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**Report of a workshop on the draft regulations for the
exploitation of mineral resources in the Area: policy, legal
and institutional considerations**

12-13 February 2018, The Royal Society, 6-9 Carlton House Terrace, London



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List of abbreviations used throughout report:

BBNJ Biological diversity Beyond areas of National Jurisdiction

CBD Convention on Biological Diversity

EBSAs Ecologically or Biologically Significant Marine Areas

EIA Environmental Impact Assessment

EMMP Environmental Management and Monitoring Plan

FAO Food and Agriculture Organization

GESAMP Group of Experts on the Scientific Aspects of Marine Environmental Protection

IMO International Maritime Organization

IOC-UNESCO Intergovernmental Oceanographic Commission of UNESCO

ISA International Seabed Authority

LTC Legal and Technical Commission

MoU Memorandum of Understanding

REMP Regional Environmental Management Plan

UNCLOS United Nations Convention on the Law of the Sea

SEA Strategic Environmental Assessment

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Background

The Royal Society and the Foreign and Commonwealth Office hosted an informal workshop in London on 12-13 February 2018.

The objective of the workshop was to stimulate discussion on key policy issues that should be addressed in the development of the mining regulations, with a view to informing substantive discussions of the draft regulations during the Council meetings in 2018. The aim was to support the development of clear policy instructions from the Council to the Legal and Technical Commission (LTC) on the issues that the LTC should consider in preparing the next set of draft regulations.

Objectives also included to ensure that the best available science, and an understanding of current gaps in our knowledge, is taken into account in the development of the regulations, and to enable development of regulations that can accommodate new scientific evidence and technological advancement.

The workshop was Chaired by Lord Oxburgh KBE, HonFREng, FRS, and conducted under Chatham House rules.

This report seeks to capture the key issues that were raised during the workshop discussions, in particular the facilitated plenary discussions. This was an informal workshop designed to stimulate discussion on the draft regulations rather than to reach any decisions. As such, the organisers did not seek to capture agreement or consensus amongst participants – that is a matter for the formal Council discussions. Nothing in this report should be read as demonstrating or trying to demonstrate agreement or consensus on any particular issue, nor should they be read as formal positions of the Royal Society or Foreign and Commonwealth Office.

Copies of the presentations that were made as part of the workshop can be downloaded from the links in Annex 1 (page 20) (hyperlinks in the agenda and full links below the agenda). A copy of ISA Secretary General Lodge's introductory comments can be found in Annex 2 (page 23). Annex 3 (page 26) contains the list of attendees.

The draft exploitation regulations: structure, flow, key issues and gap discussion

Facilitator: Hannah Lily, Commonwealth Secretariat

The objective of this first workshop session was to consider whether there is a common understanding of the stages, processes and workflows connected with exploitation, and the transition between pre-feasibility and feasibility. The aim was to contribute to a better understanding of, and improvement to the structure and content of the regulations. Ms Hannah Lily of the Commonwealth Secretariat facilitated a discussion on the structure, flow, key issues and potential gaps in the draft exploitation regulations. Her presentation to set the scene is here:

<https://royalsociety.org/~media/policy/projects/future-oceans-resources/presentations/introduction-to-workshop-session-1-structure-flow-issues-gaps.pdf>

The groups were asked to consider a proposed workflow process and phases under the draft regulations (which can be found in Annex 4 on page 29) and asked to:

- Identify any perceived gaps in regulatory content for consideration by the Legal and Technical Commission / Secretariat – what is missing/unclear/could be improved?
- Provide further input by way of questions to be directed at the Legal and Technical Commission/Secretariat for consideration – what are the key policy decisions that Council needs to take?

Plenary discussion

General points

- A number of participants indicated that they felt that the regulations were developing in the right way. Others however expressed a level of surprise over the amount of detail that has been removed from the current draft of the regulations, in particular on environmental issues. It was recognised that it may be appropriate for some of the detail to be included in guidance and not in the regulations, but some participants noted that there had been a lot of stakeholder input into the development of that more detailed regime. It is important that the work done is not lost, and that stakeholders should be involved in the development of guidance on these issues.
- One issue that was raised is the need for clarity in the timelines in regulations. The timelines for contractors to submit applications supporting documentation is specified in the current draft, but there is no indication of the timeline in which the ISA will issue its decisions. This also raised a potential question of the capacity of the ISA to deal with a number of applications at the same time from a resourcing perspective.

The transition period from exploration to exploitation

- Is there a fixed time period for moving to exploitation during which the exploration contract remains in force? How exactly will this transition period work? How long will the timeline be for companies to move from one stage to the other?
- In the continuum from exploration to exploitation areas may differ – there may be insufficient environmental information for some areas to justify transition to exploitation within the allotted time scale – how will this be addressed?
- The point was made that exploitation will not start in all parts of a contract area at the same time. It was suggested that one way to conceptualise this is to think in terms of the Plans of Work for any given contract area – there will be a Plan of Work for exploitation for that part that is to be mined, but also Plans of Work for exploration in the rest of the contract area.
- Some participants raised questions around the linear presentation of the workflow. The feeling was that the workflow assumed that everything would be successful. What was the mechanism for a situation in which (for example) the EIA was deemed to be unacceptable? What is the diversion route or iterative process – can this be reflected in the presentation of contractor activities?

Environmental aspects of the draft regulations

- Some participants questioned the need for the Scoping Report in regulations and what function it would serve. Other participants considered that there needed to be more clarity around the content of the Scoping Report and that guidance on its preparation should be published before the exploitation regulations come into effect.
- It was recognised by participants that the regulations have been drafted at a high level, but there was concern about the lack of clarity on minimum standards both for the Scoping Report and the environmental impact assessment (EIA). Many participants felt that the regulations should set minimum standards and that these could then be developed in guidelines.
- Questions were raised around the link between the EIA process and individual environmental management and monitoring plans (EMMPs) for mining areas and regional environmental management plans (REMPs). Many participants considered that a clear link should be made in the regulations between the EMMP and the relevant REMP, and that contractors should be required to demonstrate how they had taken the provisions of the REMP into account in the preparation of their EMMP. Participants suggested that it would then be for the ISA to assess whether the EMMP adequately took into account the provisions of the REMP.
- Questions were raised around the criteria for reviewing the EIA and who would undertake the review. There were also questions around how the preparation and review of EIAs would take into account the broader picture of potential impacts on the Area. It was suggested that the ISA could learn from the experience of other industries, e.g. the aggregate industry, where a new EIA is required every 5-15 years.

- There were concerns around the spatial scope of EIAs – for example if the boundary of the mining area changed would this invalidate the EIA? Would this require an updated Plan of Work and updated EIA?
- Issues were raised around the requirement for post-closure environmental monitoring. Some participants felt that the 5-year post closure monitoring was too short a period and pointed to provisions in certain countries' regulation of domestic marine extractive industries for monitoring in perpetuity. Others pointed to the fact that environmental information will have been gathered over the 30-year contract period and therefore a long period of post closure monitoring would not be required.

Test mining

The question of test mining was raised, although there were clear differences of views amongst participants on this issue.

- Some participants raised the question of whether, in the absence of test mining there could be sufficient information to inform an EIA.
- Questions were raised as to whether the reference to test mining in the regulations means testing of component parts in order to establish the data needed for the EIA or does it mean mining in situ or both?
- Questions were posed as to whether the requirements for test mining should be determined by the engineering needs of the contractors or should be defined in the regulations.
- In the final feedback session at the end of the workshop, some participants expressed the view that the idea that there would be full scale test mining in advance of the grant of an exploitation licence failed to take into account the economics of exploitation. It was explained that an exploitation licence is a prerequisite for securing the funding that would enable a full size test. It was suggested that there is a lot of work that can be done short of full scale test mining to fulfil the requirements of an EIA.

A number of participants made the point that parts of the exploitation regulations appeared to be more appropriate to the exploration phase, although it was recognised that there is likely to be little appetite to reopen the exploration regulations. It was, however, suggested by some participants that the exploration regulations should be reviewed in light of developments such as the development of EBSAs under the CBD process, to ensure that we can move towards exploitation. Some participants also raised the need to review what other users are active in the Area – for example cables – before moving to exploitation. It was suggested that issues should be addressed in the regulations.

On a point of detail, participants identified need for a legal scrub of the regulations to ensure that there is consistency in the use of terms throughout.

The roles of sponsoring States, flag States, the ISA and other relevant organizations under the regulations

Facilitator: Dr Neil Craik, University of Waterloo

The objective of the second workshop session was to identify some of the key issues and potential points of conflict between the roles of sponsoring States, flag States, the ISA and other relevant organizations under the regulations. Dr Neil Craik of the University of Waterloo set the scene for the discussion, identifying some of the key actors in this space and the other regulatory environments and processes that need to be taken into account. Points highlighted by Dr Craik included:

- 1) Relationship between ISA and other treaty processes (activities on vessels under flag state).
- 2) Marine genetic material and the BBNJ process
- 3) How best to ensure different regulatory regimes work together? *Eg fisheries*
- 4) What do you think areas of conflict/issues may be?
- 5) What tools are available to ISA to resolve these?
- 6) Allocation of regulatory oversight- is there going to be a primary role?

Dr Craik made the point that if these questions are not addressed in the development of the regulatory regime, there is a risk of both over and under regulation. He posed the following questions to the breakout groups:

- How should the ISA and others, e.g. the IMO, work together to ensure that the regulatory regimes are coherent?
- Should the regulations be more specific about the interactions between the ISA and the Sponsoring States – for example should the reporting requirements for the contractor in the regulations also include reporting to the Sponsoring State?

Plenary discussion

Cooperation with other international organisations

- How will the ISA deal with any potential conflicts between exploitation and the requirements of other users, for example fishing or cable laying? Some participants suggested that dealing with this issue would benefit from the formation of a group of experts that would consider some of these conflicts (strategic thinking rather than reactive). Others raised the question of the development of a Strategic Environmental Assessment that would take into account the various activities taking place and potential cumulative impacts. This would build upon the REMP. Some participants raised the possibility of a regional ocean planning tool building on an SEA.
- Participants highlighted the need for increased co-ordination and co-operation between international organisations regulating activities. Some participants

highlighted the need for proactive engagement with all organisations with an interest, including the IMO, IOC and CBD. The ongoing discussions between the ISA and the IMO under the MoU was referenced as a good example. Other participants reminded the workshop of the need not to forget about the role of the FAO. Participants felt, however, that there is a need for a strategic approach across organisations. The question of what role GESAMP could play in supporting this strategic view was raised. Other participants referred to the IOC database and raised the question of what the ISA could do to improve this database.

- It was suggested that given the importance of co-operation between the various international organisations, this should be reflected on the face of the regulations.
- Some participants raised the fact that the BBNJ negotiations will be ongoing at the same time as the elaboration of the exploitation regulations. Others suggested that there is no easy answer to that issue, apart from communication within governments and across scientific and other organisations.

The role of the sponsoring State

- Some participants expressed the view that the regulations should not place any new obligations on Sponsoring States and that the obligations are clearly set out in UNCLOS and the Part XI agreement. Other participants felt that the regulations could benefit from more clarity on the role of the Sponsoring State and should include aspects of the Seabed Disputes Chamber Advisory Opinion.
- Many participants felt that the regulations could more clearly address the need for exchange of information between the ISA and the Sponsoring States.
- Other participants raised the question of what role, if any, the ISA should have in guiding the formulation of national legislation. Should the ISA more clearly set out what should be addressed in national legislation even if it would be outside its competence? Others noted that this is a matter for the sovereign State.
- Attendees raised the question of monitoring and compliance and what role the Sponsoring State should/would play in these. Some participants felt that there should be simultaneous information sharing between contractors and the ISA and Sponsoring States and that technology would allow for this, but other participants did not agree with this proposition.
- There was some discussion around the question of who should have the responsibility for inspection and enforcement. Participants generally supported the need for an inspectorate with a strong mandate, although there were a variety of opinions as to the level at which inspections should be conducted – Sponsoring State or ISA or both.
- It was discussed how to avoid double penalties. Some participants suggested that one option would be to have less punitive provisions in the regulations and leave the flexibility to the Sponsoring State to address failures by the contractors. Other participants suggested that this would be a matter for discussion between the ISA and the Sponsoring State as to who might be best placed to take the most appropriate and effective action in response to a breach – for example a

Sponsoring State might be able to create offences, including the imposition of criminal sanctions that would not be an option for the ISA.

Other regulatory responsibilities

- There was some initial discussion of the role of the flag state and coastal state but these are areas that may merit further consideration as the regulations are developed.

Engaging with the scientific community: how to ensure best scientific advice is taken into account in developing and implementing the regulatory regime

Facilitator: Professor Gideon Henderson FRS

The objective of this session was to identify the methods for ensuring that scientific advice is taken into account in both the further development and the implementation of the regulatory regime. Professor Henderson set the scene for the discussion, highlighting the variety of scientific and technological expertise that would be required to address the various issues that the ISA must consider. Professor Henderson posed the following questions for the groups to consider:

- How can scientific expertise best be incorporated in broad environmental policy and assessments; assessing submitted EIAs; setting standards and assessing monitoring data?
- Are there lessons to learn from other international organisations?
- Requirements for transparency of scientific data (and delivery of data).

Plenary discussion

General points

Participants at the workshop raised the following points:

- The need to be clear on what type of expertise is required and when.
- The fact that the ISA is already undertaking broad consultation with the scientific community through workshops and other means. A point was made about the importance of the timeliness and availability of reports from workshops to inform the debate.
- The need for further collaboration and broad consultation to improve and increase the participation and knowledge that is flowing in to the process. Participants recognised that there are funding issues around broad consultation, but it was felt that this was important to get the greatest input into the process.
- The need for a more formal approach to collecting scientific information and prioritising what scientific information needs to be collected. Participants suggested that a research roadmap could be developed. The LTC has set out its priorities and these can be considered in the context of the ISA's strategic plan to identify priorities for research. Participants considered that such an approach would be important in driving the funding for research towards the areas of greatest need.
- The importance of scientists providing advice on difficult issues such as defining "uncertainty" and what is an appropriate level of uncertainty to tolerate in a new industry, but ultimately this is a policy decision that the Council will need to take based on the scientific advice.

Capacity of the ISA

Participants at the workshop raised the following points:

- The need to strengthen the in-house expertise of the ISA.
- The possibility of an independent scientific advisory group that could provide advice/input to the LTC as required either individually or as a group. This was in recognition of the fact that the LTC does not necessarily have all the requisite expertise, although that expertise will change over time as needs are identified, and that the Commission is free to request expert input at any time. This group could be asked to review all the documentation submitted by the contractors and provide their advice to the LTC. It was suggested that Member States could assist the ISA by recommending that their scientist join this group.
- The suggestion of an independent expert group, querying how that would fit with the responsibilities of the LTC as set out in UNCLOS and the Part XI Agreement. Concerns were also raised about the limited number of experts available and whether inclusion in this group of experts would preclude those individuals from working with the contractors as they develop their EMMPs and other documentation.
- The need to clarify the role of any independent expert group and the weight that should be accorded to their advice. It was recognised that there could be merit in independent reviews of EIAs and other documents, there would need to be clarity on who these experts would report to, and how the standard of their report would be assessed by the LTC and/or the Secretariat.
- The idea of a database of scientific expertise that the LTC/Secretariat could draw upon as necessary.

Transparency

Participants at the workshop raised the following points:

- Many participants welcomed a presumption in favour of transparency and openness of data. They noted the difficulty in defining the concept of “environmental data” and the lack of clarity around the term “commercially sensitive data”.
- The need for data to be accessible. They welcomed the development of the ISA database.
- That openness of data is critical for consideration of the regional impacts of mining, and for maintenance of a social license to operate (as well as for advancing scientific understanding).
- The need for contractors to be able to protect their intellectual property rights, but this is not limited to patents but to processes. Many participants highlight however that the ISA would need access to this information in order to assess impacts and to drive improvements – for example to set higher standards where a particular technology is demonstrated as creating less impact. Participants recognised the challenge of assessing an EIA based on a particular technology without knowledge of how that technology works.

- That whilst contractors would be required to consult on their EIA and other documents there would be no obligation on those seeking to challenge their conclusions to establish the scientific basis of their concerns.
- Issues around the process by which data could be classified as “commercially sensitive” and withheld from publication. Some participants stressed the need for an objective standard set by the ISA and for a clear process to assess the confidentiality of data. The importance of transparency in the decision making processes of the ISA was stressed by a number of participants.
- The possibility of an embargo period during which certain information would remain confidential.
- The importance of preservation reference zones and impact reference zones and the linkage between the resource and biodiversity. They stressed the fact that information about resource abundance is critical to making spatial planning decisions.
- The importance of transparency in decision-making; that the considerations of the LTC in reaching specific decisions should be made public, and that this should extend to open meetings of the LTC when it is considering environmental issues. They considered that this was relevant to the question of the social licence of deep sea mining. We returned to this issue in the fifth workshop session. Other participants pointed to the fact that other respected regulators whose decisions are not challenged do not take those decisions in a forum open to the public. Those regulators all have a reasoned decision making process, and the final product of that process is a reasoned decision. These participants expressed the view that this is what is important in creating a reliable regulatory environment, all stakeholders need to be able to understand the reasons for the decisions that have been taken.
- In the fifth workshop session participants again stressed the importance of transparency and that the ISA should consider making data as widely available as possible. Some participants stressed the importance of transparency to ensure public acceptance of deep sea mining. They pointed to the need to ensure public acceptance of what is going to happen. They felt that the ISA should be as proactively open as possible and promote its role and independence as a regulator. Some participants raised the question of whether there needed to be another scientific body in addition to the LTC whilst others made the point that States parties have appointed independent experts to the LTC members. Participants debated the fact that closed door meetings may lead to better decisions but less public confidence, whilst open door meetings may lead to more political decisions not based on science.

The system of payments: balancing interests

Facilitators: Randolph Kirchain and Richard Roth, Massachusetts Institute of Technology

In planning the workshop, the organisers recognised that the system of payments is a part of the draft regulations that has had little discussion to date. To reflect this fact, a different approach to this part of the workshop was adopted. Instead of setting questions for discussion in small groups followed by a plenary discussion, Chris Brown of the ISA gave a presentation setting out the background to the development of the payment mechanism as currently set out in the draft regulations, starting with the provisions of UNCLOS and the Part XI agreement. A copy of that presentation can be viewed at:

<https://royalsociety.org/~media/policy/projects/future-oceans-resources/presentations/the-system-of-payments-balancing-interests.pdf>.

Randolph Kirchain and Richard Roth of the Massachusetts Institute of Technology then facilitated a plenary discussion on the draft payment mechanism based on their presentation on day one of the workshop and the presentation given by Chris Brown. They posed the following questions to the plenary:

- What aspects require closer examination and/ or consideration?
- What questions could the Council usefully consider / discuss in March 2018?
- How can respective interests in the “system of payments” be properly addressed, discussed and integrated?

What aspects require closer examination and/or consideration?

Participants at the workshop raised the following points:

- That no account has been taken of the question of the potential impact on the economies of developing countries that rely on land based sources of minerals to be exploited in the Area. The need to take this factor into account is set out in UNCLOS as modified by the 1994 Implementing Agreement, including a requirement for the ISA to carry out or commission a study on the potential impact on developing country markets, and consideration of an economic assistance fund outlined in the 1994 Implementing Agreement.
- The benefit that developing countries would receive from the availability of cheaper end products.
- The need to quantify the benefit of the additional metals that are required for new, clean technologies, to achieving the sustainable development goals.
- The question of whether there was an understanding of how to value the common heritage of mankind – how much would be sufficient compensation. They suggested that the process of developing the payment mechanism should start

with that discussion and then work out what rates should be levied to meet that valuation.

- The fact that the current draft of the regulations does not consider how to distribute the payments. They also noted that there were no provisions in the current draft regulations on profit sharing, noting that the Part XI Agreement refers to the possibility of a royalty system or a combination of royalty and profit sharing. Some participants argued that these alternatives should be reflected in the regulations and the contractor should have the right to choose.
- The need to have different phases of the payment mechanism system to incentivise first movers. They queried whether the system as currently drafted would, in any event, incentivise first movers as all contractors would benefit from the lower rate during the first phase of their exploitation. Some participants noted that most systems of taxation on resource extraction have a royalty and a profit share element, but acknowledged that profit sharing may be more difficult to implement. They expressed the view that there should be a reasonable and significant royalty that fairly compensates for the common heritage of mankind.
- That national systems of taxation are imposed by governments who use that money to fund services. They queried the relevance of this analogy to the situation of the ISA.
- That investors demand a return in line with the amount of risk taken and that is why it is appropriate to provide an incentive for first movers.
- The question of the workability of a profit sharing scheme. They suggested that it would require a degree of transparency from contractors that is not realistic. A problem faced by many national tax administrations. It could enable companies to manipulate profits, and it would be challenging for the ISA to work out the real level of profit. They noted that domestic systems have a way of addressing this issue, but the ISA is in a very different position. Without adequate means of ensuring proper transparency, the credibility of the payment regime as a whole could be undermined. Some participants noted that the risk with a profit sharing scheme is that if metal prices drop then profits will drop and the ISA will recover much less money.
- The possibility that there might be different considerations for different kinds of contractors.

What questions could the Council usefully consider / discuss in March 2018?

Participants at the workshop raised the following points:

- That the Finance Committee has the responsibility to consider the payment mechanism and that the views of the Finance Committee need to be taken into account. Participants noted that the question of equitable sharing of benefits is on the Finance Committee's agenda for its July 2018 meeting.
- That the Assembly designed the March Council session to be before the LTC meeting so that the Council can give direction to the LTC on developing the regulations. They noted that the Council has never had a detailed discussion on the payment mechanism and considered that it would be useful for it have an

introductory brief on the payment mechanism. That could be done on the first day and there could then be a discussion on the issue after Members had considered the matter for a couple of days. Participants thought that what the Council might want to consider in March is what it wants the payment mechanism system to do. It could then ask the LTC to look at how the ISA could achieve that outcome.

- That the annual fixed fee and royalty rate should be based on the mined area and the value of the minerals in that area, not the total area – the total area may be large but the richness of the minerals may vary.

How can respective interests in the “system of payments” be properly addressed, discussed and integrated?

Participants at the workshop raised the following points:

- That the ISA needed to address the larger question of “social licence” in designing the payment regime. Why are we doing the mining now – what are the environmental losses and consequential economic loss. How do you optimise the return to humanity from the seabed area as well as the mineral resources. Other participants argued that trying to put a monetary value on biodiversity value and trying to put that in to an economic model does not properly value that biodiversity.
- The question of what happens to the revenue generated. They highlighted the benefit of having some of this resource used to fund science which would be for the benefit of humankind. This funding would need to include capacity building and collaboration.
- That it would be helpful to have a workshop on contractor risk. We need to be clear what risks they are taking and what costs they are facing.

Future proofing the regulations: supporting best practice and technological change

Facilitator: Professor Rachel Mills, University of Southampton

The objective of this session was to identify issues that need to be considered to ensure that the regulations remain fit for purpose over time and that they enable technological and scientific development that leads to more efficient and environmentally sensitive mining. Professor Mills of the University of Southampton introduced the session, highlighting the importance of ensuring that the ISA continued to make the use of the best available scientific and technological knowledge in implementing the regulations in the future. Professor Mills posed the following questions for consideration by the groups:

- What predictions can we make about how technology and science will develop that need to be considered in developing regulations?
- Are there matters that should be addressed in guidelines to ensure that they can be revised and developed quickly to react to scientific and technological developments? How do we ensure that guidelines are followed?
- Should the ISA be looking to develop guidelines and criteria for technology? How can we ensure that these are updated regularly to ensure that the best technology is deployed, and development not stifled?

Plenary discussion

Developments in technology

Participants at the workshop raised the following points:

- That the technology for exploitation and environmental monitoring and surveillance, including autonomous vehicles, more sensitive monitoring equipment, better mining technology, will develop over the lifetime of an exploitation contract.
- The possibility of the use of artificial intelligence in the future to make changes to the equipment during the mining process. They also raised the possibility of deep sea observatories. The overall message was the importance of not limiting the possibilities of the future in the design of the regulatory regime.
- The fact that in a new industry improvements in technology can happen very quickly. This was linked to the payment regime, because equipment efficiency and effectiveness will develop very quickly and equipment could be replaced very quickly. Some participants highlighted the need not to disincentivise the development of new technology in the design of a royalty regime. They expressed the view that the royalty regime should anticipate the development of new technology and put the appropriate incentives and checks in place.
- That developments in technology, including enhanced data processing and machine learning algorithms, could make a real impact on species identification.

They also pointed to developments in band width that will make it easier to send data from the Area to the ISA and other actors.

- The importance of dialogue between scientists and engineers in the development of technologies that improve standards.
- The importance of scientists and policy makers being able to communicate with each other.
- That improved methodology might lead to increased sensitivity to detect ‘impact’ or ‘effect’ – would that cause a problem for the regulations?

How to ensure that the regulatory regime can respond to developments in science and technology

Participants at the workshop raised the following points:

- The importance of the concepts “best available science” and “best available technology” and the linked importance of periodic review of guidance and standards. They suggested that the regulations should provide for performance-based standards and include a clause requiring such a periodic review. It was noted, however, that it could be beneficial to provide a mechanism by which an actor could trigger a review of the regulations or guidelines in a shorter time period.
- That there will be improvements across the board as the industry develops, including in energy and efficiency and in data processing. Standards can go up as performance improves, which again points to the need for a review process.
- That guidance can be reviewed and updated more easily than the regulations themselves. Participants suggested that it would be important to have a workshop to look at the development of environmental standards and the relationship between these and the best available science.
- The need to consider the end-to-end process of deep sea mining and the link between the ISA regulations and land based processing regulations. If the waste is to be disposed of on land, then it needs to be as inert as possible. The link also needs to be made to the provision of adequate port reception facilities if the resource is to be processed at sea. It was felt that there could be signposting to other international law obligations.
- The question of how to ensure that guidelines on environmental and/or technical issues are followed. Some participants suggested that the requirement to follow guidelines could be incorporated into the exploitation contracts although some concern was expressed that guidelines could be changed quickly but contractors would still be bound to follow them. A balance needs to be found between ensuring sufficient flexibility to ensure continuous improvement and certainty for the contractors.
- How to embrace and incentivise change whilst providing certainty in the regulatory regime in a quickly evolving industry. This discussion included the possibility that the regulations or guidelines could provide incentives to improve the design and environmental performance of mining technology – for example a “plume tax” or “offsetting” or a reduction in the regulatory burden/regulatory streamlining. The

participants recognised that there are concerns and difficulties with such an approach.

- That it would be for the Inspectorate to ensure that the regulations and guidelines were being followed. Participants drew a parallel between the approach taken to shipping where standards are prescribed and these form part of the inspection regime.

What should the regulatory regime prescribe

- Many participants felt that the ISA should focus on prescribing performance standards in the regulations/guidelines and should not prescribe or certify a particular type of technology to be used.

Facilitated discussion to highlight key areas for Council consideration/deliberation

Facilitator: Gavin Watson, Legal Counsellor at the Foreign and Commonwealth Office

This final plenary session focused on drawing together the discussions over the two days into key issues for consideration by the Council. In opening up the discussion, Mr Watson commented on the brief mention that had been made of flag state responsibility and the interaction between that and sponsoring State responsibility. Given that mining activities will take place from vessels this is a complicated issue that merits further consideration. Participants drew attention to lessons that can be learnt from the work done by the IMO with respect to oil and gas exploitation from moving platforms.

Issues raised by participants in this final session included:

- The need to take into account that the ocean is changing due to impacts from other activities and in particular the impact of climate change. Some participants stressed the need to take into these changes and how they will impact our assessment of issues such as serious harm and cumulative effects. Other participants pointed to the need to develop new technologies and move away from our reliance on fossil fuels as a leading factor in the need for more of the metals found in the resources in the Area.
- A general recognition that not everything can or should be specified in the regulations but there is a need for greater clarity on what should be in the regulations and what will be in guidance and an assurance that these detailed topics, in particular around environmental issues, will be addressed and that stakeholders will be involved in the development of guidance.
- In developing a scientifically and statistically defensible monitoring regime you have to have some confidence that what you are monitoring is relevant – what level of effect are we trying to detect?
- The need for a confidentiality regime that is consistent across contractors.
- There needs to be a recognition that technology will not only be developed by contractors but by third parties outside of the ISA's jurisdiction. Some participants raised the need to deconflict tensions over the royalty regime and funding to improve technology/efficiencies.
- Participants again drew attention to the limited size of the group who could legitimately be described as experts – these are experts in a variety of fields that have learnt how to speak to each other. This will need to be an international group. In this context the need to ensure that young scientists are exposed to policy and regulatory discussions at an early stage in their careers was highlighted to ensure that we continue to have experts on to whom we can turn for advice as this industry develops.

Annex 1: Agenda

The organisers would like to reiterate their thanks to all of the speakers for their informative talks which set the platform for the discussions during the workshop.

For the workshop sessions, participants were allocated to small groups to discuss questions posed by the facilitator. These small group discussions were followed by a plenary discussion session.

12 Feb	Day 1, Monday 12 February 2018
08h30-09h00	Registration
09h00-09h30	<p>Welcome: Professor Alex Halliday FRS, Vice-President of the Royal Society (5 mins)</p> <p>Opening statement: Michael W. Lodge, Secretary-General, ISA (10 mins)</p> <p>An overview of the state of play of deep-sea mining by the Royal Society Professor Gideon Henderson FRS, chair of the Royal Society's work on future ocean resources (10 mins)</p> <p>Objectives & ground rules for the workshop: Lowri Griffiths, Head of the Maritime Policy Unit, UK Foreign and Commonwealth Office (5 mins)</p>
09h30-10h00	<p>Update on draft regulations: identification of key policy and legal issues Chris Brown, Legal Officer, ISA (15 mins)</p> <p>Environmental assessment and risk management: practical considerations under the regulations (15 mins) Dr Daniel Jones, National Oceanography Centre</p>
10h00-10h10	Opening address: Lord Ahmad, Minister of State (10 mins)
10h10-10h55	<p>The potential for mineral resources of the Area from a science perspective Dr Sven Petersen, Geomar (15 mins)</p> <p>The system of payments: overview of a working financial model Richard Roth, Massachusetts Institute of Technology (15 mins)</p> <p>Panel Session (Q&A) (15 min)</p>
10h55-11h25	<i>Morning tea</i>
11h25-12h15	<p>The Role and Challenges of the ISA Legal & Technical Commission in Regulatory Development: key issues (10 minutes) Christian Jürgen Reichert, ISA Legal & Technical Commission</p> <p>Co-operating with International Organizations Andrew Birchenough, International Maritime Organization (10 min) and Vladimir Ryabinin, Intergovernmental Oceanographic Commission of UNESCO (video message, 5 min)</p> <p>Regulating risk in extractive industries: a regulator's perspective (10 min) Dr Ian Selby, Crown Estate</p> <p>Panel Session (Q&A) (15 mins)</p>
12h15-13h15	<i>Lunch</i>
13h15-13h25	Introduction to workshop session 1 (10 min)

13h25-14h25	Workshop session 1: the draft exploitation regulations: structure, flow, key issues and gap discussion (60 mins) Facilitator: Hannah Lilly, Commonwealth Secretariat
14h25-14h55	<i>Afternoon tea</i>
14h55-15h25	Plenary: feedback / discussion on workshop session 1 (30 mins)
15h25-15h30	Introduction to workshop session 2 (5 mins)
15h30-16h30	Workshop session 2: the respective roles of sponsoring States, flag States, the ISA and other relevant organizations under the regulations (60 mins) Facilitator: Dr Neil Craik, University of Waterloo
16h30-17h00	Plenary: feedback / discussion on WS2 (30 mins)
17h19h30	Drinks reception (2h00)

Feb 13	Day 2, Tuesday 13 February 2018
09h00-09h50	<p>Highlights from Day 1 Lowri Griffiths (5 min)</p> <p>Objectives Day 2 Alfonso Ascencio-Herrera, Legal Counsel and Deputy to the Secretary-General, ISA (5 min)</p> <p>Perspective from a sponsoring State Rena Lee, Singapore (10 min) (These views were presented in a personal capacity)</p> <p>Perspective from a non-sponsoring State Thembile Joyini, South Africa (10 min) (These views were presented in a personal capacity)</p> <p>Engaging with the ISA: a view from civil society Pew Charitable Trusts, Dr Winnie Roberts, Officer, Environment International, Pew Charitable Trusts (10 min)</p> <p>Panel Session (Q&A) (10 min)</p>
09h50-10h00	An overview of the scientific input to the ISA process so far Dr Gordon Peterson, Natural History Museum (10 mins)
10h00-10h05	Introduction to workshop session 3 (5 mins)
10h05-11h05	Workshop session 3: engaging with the scientific community: how to ensure best scientific advice is taken into account in developing and implementing the regulatory regime (60 mins) Facilitator: Professor Gideon Henderson FRS
11h05-11h30	<i>Morning tea</i>
11h30-12h00	Plenary: feedback /discussion on workshop session 3 (30 mins)
12h00-13h15	<p>Workshop session 4: The system of payments: balancing interests</p> <p>Progressing financial terms: objectives, principles and developments to date: Chris Brown, ISA (20 mins)</p> <p>Plenary: facilitated discussion and feedback on advancing development of the payment mechanism (55 mins) Facilitators: Dr Randolph Kirchain and Richard Roth, Massachusetts Institute of Technology</p>

13h15-14h15	<i>Lunch</i>
14h15-14h40	Plenary: continue facilitated discussion (25 mins)
14h40-14h45	Introduction to workshop session 5 (5 min)
14h45-15h45	Workshop session 5: future-proofing the regulations: supporting best practice and technological change (60 min), Facilitator: Professor Rachel Mills, University of Southampton
15h45-16h10	<i>Afternoon tea</i>
16h10-16h35	Plenary: feedback / discussion on workshop session 5 (25 mins)
16h35-17h05	Plenary: Facilitated discussion to highlight key areas for Council consideration / deliberation e.g. policy approaches, direction to the Legal & Technical Commission on regulatory development & regulating activities (30 mins), Gavin Watson, FCO
17h05-17h15	Closing observations: Michael W. Lodge, Secretary-General, ISA Closing remarks: Lord Oxburgh KBE, HonFREng, FRS

Full presentation links:

- <https://royalsociety.org/~media/policy/projects/future-oceans-resources/presentations/an-overview-of-the-state-of-play-of-deep-sea-mining-by-the-royal-society.pdf>
- <https://royalsociety.org/~media/policy/projects/future-oceans-resources/presentations/update-on-draft-regulations-identification-of-key-policy-and-legal-issues.pdf>
- <https://royalsociety.org/~media/policy/projects/future-oceans-resources/presentations/practical-considerations-for-the-environmental-management-of-deep-sea-mining.pdf>
- <https://royalsociety.org/~media/policy/projects/future-oceans-resources/presentations/the-potential-for-mineral-resources-of-the-area-from-a-science-perspective.pdf>
- <https://royalsociety.org/~media/policy/projects/future-oceans-resources/presentations/modeling-the-economics-of-seabed-mining.pdf>
- <https://royalsociety.org/~media/policy/projects/future-oceans-resources/presentations/role-and-challenges-of-the-ltc-in-regulatory-development-key-issues.pdf>
- <https://royalsociety.org/~media/policy/projects/future-oceans-resources/presentations/an-introduction-to-the-work-of-the-international-maritime-organization.pdf>
- <https://royalsociety.org/~media/policy/projects/future-oceans-resources/presentations/offshore-extractives-governance-regulatory-risks-summary.pdf>
- <https://royalsociety.org/~media/policy/projects/future-oceans-resources/presentations/perspective-from-a-non-sponsoring-state.pdf>

Annex 2: Opening comments ISA Secretary-General Lodge

I wish to thank the Foreign and Commonwealth Office for convening this workshop and the Royal Society for hosting us.

I think it is appropriate to begin by reminding ourselves of where we are starting from and where we are going.

Fifty years ago, the international community took a decision to set aside the resources of the seabed beyond national jurisdiction as the common heritage of mankind and to place its administration in the hands of an international organization to be created for that specific purpose.

That decision was motivated by the discovery of high grade mineral resources on the seabed and concerns that exploitation of these resources would be monopolized by a few technologically advanced countries without due regard to the interests of mankind as a whole.

The alternative would have been that access to those mineral resources would have been on a first-come, first-served basis, without international management. There would be a serious risk of conflict between rival claimants. The financial and economic benefits from these riches would end up in the pockets of the few, and no single organization would have regulatory oversight.

At a time when some appear to want to enter into an existential debate about whether deep sea mining should be permitted to go ahead or not, we do well to remember that the international community passed that point already many years ago.

Part XI of the UN Convention on the Law of the Sea establishes a carefully balanced and comprehensive legal regime that not only safeguards the rights and interests of all mankind, but also pays particular attention to the protection of the marine environment from harmful impacts. Rather than seabed mineral resources being open to all, without restriction, access is permitted only under a contract with the International Seabed Authority, under strict conditions and subject to the supervision of the Council. In this way, the Convention guarantees the rights of seabed miners, whether States, state enterprises or private entities sponsored by States, whilst protecting the interests of the entire international community. It is a unique and unparalleled international organization in terms of its governance structure and ability to create and implement rules relating to future mining activities.

As a result of this stable and secure legal regime, we have seen almost forty years of steadily increasing investment in exploration of the deep seabed. Exploration – which produces no financial return – consists primarily of identifying mineral resources and conducting environmental studies. The contribution of this preparatory work to our understanding of deep sea ecosystems and mineral resources has been immense.

Thanks to these preparatory investments, coupled with tremendous advances in offshore technology, we are now at the stage where we can see that deep sea minerals

can provide a stable and secure supply of critical minerals to benefit mankind in the future. As well as having the potential to provide a low cost, environmentally sound, supply of the minerals needed to drive the smart economy, they could also contribute to the Blue Economy of several developing States.

Thanks to the Convention, the financial and economic benefits of this new industry have to be shared for the benefit of mankind as a whole – something that has not been achieved in any other sector. This has a deep historical significance.

Our task now is to operationalize the basic rules set out in the Convention, particularly in Annex III, not to overwrite them or to alter the delicate balance between rights and interests that is contained in Part XI of the Convention. We also need to bear in mind that regulations are primarily intended to govern the relationship between the Authority and contractors and to establish the terms of contracts, not to create new legal obligations on States Parties or new legal rights.

This is a task that is expressly conferred on the Authority by the 1994 Implementation Agreement, where it is listed as one of the priority tasks to be done before mining starts.

Successfully completing this task will provide the essential framework for investors to make the commercial decision as to whether to proceed to mining or not. The point is that without such a framework, no commercial decisions can be taken.

I want to make just three points about the discussions today and tomorrow.

First, this workshop comes hard on the heels of a wide-ranging stakeholder consultation process. I want to take the opportunity to thank all those who contributed to that process. I have read all the submissions, which I think were enormously constructive and well-considered. All the responses have been carefully reviewed and we in the secretariat have done our best to identify the common themes running through them as food for thought during this workshop. I also want to acknowledge the separate contribution by Pew Environment Group and its Code Project, which once again demonstrates the value of constructive contributions to the debate by civil society.

I would suggest that we focus our discussions at this workshop on the themes identified in the discussion document provided by the secretariat. These are the areas where it is clear that different interests see issues through different lenses. If we are going to make progress in formal negotiations, it is important that we begin to clarify any misunderstandings and understand one another's positions.

Of course, it is not possible for everyone to be represented in a workshop such as this, but I believe nobody can say we have been anything less than fully transparent in our approach to the draft regulations.

Second, I want to repeat a point I have made before about the need to take a rational and incremental approach to regulation. There may be many questions and doubts about the long-term consequences of deep sea mining, but this industry is not going

to happen overnight nor to a significant scale in its initial stages. Contractors will advance their activities according to different timescales and we need to consider what is practical and feasible in terms of the anticipated scale and magnitude of actual mining operations. Whilst we may see multiple mining operations decades from now, it is likely that we will start with only one or two operations. I would like to emphasize once again the importance of contractors helping all of us to understand the likely magnitude and scale of different mining scenarios as well as telling us what is realistically achievable in practice and commercially as far as monitoring is concerned.

The key point is that we are not going to see this industry suddenly open up overnight. Our focus should be on establishing a sound structural framework firmly rooted in the Convention, specifying the respective rights and duties of contractors and the financial terms of contracts, that will allow investments to be made to proceed to the next phase of development. It is unrealistic and naïve to expect that all the detailed standards and guidelines can be put in place at the same time. We do, however, need to understand and agree on the process and timeframes by which these standards and guidelines will be developed.

Third, I want to take this opportunity to draw your attention to the proposals I will be making to the Council next month to address the issue of regional environmental management plans, which are called for as part of the Authority's overall policy framework for environmental management. These proposals, which are available on the website, include a series of multi-stakeholder workshops to develop regional environmental management plans, including the identification of areas of particular environmental interest, in areas currently subject to exploration activity.

I know that both the Council and the General Assembly of the United Nations have been calling for action on this matter for several years and that is why I have made this one of the priority issues to be addressed in 2018 and beyond. This is an area where the participation of the scientific community will be particularly important and necessary, and I look forward to the active engagement and commitment of all stakeholders in this activity.

Annex 3: List of participants

Invitations to participate in the workshop were sent to all Council Members, members of the LTC and the Finance Committee, Member States of the ISA who regularly participate as at Council meetings although they may not currently be Council Members or who have nominated members of the LTC or Finance Committee although they are not currently Council Members. Invitations were also issued to Observers from civil society groups, to contractors, and to scientists working in relevant disciplines.

Alistair Graham	Australia
Adonia Ayebare	Uganda
Alex Halliday	The Royal Society
Alexander Piotrowski	University of Cambridge
Alexei Orel	Russia
Alfonso Ascencio-Herrera	International Seabed Authority
Alison Swaddling	Commonwealth Secretariat
Andrew Birchenough	International Maritime Organization
Andrew Scarsbrook	UK
Antoine Misonne	Belgium
Brigitte Schwadorf-Ruckdeschel	Germany
Chris G Brown	International Seabed Authority
Chris Hauton	University of Southampton
Christian Juergen Reichert	Germany
Christopher Williams	UK Seabed Resources Ltd
Colin Glen	Foreign and Commonwealth Office
Daniel Jones	Natural Environment Research Council
Daniel Wilde	Commonwealth Secretariat
Didier Ortolland	France
Diva Amon	The Natural History Museum
Dmitry Aleynik	Scottish Alliance for Geoscience Environment and Society
Duncan Currie	Greenpeace
Eli Jarmache	France
Elizabeth Surkovic	The Royal Society
Fitzgerald McArthur Jeffrey	Trinidad and Tobago
Fredrik Haag	International Maritime Organization
G A Ramadass	India
Gaston Fernandez Montero	Chile
Gavin Watson	Foreign and Commonwealth Office
Gerard Barron	Deep Green
Gideon Henderson	University of Oxford
Gordon Paterson	UK
Gordon Petersen	The Natural History Museum
Greg O'Brien	USA

Grzegorz Pytel	Poland
Hannah Lilly	Commonwealth Secretariat
Hans-Peter Damian	Germany
Helene Margue	The Royal Society
Hugh F Durrant-Whyte	Ministry of Defence
Ian Selby	Crown Estate
Irina Ponomareva	Russia
Jacob Stübig	Germany
James Ndirangu WAWERU	Kenya
Jeff Ardron	Commonwealth Secretariat
Jemma Lonsdale	UK
Jennifer Warren	UK Seabed Resources Ltd
Joshua Brien	Cook Islands
Joury Van Gijseghem	DEME Group (GRS)
Ju Lei	China
Julian Wilckens	Germany
Kathryn Youel Page	USA
Ken Wong	Canada
Kerry-Ann Spaulding	Jamaica
Kris Van Nijen	DEME Group (GRS)
Kristina Gjerde	IUCN
Laura Crone	New Zealand
Leticia Lopez Sandoval	Embassy of Mexico
Li Linlin	China
LIU Feng	China
Lowri Griffiths	Foreign and Commonwealth Office
Maria Baker	National Oceanographic Centre
Mark Hannington	Geomar
Mary-Lynn Dickson	Canada
Mathias Franke	Chile
Matt Gianna	Deep Sea Conservation
Matthias Haeckel	Geomar
Michael Lodge	International Seabed Authority
Neil Craik	University of Waterloo, Ontario
Olav Myklebust	Norway
Paul Lusty	British Geological Survey
Pennelope Althea Beckles	Trinidad and Tobago
Peter Butler	Rio Tinto
Peter Jantzen	JS Capital Power
Piotr Czepulonis	Poland
Piotr Nowak	Poland
Przemysław Borkowski	Poland
Rachel Mills	University of Southampton
Randolph Kirchain	Massachusetts Institute of Technology
Rena Lee	Singapore

Richard Roth	Massachusetts Institute of Technology
Richard Walker	The Royal Society
Robert Heydon	Nauru Ocean Resources Inc
Rodrigo Urquiza	Chile
Samantha Smith	Blue Globe Solutions
Siosia Utoikamanu	Tonga
Sophie Mirgaux	Belgium
Sven Petersen	Geomar
The Lord Oxburgh	The Royal Society
Thembile Elphus Joyini	South Africa
Théophile Ndougsa Mbarga	Cameroon
Tom Diederer	Netherlands
Tomasz Abramowski	Poland
Tomoko Tauchi	Japan
Tracey Shimmiel	British Geological Survey
Valerii Iubko	Russia
Winifred M Broadbelt	Netherlands
Winnie Roberts	Pew Charitable Trust
Zentaro Naganuma	Japan

Annex 4 – Workshop session 1 handout

Overview of Contractor Activities (Polymetallic nodules)

	Under EXPLORATION Contract		Under EXPLOITATION Contract					
Contractor activities	Exploration phase: +- 15 years	Contract continues in force	<i>Indicative timings:</i>	+ 5 years?	+ 3 years?	+ 2 years?	+ 20 years?	+ [5] years
			Feasibility	Construction	Production	Commercial Prodn.	Closure	
Pre-feasibility stage / study ¹	Est. mineable areas / grade & quality of resource (inferred / indicated); testing of components	[Application for Approval of a Plan of Work for Exploitation]	Continued exploration activities					
Environmental baseline, risk assessment, monitoring and management	Est. baselines; monitoring programme + Prior EIA for specific activities (e.g. testing)		Continued environmental assessment. Monitoring and management under <i>Environmental Management and Monitoring Plan</i>					
Feasibility stage / study (bankable) ²			FS required to raise investment capital (probable / proven reserve)					
Construction				Infrastructure (e.g. Mining vessel)				
Production: ramp up (commencement of mining activities)					Per Feasibility Study / Mining Plan			
Commercial production						Per FS / Mining Plan		
Closure / Post closure monitoring								Per Closure Plan

¹ A comprehensive study of the viability of a mineral project that: (a) has advanced to a stage where the mining method has been established and where an effective method of mineral processing has been determined; and (b) includes a financial analysis based on reasonable assumptions of technical, engineering, legal, operating and economic factors and the evaluation of other relevant factors sufficient for a suitably qualified and experienced qualified person to determine, within reason, whether all or part of the mineral resource may be classified as a mineral reserve (ISBA/21/LTC/15).

² A comprehensive study of a mineral deposit in which all geological, engineering, legal, operating, economic, social, environmental and other relevant factors are considered in such detail that it may reasonably serve as the basis for a final decision by a financial institution to finance the development of the deposit for mineral production (ISBA/21/LTC/15).

Understanding of the proposed process for exploitation under the regulations¹

Pre-application activities

- Applicant provides scoping report in accordance with information requirements (Annex IV)
- Scoping report published and comments invited
- Commission considers at next meeting and provides comments
- Applicant may revise scoping report

Application to undertake exploitation

- Applicant undertakes an EIA to inform EIS
- State applies for approval of Plan of Work and provides the following

¹ Extracted *verbatim* from Appendix I of New Zealand's submission to the draft regulations.

- Pre-feasibility study (in accordance with information requirements in Annex II)
- EIS (in accordance with Annex V)
- Financing Plan (in accordance with Annex III)
- Emergency response and contingency plan (in accordance with Annex VI)
- Health, safety and maritime security plan
- Training plan
- EMMP (in accordance with Annex VII)
- Closure Plan (in accordance with Annex VIII)
- Administrative fee (in accordance with Annex II)
- EIS, EMMP and CP published and comments invited
- Applicant may revise documents in response to comments within 60 days
- Commission considers application at next meeting and can request additional information from applicant
- Applicant must respond to any information request within 90 days

Decision-making process

- Commission provides report and recommendations to Council based on criteria (in accordance with draft regulation 7, 10 and 21)
- Applicant can make representations within 90 days if notified by Commission that it does not meet the criteria
- Report of Commission published
- Council considers report and recommendations at next meeting (in accordance with criteria in UNCLOS Art 162)

Pre-commencement requirements

- At least 12 months prior to production, contractor provides feasibility study, revised financing plan, a revised EMMP and a revised CP
- EMMP and CP published and comments invited
- Applicant may revise documents in response to comments within 60 days
- Commission considers at next meeting and may approve or recommend amendments as a condition for approval
- Approved plans published and contractor notified

Monitoring and review

- Activities undertaken in accordance with EMMP and contract
- Environmental Performance review submitted within 6 months of start of 2nd, 5th and 10th years following commencement
- Exploitation contract will provide for a review between the SG and the contractor of the activities under a Plan of Work (not greater than 5 years). This may result in modifications to be approved by the Commission and Council.

Modifications and Renewal

- An applicant can request to amend or modify its application in light of new knowledge or information at any time prior to consideration of the Commission's report by the Council or any time prior to the execution of an exploitation contract.
- Only minor or administrative changes are allowed to a Plan of Work annexed to a contract, otherwise approval must be sought from the Commission and Council under regulations 10 and 11.
- The contractor may renew its contract for periods not more than 10 years. If the SG determines the Contractor is in compliance with the conditions set out in draft regulation 10 of the Standard Clauses for exploitation contract, the contract is renewed on the same terms and conditions.

Close-out requirements

- Contractor submits final CP for approval one year prior to cessation of activities
- CP published and comments invited
- Contractor may revise CP in response to comments within 60 days
- Commission considers at next meeting and may approve or recommend amendments as a condition for approval
- Contractor continues to monitor after cessation for period set out in CP