Developing a Regulatory Framework for Mineral Exploitation in the Area:

Stakeholder Engagement Consultation Response

An Introduction to Marine Ecological Surveys Limited;

Marine Ecological Surveys Limited (www.seasurvey.co.uk) is a marine environmental survey, consultancy and research company who has close to 40 years of experience of delivering high quality services to commercial, industrial marine clients and to public bodies. MESL provides integrated marine ecological services focussing on benthic survey design, delivery, sample analysis, data analysis and reporting. In addition, our capabilities encompass the production of benthic and multidisciplinary marine science reports, the design and delivery of monitoring programmes and the provision of strategic consultancy and advisory services pertaining to the environmental risks and issues pertaining to licensing and consenting. The company also has an extensive track record of delivery cutting edge research projects into areas including but not limited to;

- species sensitivity to disturbance;
- the recoverability of seabed fauna following disturbance;
- the evaluation and contextualisation of the importance of marine ecological resources across regional areas.

The successful delivery of such projects has helped to push back the frontiers of marine science, providing better evidence pertaining to the likely impacts of marine projects for decision makers and greater clarity and certainty to project developers. MESL works across all major marine industries, but has specific expertise in the field of marine extractive projects, having played a leading role in the science which has underpinned the development of the marine aggregates industry within the UK. MESL has international experience and is part of Gardline Marnie Sciences Limited, allowing us to extend our interests across a broad range of marine scientific disciplines – from geophysics to getechnics – and across the full extent of the world’s oceans. As a marine science survey, consultancy and research organisation MESL with deep expertise pertaining to marine extraction projects MESL is keen to lend the benefit of our knowledge and expertise to the marine mining sector and to learn with the industry as it develops. Ultimately, we hope to work with the companies and regulators operating in this industry in order to pursue the sustainable development of marine resources.

Express consent to make your personal details and submission publicly available;

Marine Ecological Surveys Limited hereby provides express consent for our personal details and this stakeholder response to be made publicly available.

Interest in future contact by the ISA and / or being part of a stakeholder group;

MESL would be delighted to be contacted at a future time by the ISA and would be very keen to be make an active contribution to any stakeholders groups of relevance to our areas of interest and expertise.
Contact details;

Daniel Brutto
Director
Marine Ecological Surveys Limited
3 Palace Yard Mews
Bath
Bath and Northeast Somerset
BA1 2NH

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

Tel +44 (0)1225 442211

Email dan@seasurvey.co.uk
www.seasurvey.co.uk

Comments referenced to the relevant parts and questions of the stakeholder document;

Part A: Financial terms and obligations

1. In delivering a best revenue opportunity for the ISA and an overall fair and equitable system, which payment mechanism would you consider preferable for the ISA and Contractors and why?

In the UK, the Government and Crown Estate (the seabed owner) has successfully operated a model which has involved two key resource and licence area charges. Firstly, the marine minerals extraction companies are required to pay an initial lump sum for the exclusive right to be the sole lessee of an area of seabed which is, in effect, a charge for sterilising an area of seabed against other uses. This charge is levied by the Crown Estate, the seabed owner in the UK. Secondly, the Government then applies a levy charge to each tonne of resource that is extracted from the seabed. In light of the transparency and simplicity of this model, it is felt that it has merit as it is not open to the accounting manipulation that a profits based system might be.

2. If a royalty mechanism is adopted for reasons of administrative convenience, how can a royalty mechanism capture, for example, economic rents over the life of an exploitation contract?

The royalty amount could be reviewed on a regular basis. Such an approach would allow the royalty to be varied in fair reflection of the value of the resource(s) being exploited. The criteria used for review could be tie to the market value of the resource(s) being exploited and/or to changes in the individual profitability of a given company or project. Work would need to be undertaken on whether the resource should be valued in a raw or refined state. A difficulty associated with tying any charges to profitability is that individual royalties would need to be assigned to each individual project and/or company and if charges are increased
for profitable projects or companies and decreased for unprofitable ones then this effectively result in the penalisation of the most efficient and best organisations.

3. Are you aware of any alternative payment mechanisms that would merit consideration by the ISA?

   Not answered

4. In your view, how frequently should any payment mechanism be reviewed from a regulatory viewpoint?

   Given the novelty of the industry at the present time, it is recommended that the payment mechanism should be monitored very regularly initially to allow fine tuning, before moving towards a less regular monitoring period as the system develops to a fair, transparent and proportionate level. With this in mind it is suggested that the mechanism should be reviewed on at 6 monthly intervals initially, with the first annual review assessing the appropriateness of this review interval. The interval could be increased or decreased on the basis of evidence. It would make sense to ultimately move to an annual review process ultimately basing the reviews on company profitability and/or resource prices.

5. The point(s) of valuation for any payment obligations under the regulatory framework needs to be identified. In land-based regimes and oil and gas regimes, theory determines that the valuation point is as close as possible to the point of extraction of the resource. In land-based regimes an approximation for this is usually the first arm’s length sale in the downstream process. Often a free on board export price or a net back system is adopted for royalty calculation purposes.

   For activities in the Area, there may be a number of possible valuation points for the minerals and metals to be exploited. Please would you consider and advise which valuation point(s) the ISA should consider in determining an arm’s-length value for the purposes of calculating the fair value of the mineral and metal resources. From an administrative viewpoint, which valuation point would be the simplest to determine?

   It will be critical to make sure that the valuation point is correct. The appropriateness of any point of valuation may vary as not all resources are created equal in terms of the composition of metals and their mean concentrations. It needs to be considered that charging operators a royalty per tonne of raw mineral will have a greater negative impact on the profitability of operators exploiting low grade resources than it would high grade resources. Options for levelling this playing field could include different upfront costs for the exploitation of different licence areas. For example a flat royalty could be charged across all operational project areas, but higher licence area costs could be applied to areas supporting higher value and concentration resources.
6. In connection with any late or overdue payments / returns by Contractors, in your opinion, what penalty or fine mechanisms should be adopted by the ISA?

Depending on the seriousness of the office the ISA should consider financial penalties, suspension of a licence or revocation of a licence.

7. The current Exploration Regulations state that an applicant must be “financially and technically capable” of carrying out a plan of work for exploration. This is considered of relevance to future exploitation regulations as well.

a. In your view what key elements should be considered in respect of “technical” capability?; and

A key element of technical capability should include a robust operational and engineering plan. However, it is our view that the phrase ‘technical capability’ should be broadly interpreted to include wider elements, such as an ability to understand the environmental impacts of a project, to obtain sufficient information regard the sensitivity and recoverability of the ecological features of the area of operation and to be able to effectively monitor the veracity of any predictions made within an Environmental Impact Assessment conducted for a given project.

b. Similarly, in your view what key elements should be considered in respect of “financial” capability?

A company should have demonstrably sufficient capital, in addition to contingency, in order to be able to run their assets and conduct business in an efficient and responsible manner.

8. In your view, how can the regulatory framework be structured to encourage optimum extraction of low grade mineral resources?

Not answered

9. Do you have any suggestions for incentive mechanisms that would encourage investment in the Area and / or support best environmental operating practices?

Any licence to exploit resources should be conditional. Licence conditions should include obligations for the development of effective environmental operating practices in addition to requirements for the undertaking of sufficient, evidence-based requirements for environmental monitoring and regular monitoring reporting periods. It should be incumbent upon the regulator to effectively enforce environmental monitoring and reporting and to ensure that all licence conditions are adhered to. The consequences of failing to adhere to any licence conditions should be clearly outlined within any exploitation licence that is granted and should include options for financial penalties for infringement of conditions, possible licence suspensions and revocations. In addition, and for serious cases of infringement, the ISA should considered working with sponsoring states to develop legal punishments including imprisonment for individuals who flagrantly fail to comply with significant licence conditions.
10. For what term (in years) should an exploitation contract be granted? What do you consider best practice in terms of renewal periods for the same contract?

In the UK marine aggregate extraction licences are set for 15 years, with 5 year review periods built in to the licensing framework. The review periods allow for a comprehensive assessment of all operation and monitoring activity in order to establish the extent to which a given licensee is operating within the terms of their licence. In light of the novelty of deep sea mining and our present lack of understanding about the actual environmental consequences of the same, it would be wise for the ISA to establish short licencing and review periods. Initially it is suggested that the licence period could be set for 10 years with detailed, formal reviews occurring every 2 years. Following the expiry of these initial licences, and the learning curves that will have been undertaken pertaining to the industry and its impacts, both the duration of the licence and review periods could be reassessed and increased or reduced as appropriate in line with the results of monitoring and research that has been completed at this time.

11. In your view, what criteria should Contractors / the ISA consider in connection with the optimum size of exploitation areas within a contract area?

Not answered

12. It would seem appropriate, in line with existing extractive industry regimes, that financial penalties are considered as part of the regulatory framework. The Agreement provides, subject to judicial remedies, that in the case of violations of non-fundamental contract terms (or in place of any suspension or termination of a contract), monetary penalties may be imposed on Contractors. Contractors may also be subject to other penalty regimes beyond that of the ISA (for example, by sponsoring States under the terms of domestic licences or permits).

a. In your view, what penalty mechanisms should be adopted in the regulatory framework and imposed specifically by the ISA? For example this could be fixed penalties in connection with the breach of procedural obligations, including environmental procedural obligations;

The consequences of failing to adhere to any licence conditions should be clearly outlined within any exploitation licence that is granted and should include options for financial penalties for infringement of conditions, possible licence suspensions and revocations. In addition, and for serious cases of infringement, the ISA should considered working with sponsoring states to develop legal punishments including imprisonment for individuals who flagrantly fail to comply with significant licence conditions.

b. In addition, do you have any recommendations as to the classification (seriousness of the violation, duration etc) of violations and a range of penalty amounts?

No comment beyond suggesting that the scale of penalties needs to be broad and that the consequences of any violation should be proportional to the seriousness of any violation. It is important that action can be taken against decision-making individuals within organisations that violate condition as well as against the organisation itself. This will ensure that deliberate and
serious issues of non-compliance are disincentivised, with personal actions and decisions carrying within them personal consequences.

c. Finally, your recommendations on the use of any penalty amounts collected by the ISA? For example, should these amounts be directed toward an inspection regime only?

In instances of environmental damage it would seem just for the penalty to be invested in making good any damage if possible through habitat restoration.

13. The Exploration Regulations require Contractors to maintain appropriate insurance policies that are in accordance with generally accepted maritime practice. Do you have any recommendations as to any specific insurance products that should be reflected in the exploitation regulatory framework?

Not answered

14. It is common practice in land-based regimes to require an environmental guarantee or bond. In some regimes, a cash amount is paid under a trust arrangement or to a special bank account. What are your recommendations for including such a guarantee or cash contribution in the exploitation regulatory framework? Please advise on the nature of any guarantee, the quantum of the guarantee (its calculation methodology), its use and rationale (for example, for restorative obligations, agreed penalty amounts) and the suggested duration before release / return.

Not answered

15. The Seabed Disputes Chamber recommended that consideration be given to establishing a trust fund in the event an environmental liability gap arises. Western Australia, for example, has implemented a Mining Rehabilitation Fund to cover situations where an operator fails to rehabilitate the environment. However, the concept of a trust fund may have wider appeal.

Your comments would be welcome therefore on the setting up of a general environmental trust fund under the exploitation regulatory regime on the basis of the “polluter pays” principle. Please also provide your comments on how any contribution to the fund should be calculated and suggested, specific uses of trust monies.

In terms of the calculation of costs, it is suggested that once the environmental resources of an area have been adequately characterised as part of an Environmental Impact Assessment process the character of a given area of operation will be reasonably well understood. Following the onset of any environmental damage an estimate of the costs for environmental restoration could reasonably be arrived at. However, the veracity of this assertion is somewhat contingent on the creation of an understanding of the recoverability of a given habitat and/or species following the devolution of any impacts to the habitat or species in question. Our knowledge is at present insufficient to allow this task to be undertaken, hence, significant investment must be made in research in this area.

Part B: Environmental management terms and obligations
16. Please describe any general recommendations that the ISA should consider in developing rules, regulations and procedures on the prevention of damage to the marine environment from activities in the Area;

Prior to the commencement of an exploitation project it is vital that an adequate, fit for purpose Environment Impact Assessment is undertaken. Such assessment should provide a detailed characterisations of the habitats and species present across a given area of interest and should adequately map potential impact pathways leading from the development to environmental receptors. A key element of elucidating the likely significant effects of any project will necessarily involve ensuring that our knowledge of the sensitivity of marine habitats and species to potential impacts and the recoverability of these habitats and species from potential impacts is sufficient to enable informed licencing decisions to be made, with appropriate conditions attached to each licence. As ever, a risk based approach should be adopted for decision making and project scope and the precautionary principle should be exercised where appropriate. Research should be used as a strategic weapon in order to reduce the need to exercise the precautionary principle.

In order to facilitate judgements pertaining to the acceptability of potential project impacts it will be vital to ensure that sufficient evidence is collected and that sufficient research is undertaken either at the project level by operators, or at a strategic level through strategic research initiatives and fora. In relation to this point, it would be wise for the ISA to consider the establishment of industry research funding groups similar to the Marine Aggregates Levy Sustainability Fund (http://www.cefas.defra.gov.uk/alsf.aspx) which ran in the UK for the best part of a decade and contributed a significant amount to the development of knowledge pertaining to the impacts, effects and environmental context of the UK marine aggregates sector. Key advantages of such initiatives include the answering of industry wide questions through cash and time efficient mechanisms, which decrease licence decision and industry risk and promote decision certainty. In addition, such schemes promote industry and contractor learning ensuring that environmental studies can be more focussed on relevant issues and that contractors have exploited learning curves associated with the delivery of completing such studies allowing them to deliver projects to a higher standard in a more efficient manner.

17. The Exploration Regulations do not reflect any restorative or rehabilitative obligations in the marine environment. In your view, under an exploitation framework, what general restorative or rehabilitative obligations should be incorporated?

In the UK, operators of marine mineral extraction licence areas must seek to ensure that the seabed is left in a similar condition upon the cessation of operations to that which was apparent prior to the commencement of operations. The definition of the word similar in the context of the deep sea mining scenario could be held open to debate. In our view, similar could mean in such as state that the system could be reasonably be expected to recover, within a reasonable period of time, to a state comparable to that which occurred prior to the commencement of operations, with an emphasis on the ecological functionality of the system in question.
18. As part of the approval process for exploitation, Environmental Assessments and Environmental Management Plans will be required. What procedural steps should be incorporated into the regulatory framework to evaluate Environmental Assessments and Environmental Management Plans? What independent verification procedures should be adopted by the LTC in reviewing Environmental Assessments and Environmental Management Plans?

In the UK the licensing body is the Marine Management Organisation (MMO). The MMO acts as an independent arbiter of licensing decisions, relying upon separate, independent agencies for scientific and nature-conservation related advice pertaining to marine developments and industries. This is a system that is inherently balanced as the licensing body can weigh the views of operator representatives against those put forward by their scientific advisor bodies in a brokering role. Needless to say, if this approach were to be adopted thought would need to be given to how an independent scientific advisory body could be constituted, created, funded, staffed and run and this probably represents a consultation topic in itself.

19. As to any damage to the marine environment following the removal of a substrate (e.g. polymetallic nodules) what do you consider the most appropriate advance response strategies to conservation, restoration and natural remediation of biological diversity and ecosystem functioning? Is remediation best achieved by the development of Areas of Particular Environmental Interest and Preservation Reference Zones envisaged by the Exploration Regulations?

Serious, detailed, robust research really needs to be undertaken into this issue and many other areas besides. The deep sea mining industry has the potential to impact poorly understood, poorly explored and relatively little studied habitats and species and it will be difficult to predict how these systems will respond to mining and how they will recover. Therefore, the science needs to be done before a sensible or credible answer can be provided to the above question. Precautionary steps such those indicated within the question may help to mitigate the environmental impacts of the industry, but they may exceed or be insufficient in terms of the actual, practical requirements. It is vital that investments in research are made in this area.

20. In connection with question 19 above, what ecosystem functions are critical to restore and / or what levels of biological diversity should be conserved at regional levels, local scales and over what time periods?

Again, the science needs to lead the answer to these questions and the research needs to be commissioned. The ecological resources of the exploration and exploitation areas need to be contextualised in terms of its prevalence and importance at a regional or potentially ocean scale (in line with the potential scale of operations) before judgements can be made about the appropriateness of conservation at different scales. In terms of ecosystem function, the science must again be done. We do not know enough about the contribution of different components of the ecosystems that will be impacted by the industry, their sensitivity, recoverability or interconnectedness to be able to offer robust and defensible answers to the above questions. The research must lead.
21. The Exploration Regulations (and the Convention) envisage an emergency response (known as “emergency orders”) where an incident has caused, is causing or poses a threat of serious harm to the marine environment. Please describe any recommendations you have in the light of best practices on the measures and procedures that should be adopted in connection with an emergency response.

Not answered

22. A number of international and domestic legal instruments, including the Exploration Regulations, incorporate terms such as “serious harm” or “vulnerable marine ecosystems” in connection with the protection of the marine environment. How do you think these terms should be better defined and interpreted in the exploitation regulatory framework?

These terms necessarily contain a relative and subjective component. In terms of ‘serious harm’ research needs to be conducted in to the sensitivity and recoverability of marine habitats and species in order to create a contextualisation of what might constitute serious. Research must be undertaken into these areas with to allow robust administrative systems and decision-making processes to be developed. Projects such as the Genus Trait Handbook developed by Marine Ecological Surveys in the UK (http://www.genustraithandbook.org.uk/) is a useful conceptual tool which has help establish a clear framework for making judgements about the value and sensitivity of benthic ecological resources. Projects of this type may help to frame discussions and shape the arguments surrounding what might constitute serious harm.

Again, the importance and vulnerability of marine systems is a relative and subjective concept to a degree. The industry would benefit from conducting regional scale studies of environmental resources such as the Regional Environmental Characterisation Projects (http://www.cefas.defra.gov.uk/media/462500/southcoastrec_final%20report%20july%2010_low%20res.pdf) that were completed by MESL and others in the UK as part of the MALSF programme. These regional projects have help to contextualise the importance of ecological resources at a regional scale which is vital for generating arguments and informing decisions about what might constitute serious harm, or the vulnerability, rarity or importance of a given system.

23. How can the ISA most usefully promote and encourage the use of best practice (including technology advances and scientific research) to better protect the environment during exploitation operations?

Through establishing a central research scheme and engaging the public and private scientific sector and operators the ISA could create a forum through which to deliver strategically important research at an industry level whilst also facilitating the exchange of knowledge, the cross-fertilisation of ideas and the identification, exchange and advancement of best practice science, standards and processes. The ISA would be well advised to look at the MALSF (http://www.cefas.defra.gov.uk/alsf.aspx) programme, to which Marine Ecological Surveys Limited made a leading contribution, as a good example to follow in the this regard. There are an extensive number of potential benefits of establishing such programs and fora.
24. Are there any other fees or levies that the ISA should consider to promote environmental compliance?

Again, the MALSF model is referred to, with funds excised from a levy being appropriate for the furtherance of science and the creation of knowledge. Pursuance of this option could leverage significant benefits across a whole spectrum of areas and for a broad range of stakeholders include operators, conservationists, decision-makers, scientific companies and many more besides.

25. For the monitoring of activities in the Area, the Exploration Regulations provide for an inspection regime. Additionally, Sponsoring States may also undertake monitoring of Sponsored Contractor activities in the Area through inspection.

   a. In your view what monitoring obligations should be placed on Contractors operating in the Area and included in the exploitation regulatory framework?

   Robust, fit for purpose Environmental Impact Assessments should be compiled ahead of the granting of a licence and monitoring requirements should be based around the predictions made within the Environment Statement as accepted following consultation with the regulator and their scientific advisors where elements of uncertainty and significant impacts prevail.

   b. Please list the key measures and characteristics of what should be considered in establishing a supervision programme to verify compliance of Contractors with the rules, regulations and procedures, particularly compliance with their monitoring obligations above. In your view, how should such an ISA regime be structured and implemented, including the frequency of inspection, by whom and how should an inspection regime be funded?

   Not answered.

26. What specific procedural obligations should be adopted under the precautionary approach best environmental practices and adaptive management? Are there any best practice risk management approaches (for example in an oil and gas or fisheries context) that could usefully be adapted to deep seabed mineral exploitation activities?

   Not answered.

27. In considering environmental procedures above, what internationally-accepted environmental management standards should be reflected in the exploitation regulatory framework?

   Not answered.
Part C: Health, safety and maritime security

28. In considering health, safety, labour and maritime security, can you suggest the general and / or specific duties and obligations that should be placed on Contractors under the exploitation regulations? Please also consider any further specific obligations toward other users of the marine environment.

Not answered

Part D: General considerations – stakeholder communication and transparency

29. How can the ISA best develop a communications and consultation strategy which both secures transparency, efficiency and provides for the needs of a broad stakeholder base? It would be helpful to include specific examples of successful communication and consultation approaches.

A web-based licensing portal is one option, such as that operated by the MMO in the UK (http://www.marinemanagement.org.uk/licensing/public_register.htm). This system incorporates a public register allowing public access to operator/regulator correspondence and to licences, conditions, permits and scientific reports, material and assessment documents. It is, as far as I am aware, a best practice system. However, system would be limited in a global context as it is confined to the web and web access is not universal.

30. What forms of engagement best enable you to make contributions and receive appropriate feedback? Please provide comments on any specific initiatives, including digital initiatives, that would be productive together with any observations on the structure and content of the current ISA website (www.isa.org.jm).

Web-base methods.

31. What information on activities in the Area do you consider most important to make available publicly? How should this information be shared?

Ideally as much information should be shared as possible. Such information could include operator/regulator correspondence and to licences, conditions, permits and scientific reports, material and assessment documents.

32. What aspects of the EITI do you think should be reflected in the exploitation regulatory framework?

Not answered.

Your input on this Part D will allow the ISA to suggest a meaningful engagement plan, communication process and information flow and encourages your feedback on the above points.

Other considerations
33. Are there any further comments you wish to make on the issues raised in this survey that you have not commented on elsewhere

Not answered.

34. What other areas or topics relevant to the exploitation regulatory framework do you think would benefit from future surveys and consultation, including processes and procedures?

The development of an environmental decision making process and its principles. The development of a regime to govern non-compliance. The development of a scientific research forum. The development of a scientific advisory organisation. The development of financial mechanisms.

Other general and / or specific comments;

No comment

Supporting documents accompanying our submission and website links where applicable;