Fourth Meeting of an Open-ended Working Group of the Council on the financial terms of a contract under article 13, paragraph 1 of Annex III to the United Nations Convention on the Law of the Sea and under section 8 of the Annex to the Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982

21-22 March 2022, Kingston

Briefing Note

Prepared by the Chair of the Open-ended Working Group of the Council (OEWG)

I. Introduction

1. The purpose of this briefing note is to assist participants by outlining the main issues for consideration during the fourth meeting of the Open-ended Working Group of the Council (OEWG)[1] with a view to further advance the work on the payment system for polymetallic nodules as a priority and make appropriate recommendations to the Council in its ongoing negotiations of the draft regulations on exploitation of mineral resources in the Area ('draft regulations' and appendix IV) according to the roadmap on the Draft Regulations in 2022 (ISBA/26/C/13/Add.1).

2. Endorsing the recommendations made by the OEWG during the third meeting (February 2020), the Council requested additional background studies to assist its deliberations at its next meeting (ISBA/26/C/8). In response, a report was prepared by MIT which refines further the two-stage fixed ad valorem payment system and the two-stage progressive ad valorem payment system, taking into account comments received from stakeholders. As requested, the secretariat also commissioned the preparation of a comparative study of seabed mining and land-based mining with regard to the policy objective contained in section 8, item (1)(b), of the annex to the Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea.

3. By way of background, I invite participants to refer to these studies. My intent is not to discuss them during the fourth meeting of the OEWG. The methodology and content were presented during a series of dedicated webinars held on 9, 11 and 12 June 2020 and 28 October 2020 for that purpose. In particular, I draw your attention to the Joint Summary of the reports prepared by CRU and RMG Consulting relating to a Comparative Analysis of the Financial Aspects of Seabed Mining and Land-based Mining ("Joint Summary").[2]

4. This note contains my suggestions on the way forward by narrowing the focus on the possible options for the system and rates of payments under discussion, building on the results

[1] The fourth meeting will be convened on dates to be announced prior to the next meeting of the Council.
[2] Joint-summary-FInalDraft-20201012.pdf (isa.org.jm).

of those background studies. I suggest this approach to allow the working group to discharge its mandate by issuing recommendations on the system and rates of payments for polymetallic nodules to the Council.

5. It is important to bear in mind, as we move forward, that the United Nations Convention on the Law of the Sea[3] and the 1994 Implementing Agreement,[4] stipulate that the payment system to be included in the draft exploitation regulations are intended to capture the mineral rent for the International Seabed Authority, while allowing the Contractor to retain a share of the profit to create an economic incentive to make the necessary investments in activities in the Area.

II. Key elements emerging from the Joint Summary and the further refined MIT model.

6. In a land-based mining setting, minerals are usually the property of the State and a mining royalty is compensation to the State for minerals extracted. A royalty is strictly speaking not a tax. As seen in the Joint Summary, *ad valorem* payment systems are widely used among the 15 jurisdictions studied. These jurisdictions account for a large share of the world's production of the four metals contained in polymetallic nodules: cobalt, copper, manganese and nickel. The Joint Summary highlights that such payment systems are transparent, easy to administer by regulators and are well known to governments and investors. The royalty rates identified in the Joint Summary vary from 2-3% up to 10-12% depending on a range of factors. A key factor is the value basis to which the royalty rate is applied. It is therefore important to consider the two variables (i) royalty base and (ii) royalty rate together when comparing royalty regimes and considering a system of payments. In land-based mining regulations a higher royalty rate is normally applied to a smaller value base (volume of taxable product x product value) and a lower rate to a bigger value base. The Joint Summary also indicates that a profit-based system (or a mineral rent tax) could be a theoretical alternative, however profit-based systems are used by very few countries and hence there are only very limited experiences of its use and effects.

7. The Joint Summary notes that administrative fees are levied by most jurisdictions in addition to royalties to cover costs incurred by regulators when administrating permits and overseeing the regulatory regime. Accordingly, these fees should be levied by the Authority to cover costs for the handling of applications for exploitation contracts as well as for the administration of contracts. However as discussed in the Joint Summary, these fees are an irrelevant factor when considering the system of payments for the draft Exploitation Regulations.

8. Corporate income tax (CIT) is a tax on profits made by companies. It is one out of a wide range of taxes and levies paid by all companies, including withholding taxes, value-added taxes, custom duties, fuel, and electricity taxes. There are also tax incentives, tax holidays and deductions which may impact a mining project during its lifetime. National tax regimes are complex and difficult to compare and changing continuously. According to the Joint Summary,

[3] Article 13(1) of Annex III of the Convention.
[4] Section 8 (1), Annex.

royalty rates and CIT rates are completely unrelated in theory and also in practice. No government sets a royalty rate depending on the prevailing CIT rate or the effective tax rate or the other way around. CIT rates and royalty rates are set in separate processes. Comparison of payment systems for seabed mining with land-based mining should thus not include CIT, and CIT should not be a factor of importance when considering a system of payments for the Authority.

9. The Joint Summary indicates that environmental levies, i.e., charges for environmentally harmful emissions, as an instrument for mitigation of potential environmental damage are rarely used in a land-based mining setting. Instead, emissions levels and other environmental standards are prescribed by the regulator, which the miner has to meet. A similar approach seems suitable for deep seabed mining. In this regard, as the Joint Summary highlights, the draft regulations already contemplate the development of environmental standards as well requirements for insurance, and environmental performance guarantees to cover the cost of closure plans. These measures do not preclude a requirement to set aside funds for the situation where a mining company for any reason cannot fulfil its obligations to compensate for environmental harm. The specific environmental levy proposed in the case of the Authority is to require payment into an environmental compensation fund as a residual mechanism to cover uncompensated damage as conceived by the Seabed Disputes Chamber in its Advisory Opinion (Case n. 17).

Issues related to valuation.

10. The Joint Summary finds that the approach that is most appropriate as the basis for determining a payment system is one that is transparent, easily monitored, provides an appropriate level of return, is stable and meets other administrative and return parameters that the Authority might have, e.g., exposure to price fluctuation versus consistency of returns. The payment system should also reflect the proportion of value that must be added at the processing stage.

11. In this context, the Joint Summary concludes that in light of the the trade-off between administrative capacity and cost versus optimal and stable revenue for the Authority over time, and transparency and fairness of the payment system for deep seabed contractors, a system of payments based on an *ad valorem* royalty for three of the metals concerned (cobalt, copper and nickel) seems preferable. The royalty rates for cobalt, copper and nickel could either be separate for each of the metals or the same for all three to simplify royalty calculations, provided this does not significantly change the total amount of royalties paid compared to a model with separate royalty rates for each metal.

12. For copper and nickel, a market reference index exists to determine the value of the nodules metal content, i.e., the London Metal Exchange and for cobalt the preferred index is Fast Markets (previously the Metal Bulletin). However, manganese presents a challenge. There is currently no accepted market index price because the manganese product, form and value relative to reference prices remain highly uncertain. Presently, there are two main alternative products: a manganese rich slag (MRS) or electrolytic manganese metal (EMM). Depending on which product will be used, different reference prices are applied. It is likely that the manganese

would be converted to MRS, which closely resembles manganese ore, and the ore price could serve as a reference price. There are third party pricing services providing a market reference for manganese ore.

13. The treatment of manganese represents a unique challenge from a valuation perspective. There is a degree of uncertainty around the product form, realised sales price relative to transparent benchmark price series, and conversion costs for the manganese contained in polymetallic nodules. One possible approach to mitigating this uncertainty would be the use of a specific royalty, i.e., a royalty charged as a function of the volume of manganese contained, as opposed to a function of its estimated value. This would provide a guaranteed return to the royalty holder for the value of the manganese contained in the nodule while such uncertainty remains around the processing, product form, and realisable price and regardless of which payment system is chosen.

14. The Joint Summary also suggests a payment system that allows for an adjustment to the gross value of the metal content of the nodules to account for processing costs. An example of this kind of valuation basis which is used in land-based mining is the Net Smelter Return (NSR) concept. NSR is one valuation basis, which would allow a fair valuation of nodules between collector and processor, and a reasonable price exposure. A determination of nodule metal content value using NSR would however be dependent and reliant upon on the receipt of accurate data from the processor. If that is not practicable, it is reasonable to use a gross metal content value basis as suggested by the MIT model, provided that the royalty rate applied provides for an equivalent burden on the collector. [5] Using a gross value basis has the advantage of being simpler to administer than the NSR valuation.

15. The NSR and gross metal valuation basis will expose the Authority to various levels of price risk due to fluctuating metal market prices. In the theoretical MIT model, it has been proposed that the risk be shared equally between the collector and the processor. The gross value model and the NSR exposes the Authority to different levels of risk in this respect. They are both models used by the mining industry in the land-based setting. In the final selection of a value base these aspects of risk should be further discussed once the OEWG further narrows the options on the table for the system of payments and the associated rates. As further discussed below, those discussions will also need to bear in mind the current text of DR 82 (Review of rates of payments) in Section 7 of Part VII (Financial terms of an exploitation contract) of the draft regulations.

16. The Joint Summary further suggests that the point in time for valuation should be at the first point of unloading of the vessel, which could take place either in port or at sea, and is normally the time when ownership is transferred from the collector to the processor. The

[5] For example, if the gross metal content value of the nodules in a particular year is 500 USD/t, and the allowance for processing opex and capex is 300 USD/t, then the NSR basis is 200 USD/t. In this example a rate of 5% on an NSR basis would be equivalent to a rate of 2% extracted on gross value.

rationale is that if this is an arm's length transaction, then it is at this point in time that the transaction price would in theory become transparent and accurate.

III. The four options under consideration by the OEWG

17. Four payment systems are under consideration by the OEWG:

- **Option 1**: A fixed rate ad valorem only royalty;
- **Option 2**: A two staged (in time) ad valorem only royalty;
- **Option 3**: A combined ad valorem royalty and profit-based system; and
- **Option 4**: A progressive, two staged ad valorem royalty only.

18. While the following paragraphs do not intend to prejudge or discard any option, based on the findings contained in the extensive studies conducted and based on the discussions during the first three meetings of the OEWG, the following observations are made with the intention to further narrow the scope of possible options.

19. The fixed rate ad valorem royalty (Option 1 above) places a high initial burden on contractors, particularly when operating costs may be higher than planned and contractors may not capture sufficient share of the values created during later phases of operation when all processes run smoothly, and metal prices increase. Further, under Option 1, the royalties collected by the Authority would be lower than in all other options. Therefore, it is appropriate to exclude this option for the time being.

20. Option 3, which combines the ad valorem royalty with a profit-based system, is likely to increase the administrative burden on the Authority and would require commercial, possibly confidential, information to be collected from the Contractors and still be less transparent than the other three options. Profit-based royalty payment systems are exceptionally rare in land-based mining. Importantly, under this option, there is a possibility that no payment is made or that payments are made only after several years of production. Therefore, while keeping this on the table, it seems reasonable to put on hold this option for the time being.

21. Options 2 and 4 are similar. The payment systems are both transparent for contractors, easy to administrate and ensure the Authority receives the most commercially advantageous royalties by remaining adaptive to fluctuating market metal prices and increasing the Authority's revenues when contractors' income increases and vice versa. It therefore seems appropriate for the OEWG to continue focusing on options 2 and 4.

22. Whichever payment system is finally adopted, there will always exist a level of uncertainty concerning precise future investment and operating costs, metal prices, royalty rates, royalty base, and movement of land-based mining royalties. This is particularly so when considering that demand for all four metals in polymetallic nodules is likely to grow in the future due to the transition to clean energy. In this context, it may be appropriate to reconsider these issues when the system of payments, including the underlying calculation model, is reviewed after five years

from the date of commencement of commercial production.[6] This will enable necessary alterations to be made due to differences between actual processing costs, prices and royalty rates, and preliminary estimations.

IV. Concluding remarks and next steps

23. Options 2 and 4 can be balanced to ensure maximum returns to the Authority while ensuring the commercial viability of exploitation of seabed mineral resources without unduly burdening or favouring seabed mining compared to traditional land-based mining. However, Option 4, as shown in the table below, allows the Authority to capture a larger share of revenues in times of wind-fall metal prices.

24. The MIT Model, following additional refined modelling from stakeholders and analysis of the systems' sensitivity to changes in future metal prices produces the following royalty revenue results under base case assumptions:

Cumulated ISA revenues (billion USD)

	Metal prices -20%	Base case	Metal prices +20%
Option 2			
2->6 % ad valorem royalty	2.7	4.4	5.6
Option 4			
2->5->9 % ad valorem royalty	2.8	4.4	7.8

25. The ad valorem royalty rate and the value basis must be considered together. The valuation of the metal content of nodules should be transparent and fair, using accepted industry practices. Administrative fees, CIT and other national taxes paid by land-based mining companies, as well as environmental levies, should not be factors of importance when comparing seabed mining with land-based mining and considering a payment system for the Authority.

26. It will be important that the Authority receives and audits all necessary information (volumes, content of metals and other data) to make a continuous evaluation of the commercial benefits of the payment system. The Authority should retain an option to revise the royalty rates as the payment systems used for land-based mining continue to develop, seabed mining technology and beneficiation processes improve, and most importantly exploitation in the Area occurs. Such revisions should not be overly difficult and should in principle be primarily limited to adjustments of the royalty rates and the manner and basis of the calculation of the royalty. For manganese, once more information becomes available in the future, a transition to a royalty basis similar to the other three metals would be desirable.

27. In conclusion and based on the Joint Summary, and while keeping all options on the table, it is suggested that the OEWG agrees to further narrow the focus on Option 2 and Option

[6] Cfr. DR 82 of the draft regulations.

4, using as a starting point the MIT model and bearing in mind the content of DR 82 in section 7 of Part VII of the draft regulations.

18 February 2022