DEVELOPING A REGULATORY FRAMEWORK FOR MINERAL EXPLOITATION IN THE AREA: REPORT TO MEMBERS OF THE AUTHORITY AND ALL STAKEHOLDERS

SUBMISSION OF THE NEW ZEALAND GOVERNMENT

New Zealand is pleased to submit on the draft framework for the regulation of exploitation activities in the Area dated March 2015. We commend the ISA for seeking the full engagement of all stakeholders in the latest stage of the development of a regulatory framework for the future recovery of mineral resources from the Area.

New Zealand has been a member of the International Seabed Authority since 1996. New Zealand does not hold any contracts for exploration in the Area, but does have experience regulating seabed mineral mining activities in its territorial sea and exclusive economic zone (EEZ). New Zealand's regulatory system is split between a number of agencies that consider the economic feasibility of mining separately to the effects of mining on the environment. Exploitation activities cannot commence without both a permit under the Crown Minerals Act 1991 and a marine consent under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (the EEZ Act). Exploitation permits for iron-sand (Titanomagnetite) and phosphate nodule mining have been granted by New Zealand Petroleum and Minerals (the administrator or New Zealand's mineral estate) on behalf of the New Zealand government. The environmental effects of mining for these minerals have recently been considered under the EEZ Act, with consent being refused for both applications.

On a general note, New Zealand supports the broad framework for mineral exploitation that has been drafted by the ISA, but recognises that a considerable amount of detailed work remains to be done. We set out our observations, focusing on issues that resonate in the context of our domestic experience. Our thinking will develop as these issues are progressed in more depth in due course and we look forward to participating in further consultative processes.

Part II: Applications for approval of plans of work for exploitation in the form of contracts

Form of applications

We agree that each area of exploitation may have different physical characteristics and environmental conditions, but do not consider it necessary for separate plans of work to be required unless there are "material" differences between areas or differing extraction techniques due to these environmental differences.

Financial and technical capabilities

Overall, New Zealand agrees that a greater level of detail will be required to evaluate capability in connection with exploitation than for exploration. Our initial observations in relation to the draft regulation are that:

- A clear division will need to be made between the financial and technical capabilities (and requirements) of entities and State sponsors.

- It is important that the differences in financial and technical requirements between exploration and exploitation are understood, so that a fresh assessment can be made of the contractor's capabilities specific to exploitation.
- Health and safety requirements should be considered as part of the assessment of a contractor's financial and technical capabilities.
- A number of the proposed Exploitation regulations cover matters that will be of value in making the assessment (e.g. feasibility study, equity interest, financing plan, responsibility and liability and environmental bonds). These matters should be clearly referred to in the evaluation criteria for the Commission's assessment procedures.

Awarding rights to applicants without adequate consideration of their capabilities will prevent the effective administration, utilisation, and development of the Area. Assessing an applicant's financial and technical capability ensures that only capable applicants are given rights to exploitation, and may avoid awarding exploitation rights to parties that are seeking rights for purposes other than exploitation (i.e. resource banking).

Feasibility study

New Zealand notes the difficulty of translating principles of land based or shallow water mining to the deep seabed environment. Direct applicability of good practice from these industries should not be assumed.

While environmental impact is taken into account more fully through the Environmental Impact Statement (EIS), we note that this does not preclude the need to take into account environmental considerations in the feasibility study, in particular the impact of any required environmental research, mitigation and remediation on overall economic feasibility.

When assessing the commercial viability of exploitation activities, New Zealand stresses the importance of validated models, and the appropriate use of data from prospecting and exploration activities.

Environmental impact statement (EIS) and Environmental management plan (EMP)

New Zealand makes a number of overall observations about this draft Exploitation regulation:

- As noted above (feasibility study), it may be difficult to translate principles of land based or shallow water mining to the deep seabed environment; direct applicability should not be assumed.
- Clarification is required as to the difference between an EIS and an Environmental Impact Assessment (EIA), and at what point an EIA is required. The draft EIS regulation states that the EIS must be "based on the EIA" but does not previously mention an EIA.
- Consideration needs to be given as to whether the information required about baseline environmental conditions in the Exploration Regulations is adequate to establish an application for exploitation activity. The regulation should set clear expectations for baseline data.
- It will be important to explain what is meant by 'significant effects', on a resource by resource basis, and for particular ecosystems and their components. See the report (link

below) *Environmental risk assessment of discharges of sediment during prospecting and exploration for seabed minerals*, which is an example of a risk assessment of one particular type of effect (discharge of sediment) of iron sand prospecting and exploration. If a regulation uses subjective terms such as "appropriate" or "significant" to describe effects, it should establish qualitative thresholds for those terms (e.g. when an effect becomes "significant" or ceases being "moderate").

- Work should be undertaken to clarify the meaning of "cumulative effects" for the purpose of the Exploitation Regulations, including establishing what types of effect contribute to the cumulative effect (e.g. fishing, climate change, other mining activities, other existing users), the geographic area over which cumulative effects must be considered, and 'synergistic effects' (the effects of multiple activities on a single receptor).
- Consideration should be given to the effect of exploitation activities on other activities taking place in the water column above the Area. For example effects on fishing for demersal fish stocks should be considered, and consultation with Regional Fisheries Management Organisations should be provided for, as part of an EIS. We recommend that the Authority considers the interaction of the proposed Regulations with area-based fisheries management such as those established by the South Pacific Regional Fisheries Management Organisation.
- New Zealand strongly agrees that "environmental impact areas" beyond the immediate exploitation area will need to be considered, along with any dependent or associated ecosystems. An example of a significant issue considered by decision-makers under the EEZ Act is the spatial impact and extent of sediment plumes. Sediment plume modelling requires sufficient baseline information to inform the model so that the effects of the proposed mining on the immediate and wider area can be assessed. For this reason, "environmental impact areas" may also warrant consideration as part of exploration activities.
- New Zealand recommends a requirement for ongoing monitoring of environments remote from the exploitation area but similar in nature. This will enable disaggregation of effects of the activity from background environmental effects.
- New Zealand suggests that EMPs are verified or peer reviewed by an independent environmental consultant, as per EISs. An appropriate process should be established to ensure independent verifiers are competent and appropriately qualified.
- With regard to the application of the precautionary approach in EMPs, see our comments below in Part IV *Protection and Preservation of the Marine Environment*.
- New Zealand emphasises the importance of suitable verification of models that are used to inform an assessment of environmental effects. Verified models will necessarily form part of the EIS and will be a significant element of the decision making process for the LTC. In some cases, models will be useful to inform the assessment of effects on ongoing management and adaptive management processes.
- New Zealand looks forward to participating in multi-stakeholder workshops post development of EIS and EMP templates.

Generally, New Zealand notes the importance of the Regulations taking into account relevant provisions from the United Nations Convention on the Law of the Sea, including article 145 (Protection of the Marine Environment) and Article 147 (Accommodation of activities in the Area and in the Marine Environment). The Regulations should be compatible with other ongoing United

Nations processes such as those on marine protection and marine biological diversity beyond national jurisdiction.

Social impact assessment and action plan (SIA)

The draft framework notes that no immediate communities or individuals are potentially significantly affected by activities due to remoteness. New Zealand notes that there has been significant interest, both domestic *and* global, in applications for seabed mining activities under its EEZ Act. We believe that the possibility of considerable community interest in proposed exploitation activities should not be discounted. For example, societies that have historically been highly migratory, or that have spiritual connections with the ocean, may be extremely interested in, and consider themselves impacted by, deep seabed mining proposals. New Zealand does not believe it is safe to assume there are no affected communities or individuals at this point.

New Zealand also believes that SIAs may need to include cultural considerations, and that they certainly should not preclude cultural considerations e.g. cultural connections with marine mammals and other internationally migratory species.

The draft framework refers to "other users of the marine environment". New Zealand's EEZ Act uses the term "existing interests" and identifies those whose interests must be taken into account by decision makers. New Zealand notes that it will be useful to identify those with existing interests in the area, or at least to define what 'other uses/users' of the marine environment should be considered. It will also be crucial (though complex) to consider the weight to be given to the interests identified by other users. Consideration of "other users" will need to encompass the Area's ability to continue to provide ecosystem services, scientific research potential, and other planned uses/interests.

New Zealand asks whether thought should be given to the social/cultural impact of activities (both positive and negative) on State sponsors.

Closure plan

New Zealand notes that closure plans will be resource and location specific (e.g. in terms of restoration obligations). Post closure environmental management and monitoring obligations should be included as part of the feasibility study and EIS/EMP requirements. There may also be closure considerations resulting from a SIA.

Any closure requirements should align with other international obligations e.g. for the removal or dumping of offshore installations and structures.

Size and location of exploitation area(s) covered by the plan of work

New Zealand agrees that guidelines need to be drawn up identifying criteria to be applied in assessing the size and location of exploitation areas. We note that this work could be undertaken as part of an SEMP process, and that engagement with coastal States and other users of the marine environment will be important. Clear measures for evaluating the environmental and economic consequences of decisions on size and location will need to be established. New Zealand refers to its

comments below in relation to varying proposed area size and location as a method of adaptive management.

We also agree that it is important to consider the proximity of exploitation areas to marine protected areas and vulnerable marine ecosystems, and note that these are two examples of a range of mechanisms through which areas of ecological importance are identified. Other examples include Ecologically and Biologically Significant Areas under the Convention on Biological Diversity, Important Bird Areas identified by BirdLife International, and fisheries management areas such as those established by the South Pacific Regional Fisheries Management Organisation.

We note that much work remains to be done in the Area to identify areas of ecological importance, and contractors are likely to play a significant role in identifying such areas within the area of interest to their application.

Public review of the EIS, EMP and SIA

The draft framework notes that public interests are not immediately identifiable in the Area. New Zealand notes that there has been significant interest, both domestic *and* global, in applications for seabed mining activities under its EEZ Act. We believe that the possibility of considerable public interest in proposed exploitation activities should not be discounted. It is important that the degree of influence public engagement can have on impact assessments and management plans required by the RRPs is made very clear, so that the expectations of those who choose to engage are appropriate.

New Zealand has extensive experience with collaborative processes and engagement with the public and existing interests over environmental matters. We agree that it is crucial that an open, inclusive and cost-effective process is established. Work should also be undertaken to identify existing users of the marine environment in the Area (this could occur as part of an SEMP process).

Consideration by the Legal and Technical Commission

New Zealand encourages the Authority to elaborate a process for how conditions will be set, as our experience suggests that it is important for the contractor and decision maker to engage in robust negotiation over conditions.

New Zealand also believes that it will be important to consider the sequence of all elements of the contracting process, from conclusion of exploration contracts through to commencement of exploitation activities. It is crucial that contractors have certainty about e.g. how public comment on impact assessments and management plans will be incorporated into the decision making process, and how the LTC will consider other international obligations and so forth.

Independent technical expert working group/sub-committees

New Zealand supports the establishment of an independent technical expert working group/sub-committee to assist the LTC in considering applications and ensure it has access to the right technical expertise. We emphasise the importance of a robust, rigorous and comprehensive process for managing applications. This would include providing opportunity for early engagement between

applicants and the Authority, and making sure that a multidisciplinary group of experts is available to the LTC throughout the evaluation of applications.

Part III: Contracts for exploitation

Duration of contracts/renewal

New Zealand considers that the precise point at which an exploitation contract *commences* should be specified, as it will impact the economic life of the project. For example, commencement could be tied to; the initiation of exploitation of the resource, the beginning of construction, the date agreement is reach on the terms of the contract, or to some point in relation to relinquishment of an exploration contract.

New Zealand also considers that time required for restoration/rehabilitation of the environment be considered when determining the duration of contracts. This should include consideration of the need for ongoing post-rehabilitation monitoring. Contracts should be in place until all obligations have been met, including obligations imposed on the contractor to restore or rehabilitate the environment and conduct ongoing monitoring.

The draft framework suggests that it may be possible to approve stages of exploitation operations (which may be a form of adaptive management). However, New Zealand notes that a staged approach to exploitation that is economically viable for the operator can be challenging to achieve due to a range of factors, for example:

- Start-up costs;
- Holding costs;
- Securing viable product markets for reduced volume; and
- Transport economics for smaller volume.

See comments below in relation to adaptive management. Thought should be given to how adaptive management (and conditions) can best be used when setting contract durations and considering renewals.

Performance requirements

The draft framework states that a contractor should be permitted to make "minor" changes to an approved programme of activities without recourse to the Authority, but that "material changes" will require the prior approval of the Authority. New Zealand considers that it will be important to clearly define what "minor" and "material" changes are, and that regulations and conditions should ensure this is clearly understood.

New Zealand's EEZ Act contains a provision relating to "minor" changes to activities. It has proven difficult to establish what a "minor" change is – either on a 'threshold' basis or case-by-case. New Zealand has also encountered issues defining what activities are part of an approved programme of activities e.g. is routine maintenance part of the programme, even if the maintenance activity is not particularised in the programme and has its own effect? We recommend the Authority consider the level of detail that will be appropriate for exploitation contracts.

These and other similar, detailed issues should be considered when drafting performance requirements for exploitation activities. For example, requirements must be measurable and enforceable.

Conservation of the natural resources of the Area

New Zealand is implementing dedicated discharge and dumping regulations under the EEZ Act (see link below), which include consideration of management of waste. New Zealand would be interested in contributing further to this Regulation through the development of specific RRPs dealing with management of waste.

Vessels operating in the Area

New Zealand notes that particular attention should be given to discharge and dumping requirements for contractor's vessels operating in the Area. Ships' operational discharges and certain dumping activities are covered by existing obligations under MARPOL and the London Convention (and will apply in the Area), but discharges that fall outside these conventions will need to be regulated by the Exploitation Regulations.

Protection of submarine cables and pipelines

New Zealand recommends regular consultation with appropriate organizations (including the International Cable Protection Authority) in an effort to avoid future conflicts between exploitation areas and newly laid submarine cables and pipelines.

New Zealand also recommends the Authority considers the use of cable/pipeline protection zones, to enable exploitation areas to be established around cables and pipelines but without adversely impacting them.

Periodic review of the implementation of the plan of work for exploitation

New Zealand suggests that specific provision is made enabling the Authority to review conditions on plans of work/contracts.

Responsibility and liability

New Zealand agrees that a legal workshop should be held to explore and develop principles of responsibility and liability in the Area. Important questions for consideration include:

- When there should be liability;
- What the basis is for liability;
- The appropriate attribution of fault e.g. strict liability or otherwise;
- The availability of damages and the limitation of liability;
- Financial security; and
- Compensation mechanisms.

New Zealand notes that the same considerations will need to be given to liability and compensation issues in relation to ships as well as structures or installations operating in the Area. We suggest that it is worth considering existing international models for liability and compensation, but in the

absence of an existing applicable regime, one will need to be developed and imposed through the Exploitation Regulations.

Part IV: Protection and preservation of the marine environment

Protection and preservation of the marine environment

New Zealand believes that it would be appropriate for this Regulation to express an ecosystem based management approach to protection and preservation of the marine environment, and an acknowledgement of migratory species. This will require engagement with other organisations with responsibility for managing activities in areas beyond national jurisdiction, to support alignment of environmental management efforts.

We also believe that consideration should be given to the effect of exploitation activities on fishing for demersal fish stocks, and the interaction of the proposed Regulations with area-based fisheries management such as those established by the South Pacific Regional Fisheries Management Organisation.

With regard to incorporation of the precautionary approach, New Zealand believes that it is not sufficient to simply state a requirement for contractors to apply a precautionary approach. More thought needs to be given as what application of the precautionary approach actually means in practice, especially for relatively undescribed environments and novel, untested activities and technologies. Deliberate decisions need to be made as to whether the Regulations intend to apply a strong or weak precautionary approach, including whether the contractor bears the burden of proving no risk and if not, how the Authority will prove the risk is sufficient to warrant protective action being taken.

Guidance should be drafted to clarify how the precautionary approach is to be applied. This should include guidance on how adaptive management is to be applied in situations where taking a precautionary approach is appropriate (see comments below on adaptive management). New Zealand's experience with seabed mining applications under EEZ Act suggests that although the precautionary approach and adaptive management are important principles, there can be challenges in implementing them.

On the issue of dumping in the Area, New Zealand is implementing dedicated discharge and dumping regulations under the EEZ Act (see link below). New Zealand would be interested in contributing further to the development of specific dumping RRPs.

New Zealand notes that consideration should be given to the distribution, chemistry and Eco toxicity of radioactive marine minerals in the Area. In New Zealand, the effects resulting from the presence of uranium in phosphate nodules was considered as part of Chatham Rock Phosphate's application to mine phosphorite nodules from the Chatham Rise (see link below). New Zealand would be happy to discuss this issue further with the Authority.

Environmental management

New Zealand recommends a requirement for contractors to undertake ongoing monitoring of environments remote from the exploitation area but similar in nature. This will enable

disaggregation of effects of the activity from background environmental effects. We note this is not recommended as a substitute for a careful assessment of the proposed exploitation area as part of the feasibility study and impact assessments.

The draft framework states that "material revisions" to an environmental management plan will require the prior approval of the Authority. New Zealand considers that it will be important to clearly define what a "material revision" is.

New Zealand questions the need for contractors to make available a public annual statement of its environmental performance. It is unclear what the purpose of such publication would be. We consider that public review of the contractor's EIS/EMP/SIA adequately provide for public participation in exploitation activities in the Area.

Emergency orders

New Zealand believes that consideration should be given to the relationship between States' current search and rescue obligations and contractors' emergency response plans. For example, the Regulation may require contractors to liaise with the State who's Search and Rescue area they will be operating in when designing emergency response plans.

We note that it would be useful to distinguish between search and rescue emergencies and other types of emergency. Search and rescue has a well-developed international framework with clear obligations on States. In contrast, environmental emergencies will require quite different considerations, e.g. what is the definition of an emergency, who has responsibility for responding to an emergency, how financial obligations should be assessed, and how liability or compensation should be managed.

When considering environmental emergencies, particular emphasis should be given to emergency response to vulnerable/sensitive ecosystems. Identification of such areas, and plans for response to events that pose a threat of serious harm, could form part of a strategic environmental assessment process (see below).

Strategic environmental management plan (SEMP)

New Zealand broadly supports the concept of a strategic environmental assessment of the Area. However, whilst we agree that there could be considerable benefit in conducting such as assessment and subsequently developing SEMPs (either regionally or of the Area), we are concerned that doing so could lead to a delay in implementation of the Exploitation Regulations.

If SEMPs are developed after the Regulations have been implemented, there will be a risk of inconsistency between exploitation contracts and the requirements of the SEMPs.

New Zealand therefore believes that urgent steps should be undertaken to scope a work plan for developing SEMPs, so that timing and transitional issues can be fully understood by all stakeholders.

Rights of coastal States

New Zealand notes that particular attention should be given to the need for trans-boundary effects to be considered jointly under the proposed Exploitation Regulations *and* national environmental legislation.

Environmental bonds and performance guarantees

New Zealand believes that considerable work needs to be done to establish a viable model for the provision of environmental bonds/performance guarantees, including:

- Defining specifically what the bond/guarantee would be used for e.g. environmental effects resulting from what event, to what threshold of harm, to what geographical extent, how direct must the causal link be?
- Considering whether a bond/performance guarantee can offer protection in the event an activity is abandoned prior to closure, and support post-activity monitoring and restoration.
- What will the obligations of the State sponsor be, if any?
- An indication of the likely quantum
- The proportionality of combined obligations created by insurance, environmental liability and the proposed trust funds
- The possibility of regional environmental liability pools/industry led pools

New Zealand suggests that it is worth considering existing international environmental liability models in the oil and gas sector, such as trust funds under the Antarctic Treaty regime and various IMO regimes.

Restoration and rehabilitation of the marine environment

New Zealand observes that restoration or rehabilitation of the seafloor and associated fauna is unlikely to be feasible in many instances. The focus should therefore be on avoiding or minimising adverse effects on the functioning of the ecosystem in the first instance.

Where a contractor proposes to attempt to restore the environment, fully developed plans for the proposed restoration process must be included in the application, along with verified modelling and plans for testing any methods that are unproven. These plans should include the financial cost of restoration measures, as the limited experimentation undertaken on deep seafloor restoration indicates that it may be prohibitively expensive for contractors.

In line with High level issue 1 (information and data), New Zealand notes the difficulty of assessing the success of restoration and rehabilitation proposals where baseline information on the environment to be exploited is deficient.

If a seabed sustainability fund is established, New Zealand considers that it may be appropriate for funds to be applied to restoration experiments and mitigation techniques e.g. whether remediation may be possible following extraction of nodules or crusts through the establishment of alternative hard substrates.

Adaptive management approach

Adaptive management is provided for in sections 61, 63 and 64 of the EEZ Act (see link below). New Zealand's experience with seabed mining applications under the EEZ Act suggests that although adaptive management is an important tool, there may be challenges to be addressed in effectively implementing it, particularly in the deep sea environment. This includes identifying adaptive management techniques that are both effective at managing environmental effects and are economically viable for those undertaking the activity. It may be particularly difficult to balance the costs and benefits of exploitation in an adaptive management framework, when exploration activity and capital intensive investment in technology for exploitation has already been undertaken.

Balancing the commercial viability of operations with an obligation to avoid, remedy or mitigate serious harm to the environment is not a simple task. The input of all stakeholders will be vital in drafting a viable definition of adaptive management. New Zealand recommends that the ISA takes advice on all possible methods of adaptive management, and avoids including too narrow a definition in the Exploitation Regulations. For example, it will be crucial to provide guidance as to how 'short duration or small scale' mining can be balanced against commercial requirements.

New Zealand also recommends that the use of conditions on plans of work/contracts is expressly included in the Exploitation Regulations as a method of applying adaptive management. To be effective, conditions should be regularly reported on to ensure they are managing the effects of the activity, and it should be possible to review and amend the conditions if necessary. Ongoing monitoring and assessment of the contractor's activities will also be fundamental to enabling adaptive management of exploitation activities.

New Zealand is interested is working with the ISA to elaborate the approach to adaptive management in the Exploitation Regulations.

A review of the Exploitation Regulations themselves should be included, as the framework will be likely to require ongoing amendment as scientific knowledge is obtained and practical experience gained. New Zealand notes that the development of SEMPs could form part of an adaptive management approach to the ISA's seabed mining policy.

Seabed sustainability fund

New Zealand supports the idea of exploring establishment of a seabed sustainability fund, but notes that clear criteria will be required for deciding how the funds are applied.

Human remains and objects and sites of an archaeological or historical nature

New Zealand believes that a more comprehensive regulation regarding cultural heritage is required for the Exploitation Regulations. If regional SEMPs are developed, it may be possible to identify specific matters relating to cultural heritage in exploitation areas. It will be particularly important to consult with the communities of coastal States that are proximal to exploitation areas, and with communities that may historically have had migration paths through exploitation areas.

Part V: Confidentiality

New Zealand recognises the complexity of issues related to confidentiality, and encourages the Authority to engage further with stakeholders to ensure confidentiality provisions are workable for all users of the regime.

Part X: Review

We strongly agree that the Exploitation Regulations should be evaluated on an annual basis during the early stages of development.

Supporting documents

Environmental risk assessment of discharges of sediment during prospecting and exploration for seabed minerals (Prepared for the Ministry for the Environment by the National Institute of Water and Atmospheric Research, February 2014)

Draft Exclusive Economic Zone and Continental Shelf (Environmental Effects – Discharge and Dumping) Regulations 2014

Chatham Rock Phosphate Ltd application for marine consent under New Zealand's EEZ Act

The Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012

Final matters

New Zealand consents to the ISA Secretariat making any content of this submission publicly available.

Please direct any questions or comments relating to this submission to:

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