International Seabed Authority
African Group Submission on the Payment Regime for Deep-sea Mining in the Area
(June, 2022)

Executive Summary

1. Deep-sea mining (DSM) should only occur if it is demonstrably beneficial to mankind. DSM will involve the loss of resources to common ownership, and mankind must be fairly compensated for that loss. If DSM is such a high cost, risky and inefficient industry that miners[1] cannot afford to fairly compensate mankind, then it would be better if DSM in the Area did not proceed until such a time that adequate compensation is viable.

2. The Chairman's Briefing Note for the Open-ended Working Group on the Financial Terms of a Contract (CBN)[2] for the session of March 2022 outlined the following four payment regimes:

   Option 1: a one stage fixed ad valorem only royalty;
   Option 2: a two stage time-varying ad valorem only royalty;
   Option 3: a two stage blended ad valorem and profit share system; and
   Option 4: a two stage progressive / variable price-varying ad valorem only royalty.

3. Prior to and during the March 2022 session of the Open-Ended Working Group on the Financial Terms of a Contract, there was a suggestion that going forward the focus should be on Options 2 and Option 4, with the other options no longer being considered. Option 2 was associated[3] with royalty rates of 2%/6%, and Option 4 was associated with royalty rates of 2%/5% to 9%.

4. The African Group, and some other delegations, was clear that all the Options 1 – 4 should remain in ongoing negotiations. While the African Group is not necessarily opposed to a price varying royalty or a time varying royalty, we are opposed to a time varying royalty if there is any suggestion that it will include rates of 2% and 6%. Likewise, the African Group would not support a price varying royalty if there is any suggestion that it will have rates of 2%/5% to 9%.

5. The African Group has formulated nine tests against which to evaluate different options for the payment regime. These tests are drawn from international best practice in extractive industry taxation, and the provisions of UNCLOS and the 1994 Implementing Agreement. Only payment regimes that score highly against these tests could be supported by the African Group. The nine tests are:

   Test 1: The Fair Compensation to Mankind Test;

[1]The term 'miner' is used throughout this Submission to refer to an entity that has, or is considering obtaining, an exploration or exploitation license for DSM in the Area.
[2] The full title of the CBN is '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.'
[3] More specifically, page 5 of the CBN presents option 2 with royalty rates of 2%/6% and option 4 with royalty rates of 2%/5%to9%.

Test 2: The Whenever Miners make Profits, Mankind must be Compensated Test;
Test 3: The Economic Efficiency Test;
Test 4: The Rates of Payment Test;
Test 5: The Progressivity Test;
Test 6: The Full Compensation to Land Based Mining Countries Test;
Test 7: The Simple to Audit and Administer Test;
Test 8: The Knowledge and Transparency Test; and
Test 9: The Sensitivity Test.

6. The rates currently proposed in Option 2 and 4: the 2%/6% time varying royalty regime and the 2%/5%to9% price varying royalty regime, fail many of these tests. Specifically, both these payment regimes fail:

   a.) Test 1: The Fair Compensation to Mankind Test, as mankind receiving 2% of the nodule's value during the first four years of commercial mining does not represent fair compensation;
   b.) Test 2: The Whenever Miners make Profits, Mankind must be Compensated Test, because both payment regimes allow miners to make billions of dollars in profits by selling exploitation liceneses while paying no tax;
   c.) Test 3: The Economic Efficiency Test, as the royalty rates in both payment regimes were set to allow deep-sea miners to make high post-tax profits to encourage capital to be reallocated from low risk land-based mining to high risk deep-sea mining;
   d.) Test 4: The Rates of Payment Test, as both payment regimes would result in deep-sea miners facing lower effective tax rates than land-based miners;
   e.) Test 6: The Full Compensation to Land Based Mining Countries Test, as there is no evidence that either payment regime will result in the ISA receiving high enough revenues to fully compensate developing land-based mining countries for the lower revenues from land-based mining due to DSM placing downward pressure on metal prices;
   f.) Test 8: The Knowledge and Transparency Test, as both payment regimes were designed without a detailed understanding of the financial relationship between miners and sponsoring states; and
   g.) Test 9: The Sensitivity Test, as neither payment regime is likely to maximise ISA revenues if miners future pre-tax profits are significantly higher than currently forecast by MIT.

7. The 2%/6% and 2%/5%to9% royalty regimes, however, mainly fail these tests due to their low royalty rates. Option 2 and Option 4 could, with higher royalty rates, conceivably pass Test 1, Test 3, Test 4 and Test 6. Moreover, both Option 2 and Option 4 could be modified to include an explicit tax on the transfer of rights (selling exploitation licenses) which would lead to their passing Test 2.

8. The royalty rates of 2%/6% and 2%/5%to9% for Option 2 and Option 4 respectively were proposed by the The Updated MIT Report[4]. These royalty rates were proposed because they maximise ISA revenues in MIT's financial model of DSM when it is assumed that:

   a.) miners pay a 25% sponsoring state corporate income tax; and
   b.) miners require a post-tax internal economic rate of return above 17.5% (hurdle rate) to motivate investment.

[4] The term 'Updated MIT Report' is used through this submission to refer to 'UPDATE: Report to the International Seabed Authority on the Development of an Economic Model and System of Payments for the Exploitation of Polymetallic Nodules in the Area Based on Stakeholder Feedback'. This report is available at: [Nodule Financial Payment System Report October 2020 V3.pdf (isa.org.jm)]

The assumption that miners pay a 25% sponsoring state corporate income tax is, however, at least for some miners, incorrect as some miners have negotiated tax exemptions with sponsoring states.

9. The MIT model also assumes a hurdle rate of 17.5% for DSM, implying that miners need to make very high profits to motivate investment because DSM is risky. Miners have consistently argued in submissions to the ISA that a reason DSM requires high hurdle rates is because mining being regulated by the ISA involves high sovereign risk. For example, a recent Industry Position Paper (IPP)[5] submitted to the ISA stated:

   *'In contrast to most land-based jurisdictions that have a mature mining industry, the ISA does not have a track record of providing a stable and commercially viable regulatory regime for mining, and as such, the international investment community **places a higher risk on the ISA,** and in turn, investors will attribute a higher discount rate to projects within the international seabed area […]'* (emphasis added).

10. However, miners have been telling investors that DSM in the Area involves less sovereign risk. Specifically, The Metals Company Inc Investor Presentation states that:

    *'Seabed resources in the high seas are governed by the International Seabed Authority (ISA) – **Less sovereign risk'*** (emphasis added).

    Later in the same presentation, The Metals Company Inc presents the net present value of future profits using a **9% discount rate.**

11. Given the newly available information, that contrasts with miners' submissions to the ISA, the African Group is only prepared to support payment regimes that are modelled assuming:

    a.) that the miner faces a hurdle rate of 12% or less; and
    b.) that the miner does not pay sponsoring state corporate income tax on their profits from mining in the Area.

12. The African Group has also replicated the MIT model of DSM mining. With realistic assumptions concerning corporate income tax and hurdle rates, this Replicated Model[6] shows that for:

    a.) Option 1: a single rate royalty, a rate of 14.4% maximises ISA revenues;
    b.) Option 2: a time varying royalty, rates of 6.4%/19.3% maximise ISA revenues; and
    c.) Option 3: a hybrid regime with a royalty of 5%, 30% profit share and 30% additional profit share has merit.

    In addition, a previous African Group submission showed that for Option 4: a price varying royalty, a royalty rate range of 12% to 25% maximises ISA revenues.

13. The African Group's position is that the rates provided above are the minimum acceptable rates for the four options proposed for the payment regime. In addition, the payment regime should include a tax on the transfer of rights and the base for the royalty should continue to be the Calculated Value

[5] The full title of this paper is 'Industry Position Paper (March 2020) on the ISA Royalty Regime'

[6] The royalty rates shown maximise ISA revenues assuming that nodules are valued (for the purposes of the royalty base) using the CVM approach as provided for in the Updated MIT Report. In the event that nodules are valued using an alternative approach which lowers the base the royalty is applied to then all the royalty rates shown will need to be recalculated and revised upwards.

of Minerals (CVM) approached provided for in the Revised Draft Exploitation Regulations of July 2018 (Draft Regulations). There also needs to be further analysis and evidence to demonstrate that the payment regime will result in sufficient revenue to compensate land-based mining countries for any negative impact on their economies from DSM.

Contents

Background and Introduction

14. The African Group is committed to ensuring that Deep Seabed Mining (DSM) in the Area only occurs if it is demonstrably beneficial to mankind. A payment regime that conforms to the provisions of the United Nations Convention on the Law of the Sea (UNCLOS) and the 1994 Implementing Agreement[7], and ensures that mankind fairly shares in the revenues from DSM is a necessary condition for DSM benefiting humanity.

15. The International Seabed Authority (ISA) published revised draft exploitation regulations (Draft Regulations) in July 2018[8]. These Draft Regulations provided for a payment regime with a royalty as the only significant tax but did not include a rate for this royalty.

16. The ISA contracted the Massachusetts Institute of Technology (MIT) to programme a financial model of nodule[9] mining in the Area. The resulting MIT Report in 2019[10] suggested that the payment regime included a royalty as the only significant tax. It also recommended that the royalty rate was 2% for the first four years of a mines commercial production[11], increasing to 6% for the remaining years of production (the '2%/6% royalty regime').

17. The African Group made a submission to the ISA on this payment regime in July 2019[12]. That submission argued that a payment regime consisting of a 2%/6% royalty as the only significant tax was inconsistent with DSM in the Area only occurring if it was demonstrably beneficial to mankind. More specifically, the African Group argued that:

    a.) the ISA receiving just 2% of the value of nodules when commercial mining commences did not represent fair compensation to mankind;
    b.) it was unacceptable that the rate of the royalty had been set to provide higher risk DSM with higher post-tax profits than lower risk land-based mining;
    c.) the 2%/6% royalty only payment regime resulted in DSM facing a lower effective tax rate than land-based mining of the same or similar minerals;
    d.) the 2%/6% royalty only payment regime was regressive with the ISA's share of profits decreasing as a miner's profits increased;
    e.) that the payment regime not taxing miners transferring (selling) their licenses was unacceptable; and

[7] The full title of the 1994 Implementing Agreement is 'Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982'. The 1994 Implementing Agreement is available here: https://www.un.org/depts/los/convention_agreements/convention_overview_part_xi.htm

[8] Available at: https://www.isa.org.jm/mining-code/ongoing-development-regulations-exploitation-mineral-resources-area

[9] This Submission uses the term 'nodule' to refer to 'polymetallic nodules'.

[10] The full title of this report is 'Report to the International Seabed Authority on the Development of an Economic Model and System of Payments for the Exploitation of Polymetallic Nodules in the Area'. It is available at https://isa.org.jm/files/files/documents/paysysmodel-3jun.pdf

[11] The MIT Report states 'The first stage commenced with the beginning of mining and continues for five years. The second stage extends from the end of the fifth year until the end of mining operations. Rates could go only go up in the second stage.' This could be taken to suggest that the lower royalty rate is applied for five years. However, a more detailed review of the MIT model appears to suggest that the higher royalty rate is paid in the fifth year and the lower royalty rate is only applied for the first four years.

[12] African Group Submission on the ISA Payment Regime for Deep-Sea Mining in the Area. See: https://www.isa.org.jm/files/files/documents/agsmitmodelfinal.pdf

f.) there was no evidence that the 2%/6% royalty payment regime would result in the ISA receiving enough revenue to fully compensate land-based miners for the lost revenue from the lower metal prices caused by DSM.

18. Considerable work has been completed on the payment regime since the African Group's last submission. Particularly germane recent publications include:

    a.) the Industry Position Paper[13];
    b.) the Comparative Analysis of Tax Regimes of Land-Based Mining in 15 Countries[14];
    c.) a study on the Economic Impact of Polymetallic Nodule Mining on Land-Based Miners;[15]
    d.) The Metal Company Inc Investment Summary[16];
    e.) the Sponsorship Agreement for Tonga Offshore Mining Limited;
    f.) the Updated MIT Report; and
    g.) the CBN.

19. In 2021, the Republic of Nauru, as provided for under section 1 paragraph 14 of the 1994 Implementing Agreement, requested that the ISA complete the exploitation regulations by July 2023. The ISA has, to meet this target date, approved a new road map and schedule of meetings. This new road map includes further work on the payment regime.

20. In March 2022, there was a further meeting of the Open-ended Working Group on the Financial Terms of a Contract. During this session, there was discussion of the idea that the working group should concentrate on a time varying royalty and price varying royalty only. The Chairman's Briefing Note (CBN) for this Working Group presented Option 2 (the time varying royalty) and Option 4 (the price varying royalty) with royalty rates of 2%/6% and 2%/5%to9% respectively. Due partly to concerns over these low rates, the working group decided to keep all options on the table for the time being.

21. The African Group considers that, given the new target date for the exploitation regulations, recent publications on the payment regime and the March 2022 session of the Open-ended Working Group on the Financial Terms of Contracts, this is an opportune time for it to evaluate its position on the payment regime. This Submission includes that evaluation, and it proceeds through four parts.

    Part 1: Evaluates the payment regimes recommended by the Updated MIT Report and CBN against nine tests. These tests are drawn from international best practice in extractive industry taxation, and the provisions of UNCLOS and the 1994 Implementing Agreement.

    Part 2: Provides the African Group's response to the points raised in the Industry Position Paper.

    Part 3: Replicates the MIT model of DSM but with more realistic assumptions concerning sponsoring state tax and the hurdle rate[17]. The Replicated MIT Model is then used to analyse different payment regimes.

    Part 4: Concludes by stating the African Group's updated position on the payment regime.

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[13] The full title for this paper is 'Industry Position Paper, March 2020, ISA Royalty Regime.

[14] Available at: https://isa.org.jm/files/files/documents/20201012-RMGAnlaysis-Rev3-withLinks2.pdf

[15] The full title of this study is: 'Study of the Potential Impact of Polymetallic Nodules Production from the Area on the Economies of Developing Land-based Producers of those Metals which are Likely to be Most Seriously Affected,' and it is available at: https://www.isa.org.jm/files/documents/impactstudy.pdf

[16] http://investors.metals.co/static-files/cbbbf70e-cc80-4cef-a18c-5e272d591756

[17] This Submission uses the term 'hurdle rate' to refer to the minimum post-tax internal economic rate of return required by a miner to invest in a mine.

Part 1: Evaluation of the Proposed Payment Regimes

Summary of the Updated MIT Report

22. The Updated MIT Report presents new results from a revised model of a nodule mine's revenues, costs and pre-tax profits. It also models the impact of different payment regimes on miners' post-tax profits and ISA revenues.

23. The Updated MIT Report concludes by suggesting that the payment regime includes:

    a.) a 2%/6% royalty only payment regime (2% for the first four years of commercial production and 6% for the remaining years of commercial production); or
    b.) a 2% royalty for four years of commercial production, and then a variable rate ranging from 5% to 9% depending on metal prices.

24. These two payment regimes appear to be favoured because assuming a 25% sponsoring state corporate income tax rate and a 17.5% hurdle rate, they maximise ISA revenues. But, even according to the Updated MIT Report, the conclusion that these payment regimes maximise ISA revenues is very sensitive to the underlying corporate income tax and hurdle rate assumptions. And, as discussed later in this Submission, there is strong evidence that some miners have negotiated exemptions from sponsoring state corporate income tax and that a 17.5% hurdle rate is too high.

25. From careful consideration of the Updated MIT Report, the African Group has concluded that the royalty rate that maximises ISA revenues is very sensitive to the assumed hurdle rate. Specifically, the Updated MIT Report provides results that show that:

    a.) a 2%/4% royalty only payment regime maximises ISA revenues when a 18% hurdle rate is assumed; but
    b.) a 2%/8.25% royalty only payment regime maximises ISA revenues when a 17.3% hurdle rate is assumed[18].

    Thus, a 0.7 absolute percentage point difference in the assumed hurdle rate results in the more than doubling of the long-term royalty rate that maximises ISA revenues.

26. The Updated MIT Report also shows that conclusions regarding the optimal rate for the royalty are sensitive to assumptions regarding sponsoring state tax. For example, the Updated MIT Report demonstrates that if:

    a.) a sponsoring state corporate income tax of 25% is assumed then a 5.4% royalty results in post-tax profits that exceed the assumed 17.5% hurdle rate; but
    b.) if it is assumed that miners do not pay corporate income tax then a 9.7% royalty results in post-tax profits that exceed the assumed 17.5% hurdle rate.

27. The African Group expects any proposed payment regime to score well against nine tests. These tests are drawn from international best practice in extractive industry taxation, and the provisions of UNCLOS and the 1994 Implementing Agreement. Only payment regimes that score highly against these tests could be supported by the African Group. The nine tests, discussed in detail below, are:

    Test 1: The Fair Compensation to Mankind Test
    Test 2: The 'Whenever Miners make Profits, Mankind must be Compensated' Test

[18] See Updated MIT Report page 11.

Test 3: The Economic Efficiency Test
Test 4: The Rates of Payment Test
Test 5: The Progressivity Test
Test 6: The Full Compensation to Land Based Mining Countries Test
Test 7: The Simple to Audit and Administer Test
Test 8: The Knowledge and Transparency Test
Test 9: The Sensitivity Test

Test 1: The Fair Compensation to Mankind Test

28. DSM will transfer the ownership of minerals from common ownership by mankind to private ownership by individuals and companies. Mankind must be fairly compensated for that loss of resources to common ownership. If DSM is such a high-cost, inefficient and risky form of mining that it cannot produce sufficient profits to fairly compensate mankind for its loss, then the interests of humanity would be best served by DSM not occurring at all.

29. In addition, DSM will cause long-term harm to the environment. Further work needs to be undertaken to quantify this environmental harm. The African Group considers that mankind should be compensated for the environmental harm caused by removing millions (possibly hundreds of millions) of tons of nodules from the sea floor.

30. The African Group reiterates that, as stated in our earlier submissions, we do not consider that the ISA receiving 2% of the nodules' value amounts to fair compensation. There is no evidence whatsoever that a 2% royalty provides fair compensation for the loss of nodules to common ownership or fair compensation to mankind for the long-term, irreversible damage to the environment DSM would cause. Both the 2%/6% and 2%/5% to 9% royalty only payments regimes, therefore, fail the fair compensation to mankind test.

Test 2: The Whenever Miners make Profits, Mankind must be Compensated Test

31. The Draft Regulations allow for the transfer of rights, but the proposed payment regimes do not tax such transactions. Miner A may therefore sell its right to mine (the exploitation license) to Miner B, potentially making billions of dollars in profits and yet paying no taxes to the ISA. The increase in the value of the license held by Miner A may have arisen due to fortuitous factors outside of its control, such as metal prices increasing or another miner demonstrating that DSM is profitable.

32. Miners can benefit from both the direct and indirect transfer of rights. The indirect transfer of rights occurs, if for example, a company acquires Miner A because it holds a valuable DSM exploitation license. There is some evidence that when there are taxes on the direct transfer of rights, miners seek to avoid these taxes by indirectly transferring rights. This has led some experts in extractive industry taxation to argue that the jurisdiction where mining occurs should seek to levy taxes on and control both the direct and indirect transfer of rights[19].

33. In summary, under the two currently proposed payment regimes, miners can potentially make billions of dollars of profits without paying any tax. This problem should be rectified by the payment regime

[19] See: Burns, L., Le Leuch, H., & Sunley, E. M. (2016). Taxing gains on transfer of interest. In International Taxation and the Extractive Industries (pp. 176-205). Routledge.

including a tax on the direct transfer of rights, and the ISA should also consider taxing the indirect transfer of rights.

34. The proposed payment regimes therefore currently fail the 'Whenever Miners make Profits, Mankind must be Compensated' test.

Test 3: The Economic Efficiency Test

35. The Updated MIT Report assumes a higher hurdle rate for DSM than land-based mining. It then maximises the royalty rate subject to deep-sea miners achieving post-tax profits that exceed the DSM hurdle rate. A corollary is that the royalty rate recommended by MIT is lower than would be the case if it had been assumed that DSM and land-based mining entailed the same level of risk. **That is, implicit within the MIT analysis is the idea that because DSM is riskier than land-based mining it should face lower taxes to encourage investment in it.**

36. The approach followed by the Updated MIT Report would result in a payment regime that encourages economically inefficient mining. Economic efficiency speaks to capital flowing to the lowest cost, lowest risk form of mining, be that DSM or land-based mining. The approach followed in the Updated MIT Report of intentionally setting low royalty rates for DSM because it is risky would result in capital flowing from safe land-based mining to inefficient, high cost and risky DSM because deep-sea miners pay less tax. It would be better to assume that land-based miners and deep-sea miners faced the same hurdle rate and should pay similar taxes, then capital would flow to the lowest cost and least risky way of mining, be that DSM or land-based mining.

37. In conclusion, the 2%/6% and 2%/5%to9% royalty only payment regimes were proposed based on the assumption that the payment regime should include low royalty rates to encourage investment in risky DSM. As such, these payment regimes fail the economic efficiency test. **The African Group will only support payment regimes formulated based on the assumption that DSM and land-based mining face the same hurdle rates.**

Test 4: The Rates of Payment Test

38. The 1994 Implementing Agreement mandates in Section 8.1.b that:

    'The rates of payments **under the system** shall be within the range of those prevailing in respect of land-based mining of the same or similar minerals in order to avoid giving deep seabed miners an artificial competitive advantage or imposing on them a competitive disadvantage;' (emphasis added).

39. This Section is best interpreted as requiring the effective tax rate for DSM in the Area to be within the range of effective tax rates for land-based mining of the same or similar metals. There is, however, the question as to whether the effective tax rate for DSM should, or should not, include sponsoring state corporate income tax.

40. The African Group's view is that the effective tax rate for DSM should not include sponsoring state corporate income tax because some miners have already negotiated exemptions from corporate

income tax.[20,21] For example, section 3.6.a of the sponsorship agreement for Tonga Offshore Mining Limited (TOML) states:

'the State hereby agrees that the CRP[22] contemplated under this Section 3 represents the totality of the monetary contributions, payments and taxes the TOML Group is required to make to the State;'

41. The TOML sponsorship agreement does not state the amount of the commercial recovery payment (CRP). TOML has, however, commissioned a publicly available technical report that references a CRP of $1.25 per dry tonne of nodules and does not mention the payment of corporate income tax.[23]

42. There is, then, strong evidence that sponsoring state corporate income tax should not be included when comparing effective tax rates between the DSM in the Area and land-based mining. Excluding sponsoring state corporate income tax, the MIT Report of 2019 showed that a 2%/6% royalty only payment regime would result in a DSM effective tax rate of 21%.[24] Likewise, the African Group's July 2019 Submission demonstrated that a 2%/6% royalty payment regime would result in a 19% effective tax rate for DSM, which was less than half the 47% average effective tax rate for land-based mining of the same or similar minerals.[25] That Submission also demonstrated that the lowest effective tax rate for a land-based mining regime of the same or similar metals was 40%.

43. Overall, the 2%/6% and 2%/5%to9% royalty payment regimes result in effective tax rates for DSM that are less than half those faced by land-based miners of the same or similar minerals on average. As such, these payment regimes do not conform to Section 8.1.b, fail the rates of payment test, provide an artificial competitive advantage to DSM and are not supported by the African Group. The African Group will only support ISA payment regimes where the ISA's share of profits from mining exceeds 40% under a wide range of price and costs assumptions.

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[20] The term 'the system' is not formally defined in UNCLOS or the 1994 implementing agreement. However, UNCLOS and the 1994 Implementing Agreement provide the legal principles to guide the ISA when developing the mining code (including the payment regime) for the Area. UNCLOS and the 1994 Implementing Agreement do not have jurisdiction over, and are not providing principles to guide sponsoring state parties to UNCLOS when determining their corporate income tax rates. The proper interpretation of 'the system' in Section 8.1.b is thus 'the payment regime of the International Seabed Authority for DSM in the Area'. A corollary is that any comparison of effective tax rates between DSM and land-based mining for the purposes of determining whether the ISA's payment regime conforms to Section 8.1.b must exclude all sponsoring state taxes.

[21] In addition, as discussed in detail in previous African Group submissions, even if miners have not directly negotiated exemptions from corporate income tax, it is likely that profits from the Area will not be classified as taxable income under many sponsoring states' domestic tax legislation.

[22] Commercial Recovery Payment

[23] Specifically, the AMC Consultants Pty Ltd, TOML Clarion Clipperton Zone Project, Pacific Ocean, NI 43 101 Technical Report states: ''TOML has agreed to a royalty with the Tongan government of US$1.25 per dry ton of nodules for the first 3 million dry tons of nodules mined in any one year and US$0.75 per dry ton for all dry tons mined thereafter in that same year.'

[24] See MIT Report 2019, paragraph 214.

[25] These results were shown using a model mine with a pre-tax IRR of 30%. The 2%/6% royalty only payment regime and different land-based mining tax regimes were applied to the same model mine to calculate different jurisdictions effective tax rates. The effective tax rate for the ISA payment regime accounted for the fact that the royalty is levied on the value of metal contained in the nodule. See 'African Group submission of two Payment Regimes for consideration by the Council of the International Seabed Authority, July 2019' paragraph 12.

Test 5: The Progressivity Test

44. International best practice in extractive industry taxation[26] is that payment regimes are progressive. Under a progressive payment regime the ISA's share of profits would increase with a miner's profits. The 2%/6% royalty only payment regime is regressive, with the ISA's share of profits decreasing as the miner's profits increase[27]. Thus, the 2%/6% royalty payment regime fails the progressivity test.

45. The 2%/5%to 9% royalty payment regime is progressive when profits increase due to increased metal prices, but regressive when profits increase due to lower costs. Thus, the 2%/5%to9% payment regime only partially passes the progressivity test.

46. The African Group does, however, recognise that there is some tension between the simple to audit and administer test and this progressivity test. Payment regimes that highly progressive normally rely on profit and excess profits taxes which can be difficult to audit and increase the risk of tax avoidance. In contrast, payment regimes that rely heavily on royalties are simpler to audit but are also less progressive.

Test 6: The Full Compensation to Land Based Mining Countries Test

47. The 1994 Implementing Agreement provides for an economic assistance fund. This fund is to be financed from a portion of the revenues the ISA collects from miners, and its purpose is to compensate developing land-based mining states whose economies have been negatively affected by DSM.

48. The MIT Report 2019 demonstrated that DSM will place downward pressure on manganese prices. There is also a possibility, especially if there are multiple mines, that DSM will place downward pressure on cobalt, copper and nickel prices. The Study on the Economic Impact of Polymetallic Nodule Mining on Land-Based Miners[28] report concluded that eight African countries (Democratic Republic of Congo, Eritrea, Gabon, Madagascar, Mauritania, Namibia, Zambia, and Zimbabwe) were among the most likely countries to be negatively affected by DSM.

49. The African Group considers that the payment regime should be designed to raise sufficient revenue for the ISA to fully compensate developing land-based producers for any lost government revenue and/or export revenue due to lower land-based mining production or lower metal prices due to DSM. To evaluate whether this test has been met it is necessary to:

    a.) model the revenues the ISA will receive from DSM under different payment regimes. This work has, to date, not been completed, as the existing economic models effectively show ISA revenues from a single mine;
    b.) understand the relative shares of ISA revenues used to compensate mankind, fund the ISA's budget and compensate land-based producers. This work has, to date, not been completed and it is unclear what percentage of ISA revenues will be paid into the economic assistance fund;
    c.) model the impact of DSM on all relevant metal prices; and

[26] See: Baunsgaard, Thomas. "A primer on mineral taxation." (2001); and Wilde, Daniel. Key issues in natural resource taxation and revenue management in the commonwealth. No. 96. Commonwealth Secretariat, 2016.
[27] As shown in earlier African Group Submissions.
[28] The full title of this study is: 'Study of the Potential Impact of Polymetallic Nodules Production from the Area on the Economies of Developing Land-based Producers of those Metals which are Likely to be Most Seriously Affected,' and it is available at: https://www.isa.org.jm/files/documents/impactstudy.pdf

d.) model the future government revenues and export revenues of developing land-based producers given likely future metal prices in the absence of DSM and likely future metals prices with DSM. The difference in revenues between these two scenarios is the amount of financial compensation that developing land-based producers should receive from the economic assistance fund. The African Group is not aware of any study which undertakes this modelling.

50. In summary, there is currently insufficient evidence to determine whether either of the two proposed payment regimes will result in sufficient revenue to fully compensate land-based miners.

Test 7: The Simple to Audit and Administer Test

51. The Draft Regulations and proposed payment regimes value nodules based on the average grade and list price of the relevant metals contained within the nodule (the CVM approach). This approach is simple, transparent, easy to audit and minimises transfer mispricing risk.

52. The 2%/6% and 2%/5%to9% payment regimes thus pass the simple to audit and administer test.

Test 8: The Knowledge and Transparency Test

53. The two proposed payment regimes were designed, because many sponsorship agreements have not been published, without a detailed understanding of the financial relationship between miners and sponsoring states. The African Group considers that all sponsorship agreements should be immediately published and that the proposed payment regimes should be redesigned in light of the actual financial relationship between miners and sponsoring states. Due to most sponsorship agreements remaining unpublished, the 2%/6% and 2%/5%to9% payment regimes fail the knowledge and transparency test.

Test 9: The Sensitivity Test

54. Future metal prices and miners' costs are inherently uncertain. The payment regimes should thus maximise ISA revenues under a range of different assumptions concerning future metal prices and costs. A payment regime which maximises ISA revenues given very specific price and cost forecasts, but does not maximise revenues if actual prices and costs deviate from these forecasts, is unlikely to maximise ISA revenues in practice. As shown in previous African Group submissions, the conclusion that the 2%/6% payment regime maximises ISA revenues is very sensitive to moderate changes in the forecast of future metal prices and costs. The conclusion that the 2%/5%to9% payment regime maximises ISA revenues is less sensitive to changes in metal prices but is still sensitive to change in mining costs.

55. The 2%/6% payment regime thus fails, and the 2%/5%to9% only partially passes, the sensitivity test.

Conclusion

56. The two payment regimes proposed by MIT (2%/6% and 2%/5%to9%) are unlikely to maximise ISA revenues, offer insufficient compensation to mankind for the loss of resources to common ownership, and give deep-sea miners an artificial competitive advantage over land-based miners. Thus, the African Group does not support either of these two payment regimes.

57. It should, however, be noted that it is due to the low proposed rates that these payment regimes fail many of the nine tests and not the underlying options for the payment regime. Both a time varying

royalty regime (Option 2) with higher rates and a price varying royalty regime (Option 4) with higher rates would score better against the nine tests outlined above.

Part 2: African Group's Response to the Industry Position Paper

The Base for the Royalty

58. The Industry Position Paper recommends that the royalty should be levied on the value of nodule ore as measured by triangulating the market netback approach and the comparable ore approach. This differs from the CVM approach currently followed by MIT and the Draft Regulations.

59. The market netback approach determines the value of nodule ore by pricing the metal derived from processed nodules and deducting processing, smelting and transportation costs. The African Group considers that the netback approach would be a complex and impracticable way to determine the value of nodule ore as:

    a.) there is currently no historical data on processing and transportation costs, and even after commercial nodule processing has started, data on its costs may not be publicly available;
    b.) the ISA is poorly placed to demand actual cost data from processors, as processing will not take place in the Area and will not be regulated by the ISA;
    c.) processors are legally distinct from miners and have little reason to share processing cost data with the ISA. Alternatively, if miners and processors are owned by the same parent company then there may be a motivation for processors to overstate costs to minimise overall tax liability; and
    d.) if processing cost data were estimated it would be highly uncertain and open to continued questioning from various stakeholders.

60. The Industry Position Paper recognises that the net back approach involves numerous assumptions and recommends validating its results against those from the comparable ore approach. The comparable ore approach, as defined in the Industry Position Paper, involves valuing the cobalt, copper, manganese, and nickel in nodules with reference to land-based ores that contractors believe are comparable. For example, it is argued that the nickel in nodules can be valued with reference to seaborne nickel laterite ores.

61. The African Group considers that the comparable ore approach is fundamentally flawed. The chemical composition, geographic location and metallurgical processing costs of polymetallic nodules are all significantly different from seaborne nickel laterite ores and other land-based ores.

62. The Industry Position Paper's argument that nodule ore can be valued with reference to land-based ores also seems to be at odds with statements that The Metal Company Inc has made to investors. Specifically, with reference to nodules in the Area, their Investment Summary states:[29]

    'It's an unusually high-grade resource, with four EV metals packed into a single rock. On a nickel-equivalent basis, our nodules are 2 to 10-times higher grade than the world's largest undeveloped nickel projects.'; and

    'High grades of four metals in a single rock means we have a lot less ore to process. Less work for us to do, less mass to transport.'

63. The nodule ore value provided for in the Industry Position Paper of $156.5 to $187.5 per tonne also seems to be extremely low compared to other sources. The MIT 2019 Report's results, for example,

[29] See: Form 8-K Sustainable Opportunities Acquisition Corp, Conference Call Transcript, March 4th, pages 2 and 2021Available at: Sustainable Opportunities Acquisition Corp. 2021 Current Report 8-K (sec.report)

are consistent with a nodule value of approximately $867 and a nodules sales price of $398. **<u>The overall impact of adopting the recommendations of the Industry Position Paper on valuing nodules ore would be, for a set royalty rate, to reduce payments to the ISA by over 80%.</u>** It is very hard to see how such a change would benefit the Common Heritage of Mankind.

64. In conclusion, the African Group supports the CVM approach for valuing nodules provided for in the Draft Regulations as it is transparent, and simple to administer and audit. We do not support the netback approach as it is more complicated, relies on assumptions about processors' costs that are not readily available and would reduce ISA revenues. We do not support the comparable ore approach as the location, composition and processing costs of nodules are not comparable to land-based ores and because this approach would reduce ISA revenues.

The Rate for the Royalty

65. The Industry Position Paper argues that the royalty rate in the payment regime should be within the range of royalty rates for land-based mining of the same or similar minerals. With all due respect to the commercial contractors that authored the Industry Position Paper, that cannot be right. Section 8.1.b of the 1994 Implementing Agreement refers to 'rates of payment' and not 'the royalty rate'. If the intention of Section 8.1.b of the 1994 Implementing Agreement was for the royalty rate only to be the same between DSM and land-based mining then that section would have used the term 'royalty rate'. The use of the term 'rates of payment under the system' is broader and is correctly interpreted as the effective tax rate for the ISA payment regime.

66. In addition, directly comparing royalty rates from DSM and land-based mining makes no economic sense. Land-based mining tax regimes contain many taxes including customs duties, corporate income tax, royalties, value added tax and dividend withholding tax. In contrast, the proposed payment regimes for the Area (and this is highly unusual) only contain a royalty. Thus, to ensure that DSM is not given an artificial competitive advantage over land-based mining, the royalty rate in the payment regime must be high enough to have the same overall impact on deep-sea miners' profits as all the taxes paid by land-based miners.

67. The Industry Position Paper also claims that the African Group's earlier submissions, when discussing Section 8.1.b of the 1994 Implementing Agreement, omitted the wording 'of the same or similar minerals' and that this led to the African Group incorrectly comparing effective tax rates for DSM and land-based mining generally (as opposed to land-based mining of the same or similar minerals).

68. This claim does not stand up to scrutiny. The African Group in its earlier submission quoted Section 8.1.b in full,[30] and only quoted an abbreviated version of that section in tables later in the same submission. In addition, the more substantive point is that the African Group, when comparing effective tax rates between DSM and land-based mining, has always examined the tax regimes of countries that are significant miners of the same or similar minerals as those contained in nodules. For example, an earlier African Group submission[31] summarised the mining tax regimes of Canada,

[30] See: African Group Submission on the ISA Payment Regime for Deep-Sea Mining in the Area, July 2019, paragraph 7. Available at: AfricanDraftSubmissionISAJuly2019Part1Final
[31] African Group Submission of Two Payment Regimes for Consideration by the Council of the International Seabed Authority. Available at: Microsoft Word - AGSubmissionPaymentRegimes120719.doc (isa.org.jm)

Democratic Republic of Congo, Ghana and South Africa which are all significant miners of at least one of the four main minerals (cobalt, copper, manganese or nickel) contained in nodules.

69. The Industry Position Paper also argues that the payment regime should have a lower effective tax rate than land-based mining tax regimes because the ISA provides less goods and services to deep-sea miners than governments do to land-based miners. The African Group does not concur with this point for two reasons. First, miners are required to pay taxes as a contribution to society and not just to finance services that they directly or indirectly benefit from. Second, much of the tax deep-sea miners pay to the ISA will be distributed to member states, who will use it to finance education, infrastructure, and other goods and services that miners will directly or indirectly benefit from.

Withholding Tax, VAT and Payment for Services

70. The Industry Position Paper criticises the African Group's inclusion of withholding tax when calculating effective tax rates for land-based mining. It then goes on to state that 'It is therefore not appropriate for the ISA to be charging Withholding Tax or equivalent.' With all due respect, the authors of the Industry Position Paper have failed to understand the African Group's clearly stated position. The African Group has never said that the ISA should levy withholding tax. Rather, the African Group has consistently argued that the effective tax rate from the payment regime should be similar to the effective tax rate for land-based mining of the same or similar metals, with the effective tax rate for land-based mining including the impact of withholding tax because land-based miners pay that tax.

71. The Industry Position Paper also argues that deep-sea miners are likely to pay taxes to the ISA and sponsoring state. This is contrasted with the situation for land-based miners, which according to the Industry Position Paper, avoid double taxation due to tax agreements. This point by the Industry Position Paper, however, fails to recognise that many domestic sponsoring state tax laws may not classify (regardless of the absence of a double tax agreement with the ISA) income from mining in the Area as taxable income. In addition, the Industry Position Paper fails to recognise that some deep-sea miners have negotiated tax exemptions with their sponsoring states.

72. The Industry Position Paper also erroneously argues that the African Group 'implies that taxes such as VAT should be included.' The African Group has never said, or implied, that the ISA should charge VAT. Rather, the African Group, when comparing effective tax rates between DSM and land-based mining only modelled major land-based taxes and excluded taxes such as VAT and customs duties that often have a relatively minor impact on effective tax rates. If the African Group had included all taxes paid by land-based miners in its model, then the effective tax rate for land-based mining would have been higher, and the ISA royalty needed to ensure DSM was not artificially subsidised would also have been higher.

The Industry Position Paper's Narrow Focus on Profits

73. The Industry Position Paper states that 'We believe the principles and payment regimes proposed in AG Submissions 1 & 2 are a material departure from the **minimum requirements** for a commercially viable PMN industry' (emphasis added).

74. The Industry Position Paper is quite correct that the African Group's submissions were not principally driven by the 'minimum requirements for a commercially viable PMN industry'. The African Group's submissions were driven by the need for DSM to only occur if it is **demonstrably beneficial to mankind**. The African Group considers that a payment regime that meets the 9 tests outlined earlier

is possible and would result in DSM that was demonstrably beneficial to mankind and profitable for miners. However, if DSM is such a risky, high cost, low profit and environmental harmful form of mining that it will only occur with a payment regime that results in little revenue for the ISA, lower rates of payment than for land-based mining of the same or similar minerals and insufficient compensation for land-based mining countries, then the Industry Position Paper is quite correct that the African Group would not support such a payment regime even if that meant commercial DSM was delayed.

Sovereign Risk and Discount Rates

75. The Industry Position Paper states:

‘In contrast to most land-based jurisdictions that have a mature mining industry, the ISA does not have a track record of providing a stable and commercially viable regulatory regime for mining, and as such, the international investment community **places a higher risk on the ISA,** and in turn, investors will attribute a higher discount rate to projects within the international seabed area […]’ (emphasis added).

76. This statement does, however, seem to be inconsistent with page 22 of The Metal Company Inc Investment Summary, which states:

‘Seabed resources in the high seas are governed by the International Seabed Authority (ISA) – **Less sovereign risk’** (emphasis added).

Later in the same document, the Metal Company Inc presents the net present value of future profits using a **9% discount rate.**

77. The African Group concurs with The Metal Company Inc that the ISA has **‘less sovereign risk’.** It follows that investors will accept a lower post-tax internal economic rate of return (IRR) for investment in DSM than for land-based mining. It could be argued that the 9% discount rate used in the Investment Summary implies using a 9% hurdle rate for DSM. However, we consider it is better to assume a 12% hurdle rate, as this is the hurdle rate that is often used in land-based mining, and it provides a safety margin to encourage investment in DSM.

Part 3: Results from a Replication of MIT's Model of DSM but with More Realistic Assumptions Concerning the Hurdle Rate and Sponsoring State Tax.

78. The African Group has replicated the MIT DSM Model. This Replicated Model gives results, when the same assumptions are used, that are almost identical to those presented by MIT. The exact assumptions underpinning the Replicated Model are provided in annex 1.

79. The results from the Replicated Model are shown in table 1. The 2%/6% royalty payment regime appears to maximise ISA revenues at $3.9 billion over the life of the mine, but this conclusion is entirely dependent on the assumptions that miners pay sponsoring state corporate income tax at 25% and require a 17.5% hurdle rate (see table 1, column 1). But those assumptions are wrong. Some miners have negotiated tax exemptions from sponsoring states and told investors that mining in the Area involves 'less sovereign risk'.

80. Including the more realistic assumption that miners pay a royalty of $1.25 per dry tonne of nodules (and no corporate income tax) to their sponsoring state, the 2%/6% royalty only payment regime does not maximise ISA revenues. Rather, as seen in table 1, column 2, this payment regime results in miners achieving a 19.8% IRR, which is well above the 12% hurdle rate required to motivate investment. Likewise, the ISA's share of profits is just 22%, substantially below the effective tax rate faced by land-based miners.

81. The results for a 6.4%/19.3%[32] royalty payment regime are presented in table 1, column 3. This payment regime maximises ISA revenues given a 12% hurdle rate, two period time varying royalty and the assumption that the miner pays a $1.25 per dry tonne of nodules royalty to the sponsoring state. The effective tax rate from the ISA payment regime is reasonable, so there is no unfair subsidisation of DSM relatively to land-based mining. This payment regimes results in the ISA collecting over $12.4 billion in revenue over the life of the mine.

82. The simplest payment regime that the ISA could implement would involve a royalty that does not vary over time or with metal prices. As can be seen in column 4 of table 1, given realistic assumptions about sponsoring state tax, a royalty of 14.4% is consistent with the miner's IRR exceeding the required 12% hurdle rate.

83. Overall, any conclusion that a specific royalty rate maximises ISA revenues is very dependent on the underlying assumptions in the model. Moderate changes in the underlying assumptions result in massive changes in the royalty rate that is consistent with maximising ISA revenues. The African Group previously showed[33] how a payment regime with a royalty that increased (with nodule value) from 12% to 25% partially ameliorated this problem.

[32] The 6.4% royalty rate is applied for the first four years of commercial mining for a mine. The 19.3% royalty is applied for the remaining years of production.

[33] African Group Submission of Two Payment Regimes for Consideration by the Council of the International Seabed Authority. Available at: https://www.isa.org.jm/files/files/documents/agpaymentregimes.pdf

84. An alternative is to have a hybrid payment regime with a 5% royalty, 30% profit share and a 30% excess profits share. The excess profits share only becomes payable if, during the life of the mine, the miner's post-tax profits exceed the 12% hurdle rate. The results from this payment regime are shown in table 1, column 5, and as can be seen, the ISA receives $10 billion in revenue over the life of the mine, and the miner's IRR exceeds the 12% hurdle rate. The ISA receives a 56% share of the profits from mining, which ensures that DSM is not offered an unfair competitive advantage over land-based mining. This payment regime would, moreover, be unlikely to deter investment as the additional profit share is not paid if miners only make moderate profits.

85. Table 2 evaluates the three payment regimes proposed by the African Group against the nine tests proposed earlier. The payment regimes proposed by the African Group perform well against these tests. However, even for these payment regimes, there is not yet evidence that they result in high enough ISA revenues to fully compensate land-based miners for the impact on their economies of lower metals prices due to DSM. Any payment regime that is proposed by the ISA should also include a tax on the transfer of rights.

Table One: Results from MIT Replicated Model (in $ million real over the life of the mine unless otherwise stated)

	Column 1	Column 2	Column 3	Column 4	Column 5
	AG1: 2%/6% royalty, CIT = 25% and HR = 17.5%	AG2: 2%/6% royalty, CIT = 0% and HR = 12%	AG3: 6.4%/19.3% royalty, CIT = 0% and HR = 12%	AG4: 14.4% royalty, CIT = 0% and HR = 12%	AG5: royalty 5%, profit share 30% and EPS at 30% when IRR>12%, CIT = 0% and HR -12%
Miner Pre-Tax Profits	17,722	17,722	17,722	17,722	17,722
Miner Pre-Tax IRR	22.7%	22.7%	22.7%	22.7%	22.7%
ISA Fees	5	5	5	5	5
ISA Royalty	3,846	3,846	12,359	10,293	3,573
ISA Profit Share	0	0	0	0	4,093
ISA Excess Profit Share	0	0	0	0	2,302
Total ISA (exc Environment Fund)	3,852	3,852	12,364	10,298	9,974
Environment Fund	500	500	500	500	500
Sponsoring State Tax	3,343	94	94	94	94
Miner Post-Tax Profit	10,028	13,277	4,765	6,830	7,155
Miner Post-Tax IRR	17.6%	19.8%	12.0%	12.0%	15.4%
ISA Peak Revenues Per Annum	175	175	562	420	496
Miner Share of Profits	57%	75%	27%	39%	40%
Environment Fund Share of Profits	3%	3%	3%	3%	3%
ISA Share of Profits	22%	22%	70%	58%	56%
Sponsoring State Share of Profits	19%	1%	1%	1%	1%

Table Two: Evaluation of three of the payment regimes proposed by the African Group against nine tests for an effective payment regime

Test	Does the 14.4% royalty payment regime pass this test?	Does the 12% to 25% price varying royalty payment regime pass this test?	Does the 5% royalty, 30% profit share and 30% excess profits share payment regime pass this test?
Test 1: Fair compensation to mankind test	Yes. Mankind receiving 14.4% of the nodules value represents fair compensation.	Partially. The royalty rates at the lower end of the range are borderline.	No. The 5% royalty does not guarantee fair compensation to mankind when profits are low.
Test 2: The whenever miners make profits mankind must be compensated test	Only if a separate tax on the transfer of rights is included.	Only if a separate tax on the transfer of rights is included.	Only if income from the sale of the right is included in the taxable income of the seller, or if there is a separate tax on the transfer of rights.
Test 3: The economic efficiency test	Yes. This payment regime was designed assuming the same hurdle rates for DSM and land-based mining. Capital would only be allocated to DSM if it were a lower cost and less risky form of mining.	Yes. This payment regime was designed assuming the same hurdle rates for DSM and land-based mining. Capital would only be allocated to DSM if it were a lower cost and less risky form of mining.	Yes. This payment regime was designed assuming the same hurdle rates for DSM and land-based mining. Capital would only be allocated to DSM if it were a lower cost and less risky form of mining.
Test 4: The rates of payment test	Yes. The ISA's share of profits exceeds 40%	Yes. The ISA's share of profits exceeds 40%.	Yes. The ISA's share of profits exceeds 40%.
Test 5: The progressivity Test	No. The ISA's share of profits decreases as profits increase due to higher prices or lower costs.	Partially. The ISA's share of profits increases when profits increase due to higher prices, but not when profits increase due to lower costs.	Yes. The ISA share of profits increases when profits increase.
Test 6: The full compensation to land based mining countries test	Unproven. The higher ISA revenues under this regime may or may not be sufficient to fully compensate land-based mining countries for the economic effects of metal prices being lower than they would have been if there were no DSM.	Unproven. The higher ISA revenues under this regime may or may not be sufficient to fully compensate land-based mining countries for the economic effects of metal prices being lower than they would have been if there were no DSM.	Unproven. The higher ISA revenues under this regime may or may not be sufficient to fully compensate land-based mining countries for the economic effects of metal prices being lower than they would have been if there were no DSM.
Test 7: The simple to audit and administer test	Yes, if the royalty continues to be levied on nodule value. No, if there is any move to the comparable ore or net-back approaches.	Yes, if the royalty continues to be levied on nodule value. No, if there is any move to the comparable ore or net-back approaches.	No. Profit taxes are more difficult to administer and audit.
Test 8: The knowledge and transparency test	No. Most sponsorship agreements have not been published.	No. Most sponsorship agreements have not been published.	No. Most sponsorship agreements have not been published.
Test 9: The sensitivity test	No. The conclusion that this payment regime maximises ISA revenues is sensitive to underlying cost assumptions and sponsoring state tax assumptions.	No. The conclusion that this payment regime maximises ISA revenues is sensitive to underlying cost and sponsoring state tax assumptions.	Yes. This payment regime is the least sensitive to changes in the underlying assumptions because the excess profits tax is only paid once miners have made excess profits.

Part 4: Conclusion and the African Group's Position

86. The African Group does not support the 2%/6% or the 2%/5%to9% royalty payment regimes. These payment regimes do not result in fair compensation to mankind, do not maximise ISA revenues, and subsidise DSM relative to land-based mining. In contrast, alternative payment regimes proposed by the African Group result in reasonable post-tax profits for miners, higher ISA revenues and effective tax rates within the range of those faced by land-based miners of the same or similar metals. Thus, the African Group's position is that[34]:

    a.) the royalty should be levied on the CVM as is the case in the Draft Regulations;
    b.) if the payment regime includes a time-varying royalty as the only tax then the minimum acceptable rates for the royalty are: 6.4% and 19.3%;
    c.) if the payment regime includes a single royalty rate as the only tax, then the minimum acceptable rate for the royalty is 14.4%;
    d.) if the payment regime includes a price varying royalty as the only tax, then the minimum acceptable royalty rate range is 12% to 25%;
    e.) if there is a hybrid payment regime, then the minimum acceptable rates for the royalty, profit share and excess profit share are 5%, 30% and 30% respectively. The trigger for the excess profits share should be an IRR of 12%;
    f.) whatever the payment regime, it must include a tax on the transfer of rights;
    g.) any payment regime that is proposed will be evaluated against the African Group's nine tests and must score highly against those tests to win the support of the African Group; and
    h.) further work needs to be undertaken to understand the environmental costs of DSM and ensure that they payment regime fairly compensates mankind for such environmental harm.

[34] In the event that the base for the royalty is not calculated using the CVM approach, or that there is a change in the method underpinning the CVM approach, then the royalty rates provided in this paragraph will have to be revised.

Annex 1: MIT Replicated Model Assumptions

Assumption	Assumptions
Miner's Costs	The miner's total costs over the life of the mine are $12,159 million.
Miner's Production	Commercial production starts in year 11, and peak production of three million dry tonnes is reached after three years. Production finishes in year 35. A dry tonne of nodules includes: Cobalt 0.2%, Copper 1.1%, Manganese 28% and Nickel 1.3%.
Nodule Prices	The nodule sales price is $398 per dry tonne, which equalises the miner's and processor's post-tax internal economic rates of return under a 2%/6% royalty only payment regime.
ISA Taxes	The royalty and other taxes vary according to the payment regime being modelled. ISA fees are included.
Metal Prices	Long-term metal prices are Cobalt $54,651, Copper $6,844, Manganese $1,643 and Nickel $21,478 per tonne.
Metallurgical Processor Costs	The processors costs are: $18,553 million (capital and operating) plus $29,852 million for the purchase of nodules.
Metallurgical Processor Production	The assumed metal recovery rates are: cobalt 85%, copper 90%, manganese 90% and nickel 95%.
Metallurgical Processor Taxes	The processor pays a corporate income tax of 25%.