

~~applicable~~, and in accordance with Annex [IV ter]. ~~and the Secretary General shall submit this matter to the Commission.~~

Regulation 46, paragraph 3:

~~(a) Be based on relevant [and representative] environmental baseline data [based on sufficient scientific information]; in accordance with [applicable] Standards [and Regional Environmental Management Plans] and taking into consideration the Guidelines [and the objectives and measures of the [relevant] Regional Environmental Management Plan];~~

~~{(f) Take into account the results from Test Mining activities conducted during Exploration, [if applicable,] in accordance with Regulation 48 ter.}~~

Regulation 48, paragraph 3(b):

Demonstrate that the proposed Exploitation is in accordance with all relevant environmental Standards and the Authority's environmental objectives and [taking into consideration] [in accordance with the requirements of] the relevant Regional Environmental Management Plan, [environmental baseline data] as well as any ~~additional objectives as set by the Contractor~~ Test Mining activities conducted during Exploration; and any results of the performed Test Mining Study, where applicable;

Regulation 48 ter: To delete.

Regulation 48 ter. Alt. 2.:

1. Unless otherwise provided, nothing in this Regulation shall exempt the Applicant or Contractor, as the case may be, from conducting Test Mining before the submission of a Plan of Work for Exploitation.

24. Subject to this Regulation ~~and the applicable Standard~~, a Contractor shall conduct "Pilot Mining" before starting any Commercial Production under an Exploitation Contract. Information gathered through Pilot Mining shall be compiled in a Pilot Mining ~~R~~report in accordance with the applicable Standard and taking into consideration the Guidelines.

32. Pilot Mining is conducted by a Contractor in its preparation for commencement of Commercial Production, and to assist the Commission in its evaluation of the Feasibility Study.

43. The purpose of ~~the~~ Pilot Mining is to validate that the proposed mining equipment is commercially and technically appropriate and the effects of the activity, in particular with regard to the Protection of the environment, operates as described in the Environmental Impact Statement/Plan of Work.

54. Pilot Mining ~~in the Area~~ requires a prior approval by the Commission ~~and~~ Council and shall be carried out with reasonable regard for other activities in the Marine Environment, in accordance with Articles 87 and 147 of the Convention, and in accordance with the applicable Standard and taking into consideration the Guidelines, in particular to ensure effective protection for the marine environment from harmful effects in accordance with Article 145 of the Convention.

Kommentiert [Norway11]: This does not read well with the different text in brackets and proposed changes. Norway prefers keeping the deleted text, while replacing "Test Mining Study" with "Test Mining Report". We also propose to delete the bracketed text "[in accordance with the requirements of]", so that the provision reads:

"Demonstrate that the proposed Exploitation is in accordance with all relevant environmental Standards and the Authority's environmental objectives and taking into consideration the relevant Regional Environmental Management Plan, environmental baseline data as well as any additional objectives set by the Contractor and any results of the Test Mining Report, where applicable."

Kommentiert [Norway12]: This text can not be included without having established a clear obligation in the regulations to perform TM. Such obligation belongs in the exploration regulations. For the purpose of the exploitation regulations, it should be sufficient that such obligation is made implicit through the requirement to include a TM report in the PoW application in accordance with Regulation 7.

Kommentiert [Norway13]: Since Pilot Mining is part of the exploitation Contract, this paragraph is unnecessary. The PM will be described in the PoW and approved as part of the Contract. The Contract must be in line with the Convention, in line with the current draft regulation. This paragraph is therefore unnecessary.

6. A validation monitoring system shall be established by the Contractor, in line with the Environmental Management and Monitoring Plan, in order to monitor whether the requirements of the Plan of Work are complied with. In case of non-compliance, Regulation 52 will apply.

75. Any gains from Mineral resources which have been collected during Pilot Mining shall be paid to the ~~Environmental Compensation Fund~~ mechanism for the sharing of benefits to be established by the Authority, as established by Regulation 54.⁴

86. If a Material Change has been determined in accordance with Regulation 25 ~~and~~ 57 (2), the Council shall determine whether and on which aspects any additional Pilot Mining may have to be undertaken based on the recommendations of the Commission in order to ~~provide sufficient information to~~ satisfy the requirements of paragraph 32 above. In this case, paragraphs 12 and 34 above apply.

97. After the Pilot Mining, the Contractor shall submit to the Commission a Pilot Mining Rreport. The Pilot Mining Rreport shall provide information on the findings from the Pilot Mining, in accordance with the Standards and taking into consideration the Guidelines. ~~On this basis, the Contractor shall accordingly update its Environmental Plans. The Pilot Mining Rreport and the updated Environmental Impact Statement Plans shall mutatis mutandis be subject to Regulation 11 and provide the Commission with required information to review for its assessment in accordance with the provisions of regulations 12 to 16 the findings in light of the Environmental Impact Statement/Plan of Work.~~ The Commission shall, without undue delay, review the findings of the Pilot Mining ~~Report study and the updated Environmental Plans~~ and make appropriate recommendations to the Council.

108. The Council shall, without undue delay, consider the findings of the Pilot Mining ~~Report study and the updated Environmental Impact Statement Plans based on the recommendation of the Commission and in accordance with the procedure set out in Regulation 16 in light of the Environmental Impact Statement/Plan of Work based on the recommendation of the Commission.~~ If the findings of the Pilot Mining ~~and the updated Environmental Impact Statement and Environmental Management and Monitoring Plans~~ are in accordance with the criteria set out in Regulation 13, ~~Environmental Impact Statement/Plan of Work and the requirements for any modifications under Regulation 57 are met,~~ the Council shall make an affirmative decision and notify the Contractor through the Secretary-General. Thereafter, the Contractor may commence Commercial Production in accordance with the Exploitation Contract.

~~114~~ 10. The provisions under regulations 12 to 16 shall apply mutatis mutandis to paragraphs 68 to 810 in this Regulation.

12. Pilot Mining shall not equate to Commercial Production as defined under Regulation 27 and in the Schedule.

Annex II, paragraph d:

Details of the equipment, methods and technology expected to be used in carrying out the proposed Plan of Work, including the results of {Test Mining} conducted, ~~as applicable~~ and the details of any tests ~~and Pilot Mining~~ to be conducted in the future, as well as any other relevant

Kommentiert [Norway14]: The EMMP does not require a validation monitoring system. It should be elaborated how the proposed validation monitoring system would look like and how it separates from Pilot Mining.

Kommentiert [Norway15]: We question whether the assessment set out in regulation 13 can be applied to paragraphs 8 to 10. It should be elaborated how such assesment would look like in this context.

Kommentiert [Norway16]: This seems unnecessary in addition to paragraph 2.

⁴ Recognizing the discussions in the intersessional working group on test mining, the proponents would like to invite views towards the collection of royalties arising from Pilot Mining and the point in time such payment should be made.

information about the characteristics of such technology, including processing and environmental safeguard and monitoring systems, [and electricity or other energy supply] together with details of any certification from a conformity assessment body;

Annex IV, paragraph 3.11:

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{Provide a description of Methodologies, for collecting and analyzing baseline and “Test Mining” data and assessing the potential Environmental Impact and Environmental Effects from the proposed operations and alternatives considered.}

Annex IV in general:

To support inclusion with references to “Test Mining” (now in suspense document) into Standards and Guidelines.

Annex VII, paragraph 2(k):

Details of the proposed monitoring stations across the Contract Area, including the frequency of monitoring and data collection, the spatial and temporal arrangements for such monitoring and the justification for such arrangements, including how in situ validation of modelled results will be carried out. ~~{Where Test Mining was conducted,} proposed monitoring stations should, at a minimum, include the monitoring stations used during [test] mining [tests carried out in the Exploration phase]~~Proposed monitoring stations should, at a minimum, include the monitoring stations used during Test Mining;

Schedule

~~{“Pilot Mining” means an in situ operating of the integrated system of all equipment and all related process steps, including collector, raiser and release techniques, for exploitation activities in a Contract Area under appropriate technical, spatial and temporal conditions which provides evidence concerning, inter alia, environmental impact, commercial capacity, duration of operations to validate feasibility of future Commercial Production.}~~

~~“Test Mining” means an in situ testing that do not have harmful effects on the marine environment of the integrated system of all equipment and all related process steps (e.g. including collector, raiser and release techniques) for Exploitation activities in a Contract Area under appropriate technical, spatial and temporal conditions which allows the Test Mining for the provision of evidence to support the information provided by an applicant in its application for a Plan of Work for Exploitation, and to assist the Commission and the Council in its evaluation of the application against the criteria contained in Regulation 13 and 15.~~

“Test Mining-ALT” means the *in situ* use and testing of a fully integrated and functional mining system, including collection systems and water discharge systems.

Kommentiert [Norway17]: Norway finds it problematic to define something that happens under the exploration contract in the exploitation regulation. Suggest bracketing this text in order to see how this can be dealt with correctly, for example in a Council decision or similar.

On the definition itself
The proposed definition of test mining presupposes that resource intensive testing must be carried out at an early stage of the project, without much flexibility. The definition appears to be better suited as a definition of PM, as it does not seem reasonable to require full installation of equipment in situ in connection with the preparation of the EIA, which TM is linked to. A definition of TM should be less extensive and reflect the purpose of the testing, which is, among other things, to support the EIA and demonstrate the applicant’s technical competence.

4) Switzerland

- We understand that the joint proposal proposes 2 phases. First, test mining (TM) taking place under an exploration contract; and second, pilot mining (PM) taking place under the exploitation contract. Both TM and PM represent successive phases, and both are a prerequisites for full scale commercial exploitation.
- To ensure consistency, we consider important that the TM (though taking place during the exploration phase) is made subject to the same rigor of EIA/EIS requirements as will be required under the Exploitation Regulations.
- In our view, it is important that the ISA keeps regulatory control and that the approach taken reduces risks by avoiding a leap from minimal test to large-scale pilot under an exploitation contract in one jump, consistent with the precautionary approach and UNCLOS environmental obligations, and recognizing the needs for contractors and sponsoring-states to have regulatory clarity and financial assurance while they mature their technology and business case. Robust testing reduces the risk of (costly) failure. If TM is successful, this would also provide more certainty once an application for an Exploitation PoW is submitted, and more evidence base to assist the ISA membership discharge our legal duties under international law.
- Therefore, we suggest that TM - under an exploration contract - could take a more gradual approach and be broken into clearly delineated stages to gradually build up system maturity and reduce risks. First, contractors would conduct component-level testing (e.g., individual collectors, risers, processing/discharge modules) to validate that each piece functions reliably and safely. Once components are proven, a small-scale integrated system test in situ, under tightly controlled spatial and temporal conditions, with rigorous environmental monitoring. If that is successful, a more extended test-mining with a fully integrated system over a defined test area and duration providing real-world data on a number of defined aspects. The purpose would be to build system maturity, reduce risk, and generate real-world data, while reducing risks to support future exploitation planning. This would be an iterative process, with contractor reporting to the ISA, and ISA oversight, throughout.
- Only after results from these successive stages meet agreed technical and environmental performance benchmarks would then the contractor be eligible to apply for an exploitation contract. If awarded, the exploitation contract includes PM, which can be considered as a “pilot production”. This pilot would function like a small-scale mining run, but still limited in spatial extent, time, and volume. It would serve to validate long-term feasibility (commercial), and confirm that environmental predictions, protections and adaptive management arrangements work in practice — before full-scale commercial production is allowed.
- By progressively reducing uncertainty, this approach supports generating empirical data, evidence-based decision-making, and would maintain flexibility for the ISA to respond if things go wrong while allowing contractors to mature their technology and business case.
- We would like to see included in the proposal a TM Standard (developing simultaneously with the Regulations) that would include standardized criteria for each phase to ensure legal clarity, build in decision points at each phase for the ISA to retain the ability to pause, adapt, or even terminate further phases.
- In addition, we consider that:

- Specific TM and PM activities should be subject to robust EIA/EIS requirements and Council approval upon an LTC recommendation.
- Safeguards should be included to prevent TM and PM becoming a pathway to hidden commercial exploitation.
- Scale, duration, maximum volumes extracted, use of the minerals extracted, and procedures (e.g. if impacts more significant than those envisaged, maximum number of trials) should be clearly defined in a respective TM and PM standard.
- Monitoring should take place during and after TM and PM, including independent review and verification of the outcomes.
- PM and TM reports' content should be defined in the respective standard subject to third party / scientific independent review and made publicly available.
- Given the novel and unprecedented nature of the industry, TM exemptions should not be allowed in a first phase when the industry starts. Once technology matures, potential exemptions may be allowed subject to strict and clear strict conditions, taking into account the heterogeneity of ecosystems.
- The Exploration regulations likely require revision to improve the ISA's process for permitting and oversight for test mining during exploration. We suggest that this can be done through the Exploitation Regulations and subsidiary instruments - Exploration regulations need not be reopened.
- Finally, we seek clarity on whether the regulations on test mining target nodules only, or also sulfides and crust mining.

5) United Kingdom

We aren't in a position to be able to share any specific text proposals at this stage. We would however, like to reiterate our previous thematic comments, which we still see as requiring discussion and resolution within the group prior to working on the details of the text.

UK comments following the Virtual meeting of the Intersessional Working Group on Test Mining (18 June 2025)

We are grateful for the work of Germany, Belgium and China in putting forward the Joint Proposal on Test Mining/Pilot Mining, and for hosting the webinar ahead of July Council.

We found the webinar by the proponents helpful, and we wanted to follow up with our questions in writing – many of which we raised during the webinar – as it was mentioned that the proposal will be further refined. The queries are as follows:

1. We have read Germany's report on Test Mining in the Area⁵ and wanted to know which elements within that report are translated into this proposal. We mentioned during the webinar that a written rationale to accompany the proposal would be valuable, and some indication of which elements of the report apply would also be useful to know.
2. It would be helpful to understand what distinction the proponents see between the scale of Test Mining versus Pilot Mining.
3. Our understanding of the proposal is that it requires Test Mining to be undertaken at the Exploration phase, ahead of an application for a Plan of Work. We would like to know the proponents' views on any legal or environmental risks that they have considered of requiring fully integrated Test Mining under an Exploration contract.
4. We would be keen to understand more on how the proponents see the development of a Standard for Test Mining, and whether that would apply to the Exploration or Exploitation Regulations, or both (Footnote 1).
5. We suggest that Paragraph 10 of DR48 ter alt.2 needs to also describe the process that would be undertaken if Council does *not* find the Pilot Mining Report and the updated Environmental Plans sufficient.
6. Have the proponents considered a two-stage contract (i.e. a pre-production contract for Pilot Mining under the Exploitation Regulations), prior to the application of a Plan of Work for Commercial Production?

As a reminder, and for your consideration, we described at March Council that in our view a full ramp-up of different scales of testing of mining systems needs to be completed prior to commercial production commencing, and as such we are considering the Joint Proposal in light of this position.

In our view, mining systems testing should comprise:

- (1) component testing (which is currently provided for in the Exploration Regulations),
- (2) full system testing (as per DR48 ter) which will require a standalone test mining contract before a Plan of Work is approved, then
- (3) full scale testing after a Plan of Work is approved (which we consider overlaps with the 'feasibility study' in DR25, and the process described in DR48 ter alt).

⁵ [Test mining in the Area: Legal, regulatory, environmental governance and scientific perspectives](#)

We are the of the view that once commercial production is permitted to start there should be a 4th stage – validation monitoring, to confirm whether the predicted outcomes of the Plan of Work are as expected, much of which is provided for in the Environmental and Monitoring Plan and annual reporting requirements.

6) Vanuatu

Please find attached Vanuatu's written comments and proposed amendments. Our contribution reflects Vanuatu's overarching position that both Test Mining and Pilot Mining must be adequately regulated, sequenced and assessed to ensure that no harmful effects occur to marine environment before any Plan of Work can be approved. We have provided concrete drafting suggestions across Regulations 7, 11, 13, 46, 47, 48, and 48 ter (new Alt. 2) to operationalise this approach.

Regulation 7, paragraph 3.bis (d)bis:

A Test Mining and Pilot Mining Report with all information obtained from testing mining activities conducted during Exploration; ~~study prepared in accordance with Regulation 48 ter [In cases where an applicant utilizes mature mining technology that has been internationally validated, there shall be no requirement to conduct Test Mining. Instead, the applicant shall provide supporting materials in relation to the mature mining technology when submitting the application];~~

Regulation 11:

To replace throughout the regulation: "Test Mining study" with "Test Mining Report" and "Pilot Mining Report".

Regulation 13 - Assessment of applicants and application

Vanuatu supports the proposed addition of a new subparagraph (e) under paragraph 9 of Regulation 13. In the context of our comments above, we suggest expanding these provisions to Pilot Mining as well as Test Mining, so it would read as follows:

(e) Whether the Test Mining Report and Pilot Mining Report are in accordance with the applicable requirements and demonstrates that the test mining and pilot mining activities;

- (i) Support the information provided in the present application for the approval of a Plan of Work for Exploitation;
- (ii) Did not cause harmful effects on the Marine Environment;
- (iii) Show that mining will not cause harmful effects on the Marine Environment; and
- (iv) Were conducted under appropriate technical, spatial and temporal conditions, in accordance with any applicable Recommendation from the Commission;

Regulation 47 - Environmental Impact Assessment

{add following paragraph}:

3. The Environmental Impact Assessment for exploitation must be informed by the findings of Test Mining and Pilot Mining.

Regulation 46, paragraph 3:

{(f) Take into account the results from Test Mining and Pilot Mining activities conducted during Exploration; ~~[if applicable,] in accordance with Regulation 48 ter;~~}

Regulation 48, paragraph 3(b):

Demonstrate that the proposed Exploitation is in accordance with all relevant environmental Standards and the Authority's environmental objectives and [taking into consideration] [in accordance with the requirements of] the relevant Regional Environmental Management Plan, [environmental baseline data] as well as any ~~additional objectives as set by the Contractor~~ Test Mining and Pilot Mining activities conducted during Exploration; and any results of the performed Test Mining Study, where applicable;

Regulation 48 ter. Alt.2.:

1. Unless otherwise provided, nothing in this Regulation shall exempt the Applicant or Contractor, as the case may be, from conducting Test Mining and Pilot Mining before the submission of a Plan of Work for Exploitation.

24. Subject to this Regulation ~~and the applicable Standard~~, a Contractor shall conduct "Pilot Mining" before ~~applying for starting any Commercial Production under~~ an Exploitation Contract. Information gathered through Pilot Mining shall be compiled in a Pilot Mining ~~R~~report in accordance with the applicable Standard and taking into consideration the Guidelines.

32. Pilot Mining is conducted by a Contractor in its preparation for application for an Exploitation Contract commencement of Commercial Production, and to assist the Commission in its evaluation of the Feasibility Study.

Regulation 48 ter Alt 2 - Pilot Mining

5. Pilot Mining ~~in the Area~~ requires a prior approval by the Commission ~~and the Council, and must be carried out prior to a Plan of Work being approved. Any Exploitation Plan of Work may only be approved if it can be clearly demonstrated that the Test Mine and the Pilot Mine did not and will not cause harmful effects on the Marine Environment.~~

7) The Pew Charitable Trust

We are concerned that we are setting up a regime that would be more appropriate for a mature sector with known impacts and mitigation measures operating under a tried and tested regulator, accordingly we urge the Council to construct an Exploitation regime at the outset that gives the ISA the best chance of discharging its legal duties successfully. For Test Mining/Pilot Mining (TM/PM) that means requiring as much data and clear demonstration of technical abilities before awarding the first Exploitation contract(s) – not afterwards. So, we would like to see the Test Mining aspect of the proposal strengthened, with more detailed requirements than are currently provided. It would make sense for these to be housed in a Standard, so they can be detailed and also subject to revision as the knowledge base grows. This is a Standard that needs to be developed concurrently with the Regulations, to ensure all aspects are comprehensively covered.

Secondly, we remain of the view that test mining should take place under Exploration, so we would like to see proposals for strengthening the EIA and oversight regime for TM. An instruction under the Exploration Regulations that contractors / LTC should follow relevant procedures described in the Exploitation regulations, for TM, as proposed by ACOPS - is an interesting idea addressing a number of concerns without re-opening the exploration regulations.

Thirdly, it is essential that the ISA remains in full control supervisory control. We consider this includes retaining powers to (a) independently verify the results of TM and PM, and (b) prevent a contractor moving to Commercial Production in the event that PM does not evidence acceptable impacts/productivity/safety etc. The current proposal would benefit from inclusion and strengthening of both those aspects.

Fourthly, there are various specific parts of the proposal that may benefit from clarification by the proponents e.g.

- What would be the ownership status and obligations for storage/use of any minerals extracted during TM or PM?
- Would there be limits imposed on the volume of minerals that could be extracted during TM or PM?
- What would be appropriate time requirements for environmental monitoring and reporting post-TM and post-PM, and have these been factored into the procedural aspects of the proposal?
- Proposed DR48ter Alt2 para (6) does not expressly refer to TM or PM, so its purpose here is unclear. How does validation monitoring relate to environmental monitoring- would it not be part of the EMMP and EMS already? The references to 'non-compliance' and DR52 would also benefit from clarification.
- The Feasibility Study and approval process appears to be separate from PM and its approval process. Is this correct? If so, what is the Feasibility Study doing that PM is not also doing?

8) Contractors (GSR, NORI, GM)

Regulation 48 ter. Alt.2.:

1. Unless otherwise provided, nothing in this Regulation shall exempt the Applicant or Contractor, as the case may be, from conducting Test Mining before the submission of a Plan of Work for Exploitation.

24. Subject to this Regulation and the applicable Standard, a Contractor shall conduct "Pilot Mining" before starting any Commercial Production under an Exploitation Contract. Information gathered through Pilot Mining shall be compiled in a Pilot Mining Rreport in accordance with the applicable Standard and taking into consideration the Guidelines.

32. Pilot Mining is conducted by a Contractor in its preparation for commencement of Commercial Production, and to assist the Commission in its validation of the Feasibility Study.

43. The purpose of ~~the~~ Pilot Mining is to validate that the proposed mining equipment is commercially and technically appropriate and the effects of the activity, in particular with regard to the Protection of the environment, operates as described in the Environmental Impact Statement/Plan of Work.

54. Pilot Mining ~~in the Area~~ requires a prior approval by the Commission and shall be carried out with reasonable regard for other activities in the Marine Environment, in accordance with Articles 87 and 147 of the Convention, and in accordance with the applicable Standard and taking into consideration the Guidelines, in particular to ensure effective protection for the marine environment from harmful effects in accordance with Article 145 of the Convention.

6. A validation monitoring system shall be established by the Contractor, in line with the Environmental Management and Monitoring Plan, in order to monitor whether the requirements of the Plan of Work are complied with. In case of non-compliance, Regulation 52 will apply.

75. Any gains from Mineral resources which have been collected during Pilot Mining shall be paid to the Environmental Compensation Fund mechanism for the sharing of benefits to be established by the Authority, as established by Regulation 54.⁶

86. If a Material Change has been determined in accordance with Regulation 25 ~~and~~ 57 (2), the Council shall determine whether and on which aspects any additional Pilot Mining may have to be undertaken based on the recommendations of the Commission in order to ~~provide sufficient information to~~ satisfy the requirements of paragraph 32 above. In this case, paragraphs 12 and 3-4 above apply.

97. After the Pilot Mining, the Contractor shall submit to the Commission a Pilot Mining Rreport. The Pilot Mining Rreport shall provide information on the findings from the Pilot Mining, in accordance with the Standards and taking into consideration the Guidelines. On this basis, the Contractor shall accordingly update its Environmental Plans. The Pilot Mining Rreport and the updated Environmental Impact Statement Plans shall mutatis mutandis be subject to Regulation 11 and provide the Commission with required information to review for its assessment in accordance with the provisions of regulations 12 to 16 ~~the findings in light of the Environmental Impact Statement/Plan of Work.~~

Kommentiert [A18]: Replace "evaluation" with "validation". Once the Feasibility Study has been reviewed and approved [1Y], one can start Pilot Mining. The learnings are again validated during a 60 day period before commercial mining can start.

Kommentiert [A19]: Delete "and Council": Pilot Mining is part of Exploitation Contract conditions. Once exploitation contract is approved, Council has already approved for Pilot Mining.

Kommentiert [A20]: Define "gains". As the costs during this phase will be much higher than any potential revenues, there will be no gains.

⁶ Recognizing the discussions in the intersessional working group on test mining, the proponents would like to invite views towards the collection of royalties arising from Pilot Mining and the point in time such payment should be made.

108. The Commission shall, within 60 days, consider the findings of the Pilot Mining ~~Report~~ study and the updated Environmental Impact Statement Plans. If the findings of the Pilot Mining and the updated Environmental Impact Statement and Environmental Management and Monitoring Plans are in accordance with the criteria set out in the applicable Standard and taking into consideration the Guidelines, the Commission shall make an affirmative decision and notify the Contractor through the Secretary-General. Thereafter, the Contractor may commence Commercial Production in accordance with the Exploitation Contract.

~~1149. The provisions under regulations 12 to 16 shall apply mutatis mutandis to paragraphs 68 to 810 in this Regulation.~~

12. Pilot Mining shall not equate to Commercial Production as defined under Regulation 27 and in the Schedule.

“Test Mining-~~ALT~~” means the *in situ* use and testing of all subsystems which can cause an Environmental Effect, and which cannot be considered tested or proven in a relevant environment, or by known and validated models. Furthermore, Test Mining should combine the subsystems in an integrated manner if the interaction of the subsystems potentially changes the system behaviour in a way which cannot be adequately predicted by known and validated modelling.

Kommentiert [A21]: Replace "Council" by "Commission". The criteria to review a Pilot Mining Test must be agreed in the Exploitation Contract and can be reviewed by the Commission.

Kommentiert [A22]: Replace: "Without undue delay" with "within 60 days". Comment: During that time, the asset is idle. Therefore, strict review periods are necessary.

Kommentiert [A23]: Simply saying "fully integrated" does not achieve the desired result which is to protect the marine environment.