

# ***MAKING THE MOST OF DEEP SEABED MINERAL RESOURCES***

2/7/2014

Developing Financial Terms for Deep Sea Mining Exploitation

***“All things being equal (including tax), a country should attract exploration investment proportional to its international geological attractiveness rating. If investment is less, it implies other faults in the investment climate, such as excessive tax. However, if investment is greater than geological potential, investment conditions may be overly generous”.***

EITI Advancing the EITI in the Mining Sector: A consultation with stakeholders EITI 2009

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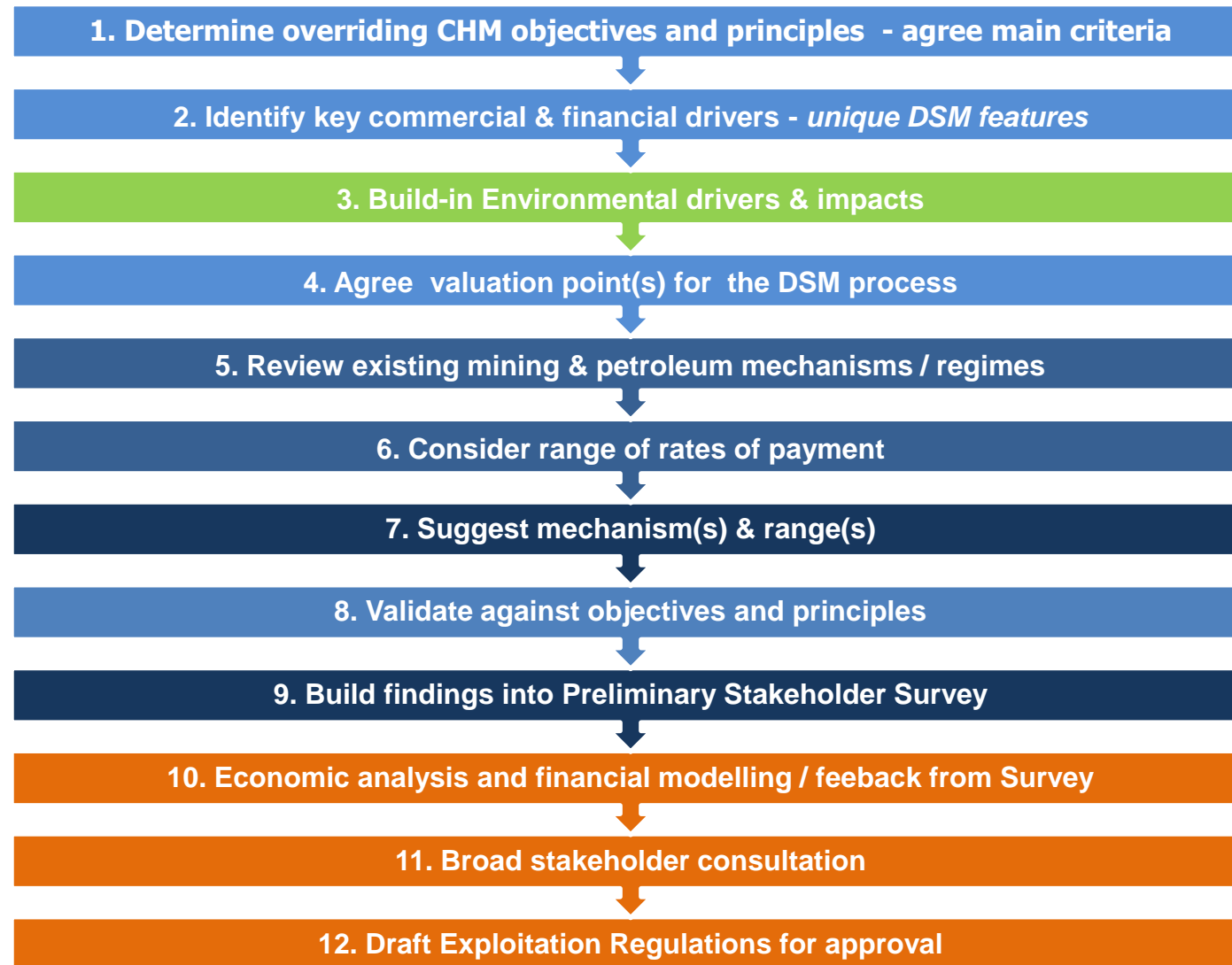
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## 1. *Important messages*

LTC Members & ISA Secretariat should be conscious of the following points in reading the contents of this Working Paper:

- The Working Paper has been prepared utilizing publicly available resources on the worldwide web;
- It presents a high level desktop review of mining tax regimes relevant to the main minerals due for extraction from the deep ocean floor;
- There are many State mining fiscal regimes which have not yet been reviewed; the study has been limited in the main to the top mine production States accounting for some 80% of world mine production of the selected minerals according to the latest data available from the US Geological Survey;
- Government fiscal mining policies and regimes remain in a high state of flux and continual stakeholder review following the 2008 global financial crisis and the introduction of higher levies on the mining sector generally;
- While the CHM principle embodies social justice, this has gained further support and momentum globally since the conclusion of the 1994 Implementation Agreement. This has also impacted and supported politically the debate around the true value of non-renewable resources - the resource nationalisation debate;
- The Working Paper does not develop further the concept of a Hybrid Social Business Model / Corporate Social Responsibility initiatives contemplated by ISA Technical Study: No. 11. This is an area that should be covered in a Stakeholder Survey;
- The Working Paper does not consider any form of equity participation by the ISA as is the practice under some mining regimes as this was not contemplated by the 1994 Implementation Agreement. In practice, this will be achieved through involvement by the Enterprise;
- No consideration has been given to any auctioning or up-front bonus mechanism;
- No detailed consideration has been made of any financial issues or considerations specific to the operation of the Enterprise;
- Any recommendations, conclusions and models proposed by the LTC should ultimately be tested and supported by economic analysis and detailed financial modeling.

***Suggested process flow for discussions***



## 2. Abbreviations used in this Working Paper

CEE	Canadian exploration expenses	IMF	International monetary fund
CHM	Common heritage of mankind	IRZ	Impact reference zones
CIF	Carriage, insurance, freight	IRR	Internal rate of return
CIT	Corporate income tax	ISA	International Seabed Authority
CP	Commercial production	LME	London metal exchange
CRD	Capital recognition deduction	LOSC	United Nations Convention on the Law of the Sea of 10 December 1982
CSR	Corporate social responsibility	LTC	Legal and Technical Commission
DB	Declining balance	LTBR	Long-term bond rate
DSM	Deep seabed mining	MRRT	Minerals resource rent tax
DTA	Double tax agreement	MSR	Marine scientific research
EBIT	Earnings before interest and tax	NPV	Net present value
EBITDA	Earnings before interest, tax, depreciation and amortisation	NSR	Net smelter return
EI	Extractive industries	OECD	Organisation for Economic Co-operation and Development
EIA	Environmental impact assessment	PBT	Profit before tax
EITI	Extractive Industries Transparency Initiative	PN	Polymetallic nodules
EMP	Environmental management plan	PRZ	Preservation reference zones
ETR	Effective tax rate	R&D	Research and development
FOB	Free on Board	RRP	Rules, regulations and procedures
FMV	Free market value	RRT	Resource rent tax
GAAP	Generally accepted accounting principles	RSPT	Resource Super Profits Tax
GDP	Gross domestic product	SL	Straight-line
IA 1994	Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982	TS	Technical study
ICMM	International Council on Mining and Minerals	WHT	Withholding tax
IFRS	International financial reporting standards	WP	Working paper

### ***3. Executive summary***

### 3. Executive Summary

#### **Report Terms of Reference**

The author of this working paper was commissioned by the International Seabed Authority (ISA) to prepare a study of comparable extractive industry fiscal regimes for presentation to the Legal and Technical Commission (LTC) of the ISA in February 2014.

#### **Report Context**

The main purpose of the study is to assist the LTC in the further development of the Mining Code, specifically the financial terms applicable to the exploitation of polymetallic nodules (PN) in the Area.

The ISA has produced Technical Study No. 11 *Towards the Development of a Regulatory Framework for Polymetallic Nodule Exploitation in the Area*. TS No. 11 has outlined some of the guiding principles, issues and challenges connected with the development of a fiscal regime. Possible options referred to include an *economic rent* to capture surplus (windfall) revenues together with a royalty regime, incorporating a potential environmental levy.

This working paper aims to build upon that study by looking into specific mining tax regimes currently in place and to present a starting point for stakeholder discussions and negotiations.

#### **A state of flux & continuing design**

In reading this paper, LTC members should appreciate that the taxation of extractive resources is in a state of flux as governments seek to balance their fair share of rent while at the same time balancing investment in-flows.

Significant research in the field of extractive industries and related taxation has already been undertaken by the International Monetary Fund (IMF), the World Bank and the Organization for Economic Co-operation and Development (OECD). Specifically, the IMF has conducted a number of in-country reviews and continues its consultative process on the *Taxation of Natural Resource Rents* in developing countries.

The financial terms ultimately agreed to ISA member States will give rise to a unique system, being a first truly global fiscal system.

#### **Delimitation**

This paper does not include any detailed economic analysis or projection of likely revenues to the ISA. Equally, it does not consider the economic impact on either Sponsoring States or Contractors. The modelling of any proposed regime is essential to determine its impact on the progressivity of any proposed regime.



# 18 key findings...

**1. The complex financial interaction between all parties drives the need for an international conference of key stakeholders.**

**2. Financial terms are not independent and must be seen as part of a total package including environmental impacts, CSR and CHM benefit sharing.**

**3. Detailed financial modelling and economic analysis is required to support any high level findings.**

**4. Some land-based mining fiscal regimes are now inherently flawed. Many are in transition.**

**5. There is one simple trade-off in any payment mechanism: administrative capacity versus optimal (best) revenue opportunity.**

**6. There is a complex trade-off & discussion between the division of normal profit and economic rents.**

**7. Fiscal transparency in Extractive Industries is driving exponential change. EITI principles will need to be reflected in the ISA financial regime.**

**8. Aligning financial accounting requirements and profit share will reduce administrative complexities.**

**9. A full understanding of the DSM value chain is needed to determine an appropriate valuation point.**

**10. Establish a trust fund to cover damage to the environment not covered by the LOSC / contracting parties (ITLOS recommendation).**

**11. Whether a premium should be attached to the non-renewable nature of mineral resources is undecided.**

**12. A “safety valve” should be built-in to the mechanism which kicks in during periods of high pricing or end of mine life.**

**13.** In developing any incentives for attracting investments these should be specific, targeted, costed and temporary. Some country incentives make little financial sense.

**16.** The payment mechanism must support commercially sound principles. It must not support wasteful & inefficient mining practices.

**14.** A profit / rent-share model need not be unnecessarily complicated. But any discussion over defining acceptable levels of financial return is complex.

**17.** The treatment of exploration costs requires close attention and careful consideration.

**15.** Closure & reclamation require upfront consideration under the payment mechanism.

**18.** The concept of a “fair and equitable” share among mining participants has yet to be determined.

## **Executive Summary**

**Fiscal models in the mining sector are becoming overly complex.** This is not surprising. A reduction in income tax rates (a major driver of fiscal revenues) in the 1980s onwards combined with a commodity price boom in the 2000s afforded mining enterprises the perceived opportunity to reap economic profits. Since that period, there has been increasing temptation to raise tax and royalty rates. Some of this has been driven by political reaction that countries have not been receiving their fair share. Consequently, some States are bolting onto perhaps a flawed foundation while others are retaining a traditional royalty base but increasing participation through equity stakes. This is an attempt to secure a fair share. Equally, many developing States are restricted by historic fiscal stability agreements which prevent increases in, and often promote reductions in, taxes normally applied to other sectors and mining-specific royalties.

**A fair and equitable return remains at the very centre of this debate.** A fair financial return is often cited as the primary objective for a resource owner followed closely by the appropriate level of risk-sharing between the resource owner and miner; a system of payments that does not have a distortionary impact on reasonable commercial reward (for example, “excessive” royalties) and relatively simple administration for all parties. This is a very tall order for any system. There are, as yet, no objective criteria to determine a fair and equitable share.

**One trend that has driven much in the way of change in the extractive industries sector is transparency.** This fundamental principle has driven partly the *resource nationalisation* debate. The Extractive Industries Transparency Initiative, being a coalition of governments, industry and society is forging openness and accountability in revenue streams and the overall management of natural resources. This is being translated into national law across the globe.

**In the 21<sup>st</sup> century, under both the common heritage of mankind principle and sustainable development, that fair and equitable share must embrace, the environment and communities as stakeholders – the social licence to operate.**

**Any fiscal model must support commercially sound practices and promote environmental objectives.** Many models are potentially supporting wasteful and inefficient practices in an attempt to secure investment. Capital investment is mobile. The DSM financial regime should promote commercial principles and objectives in parallel with social responsibility objectives. Environmental objectives must also be incorporated into the financial regime with a mix of both a carrot (incentive) and stick (penalty) approach.

**Exploration and development costs, exchange impacts, mineral commodity prices and geological prospects have a far greater significance to the economics and commercial viability of deep sea mining projects than a reasonable payment mechanism.** Consequently, any regime needs to be robust, responsive, flexible and non-discriminatory in addressing these specifics.

**The mining sector should be no more complicated to tax than other business sectors.** This is very true. However, given the levels of risk, capital investment and a desire by States to attract that investment, mining (and petroleum) models have generally received special fiscal treatment compared to other business sectors.

**Best fiscal practice to date suggests a minimal flow of revenue to a resource owner and “progressivity”.** That is, a minimum royalty base and progressive models of taxation which share incrementally in mining revenues. The higher the operating margin on a mining project, the higher the government take. But this has not been adopted in all cases due to capacity / administrative constraints and industry opposition.

**There are regional trends in the development of specific mining fiscal models.** In the South and Middle America region, specifically Chile, Peru, Mexico and Uruguay, additional profit tax models have been adopted. The African continent has generally retained royalty structures, with an upward trend in royalty rates. Canada, having remained largely stable for many years, is reviewing its mining models; Quebec is now proposing a re-structured but progressive mining tax; Indonesia and the Philippines are in a state of change and Australia is seeking to remove its mineral resource rent tax from the statute book.

**Rent resource tax (RRT) models have yet to be fully tried and tested for the mining sector.** RRTs have been successfully deployed in the petroleum sector, particularly Norway, but not, as yet, in the mining sector. There are a number of factors that influence this. Relatively stable pricing and regimes in the petroleum sector compared to metal commodities, which are more susceptible to economic cycles. RRTs have a theoretical, economic appeal in the mining sector. Their objective is clear but their design is difficult. Their administration however, is no more complex than a profit income tax model.

**A fundamental principle of the 1994 Implementation Agreement is that deep sea miners are neither afforded a competitive advantage nor be placed at a competitive disadvantage.** In effect the ISA regime must be internationally competitive.

### **Key suggestions & recommendations**

*LTC Members will understand that some of the suggestions and recommendations below will also require validation by economic analysis and modelling, by the results of a preliminary Stakeholder Survey and through subsequent consultation with stakeholders, particularly contractors.*

#### **1 There needs to be a minimum flow of revenue to the ISA through a production / royalty-based mechanism.**

- Royalties are not particularly sensitive to mine profitability. Therefore, a *reasonable* ad valorem royalty (c.2%-4%) should be imposed on “sales”. This would be within the range of existing regimes though “sales” requires a clear definition and valuation point. As a royalty is not linked to profitability, this will produce an assured (albeit minimum) flow of revenue from the point of *commercial production*<sup>1</sup> (see below).

#### **2 That a profit-share / royalty on profit mechanism or progressive royalty structure is considered which targets normal profit (akin to a land-based corporate income tax model)**

- In order to satisfy both best practice (progressivity) and being within a range of rates of payment.
- The range of CIT rates in this study is 16% - 40% with a median point of 28%.
- The mechanism itself needs to be fully considered and encompass forward-looking capacity and administrative constraints and accounting model/ system. There are additional staff cost & system implications.
- That consideration is given to the treatment of the key drivers of the profit-base:
  - Treatment of pre-production, exploration, development expenses and capital expenditure;
  - Rehabilitation and restoration expenditure (where relevant) / environmental fund treatment; and
  - Transfer pricing / arm’s length valuations.
- Need to establish a “taxing point” for a profit share mechanism.

#### **3 That an additional profit share mechanism is built-in which is incremental to the profit mechanism above.**

- This should, in theory, be targeted at economic rents (longer term).
- This is a particularly complex area and opinion seems to be evenly divided on the merits of a resource rent tax.
- Consequently, consideration can also be given to an additional profit tax (similar to that imposed in Chile and other States) which is more progressive than an ordinary income tax model. Can combine 2 and 3.
- Trends in this area need to be monitored as being “within a range”.

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<sup>1</sup> Assuming any royalty will commence at the point of commercial production and not before.

**4 Point of Valuation and the Value Chain**

- This is critical and underpins the entire process for the financial payments mechanism.
- A full review of all possible scenarios in the DSM value chain is needed to determine the valuation point for sales revenues (royalties) and expenses.

**5 In view of the many financial and other uncertainties that surround the DSM regime, there may be merit in considering an interim / transitional model. That is, the phasing / adjusting of a financial regime and mechanism over a reasonable timeframe as economic models and behaviour develop.**

**6 “Commercial production”: this term is at times difficult to define absolutely.** It is often subjective unless production levels or capacity design levels are agreed upfront. It is recommended that a discussion take place over its value in a DSM / Area context. This may be dependent on the payment mechanism that is ultimately adopted.

**7 That consideration be given to an Environmental Trust Fund**

- This needs to be included in a Stakeholder Survey: the base of its calculation / contribution rate.

**8 Exploration costs:** though considered in 2. above, this is an area that requires some further thought in terms of treatment and its on-going reporting, including the quality of reporting.

**9 Desktop reviews should be undertaken on the following areas:**

- Environmental taxation: best practice and trends. Though this can be encompassed in the Stakeholder Survey;
- Dead rents: to benchmark a range of dead rents and / or other similar fees;
- EITI guidelines and standards and applicable / relevant practices for LTC consideration.

**10 In due course, it would seem sensible to establish an appropriate benchmark for the ISA’s fair share e.g. X% of accounting profits against which to assess the constituent elements of the ultimate ISA mechanism.**

- **It is suggested that discussions at this preliminary stage focus on a best payments model / system for the ISA financial share and the incorporation of specific environmental objectives rather than any detailed discussion over rates of payment. These discussions and open issues can then be reflected as necessary in the Stakeholder Survey.**



## Update – March 2015

Since the preparation and circulation of this Working Paper to the LTC in February 2014, a number of areas and developments warrant specific mention.

1. **Stakeholder Survey:** since the preparation of this Working Paper, the ISA published a survey to stakeholders in March 2014. The result of that survey will be built into a number of discussion papers for circulation to stakeholders, including a paper relating to financial terms.
2. **Transparency:** Canada has now implemented transparency obligations under federal law.<sup>2</sup> This will require Canadian businesses engaged in extractive industries to report various types of payments made, including those to foreign governments. In December 2014, KPMG International published a report demonstrating the move toward the disclosure of payments by mining companies is no longer a question of “if” but how much should be disclosed.<sup>3</sup> Equally, the work being undertaken by the OECD on transfer pricing and profit shifting is also driving taxpayer disclosure.<sup>4</sup>
3. **Fair share:** the issue of a fair share continues to be discussed with continued activity in resource nationalism (increased royalties, taxation, government ownership). It is fundamental that the development of a policy (and supporting legal / financial framework) is undertaken in consultation with relevant stakeholders, particularly investors to drive a fair and balanced financial regime.
4. **Changes in royalty and tax rates:** a number of States have increased royalty rates including India: copper (from 4.2% to 4.62%); managanese (from 4.2% to 5%). Chile is staging an increase in its corporate tax rate from October 2014; the rate will be 25% or 27% depending on which tax regime is chosen.<sup>5</sup> One of the first contract renegotiations (nickel) in Indonesia has seen an increase in royalties from 0.6%-0.7% to 2%-3% together with a requirement to divest further foreign-held interest to local investors.<sup>6</sup> Zambia has increased its headline royalty rates from 6% to 20% in the case of open-pit mining (underground from 6% to 8%).<sup>7</sup> Australia’s MRRT was abolished effective 1 October 2014.

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<sup>2</sup> Extractive Sector Transparency Measures Act.

<sup>3</sup> KPMG Global Mining Institute *Trends in taxation: coping with transparency, mining royalties and volatility* KPMG International, December 2014.

<sup>4</sup> It should be remembered that these largely apply to multinational groups. Activities in the Area will be conducted by States and State enterprises and a unique set of challenges will present themselves.

<sup>5</sup> Effective (distributed) rates will range from 35% to 44.45%.

<sup>6</sup> EY *Resource nationalism update* November 2014.

<sup>7</sup> It is reported that over 50% of copper miners are now operating at a loss: see EY *Resource nationalism update* February 2015.

## ***4. Introduction & background***

- ***Industry challenges***
- ***The LOSC and the 1994 Implementation Agreement***
- ***Trends in mining taxation***
- ***Examples of recent changes***
- ***Fiscal stability agreements***
- ***Commercial principles / social justice***
- ***The non-renewable nature of mineral resources***
- ***Concluding remarks***

## Introduction & background

Between 2000 and 2010, the value of the global mining industry rose from US\$214 billion to US\$ 644 billion as a consequence of increased output and increased metal prices.<sup>8</sup>

Consequently, it is unsurprising that governments have sought (or are seeking) to capture an increased take from this value or what is perceived as windfall profits by investors. Generally however, this reaction, at times “knee jerk”, has resulted in add-ons (additional royalties and/or additional profit taxes) to an existing regime.<sup>9</sup> It is suspected that some of these regimes are now inherently flawed having been put together for political expediency rather than with consideration to a longer term picture. Consequently, the very foundations of mining tax structures could be unstable for the 21<sup>st</sup> century. This presents the ISA with both a challenge, given some of the restrictions placed by the IA 1994 and an opportunity – an opportunity to get it right.

In addition to an overall increase in tax take, tax transparency is now a major agenda item. This includes incorporating the standards of the Extractive Industry Transparency Initiative (EITI) into national legislation.<sup>10</sup> In essence these standards require

companies in the extractive industries to report what they pay to governments and equally for governments to make public the payments they receive. Ultimately, the two need to be reconciled.

## Industry challenges

While a detailed analysis of the challenges facing the global mining industry are outside the scope of this WP, it is interesting to alert LTC Members to the impact of the *resource nationalism* debate in the global mining sector.<sup>11</sup> This remains one of the top challenges and risks to the mining industry with a number of countries taking increased equity stakes in companies and ventures.<sup>12</sup> These include Guatemala, Mongolia, Guinea and Namibia. As noted below, other forms of resource nationalism includes the imposition of new taxes and royalties (Chile, Peru, Brazil, Mexico and Australia to name a few).

A recent Chatham House study observed:

“At the heart of the problem is the absence of a practical formula or a benchmark to determine an equitable distribution of revenues between the state and companies in extractive ventures. Model contracts of the 1990s have by and large failed to weather the

which requires such mandatory reporting. Canada will also follow suit in respect of mining and oil and gas companies.

<sup>11</sup> See generally, Deloitte *Tracking the trends 2013: The top 10 issues mining companies may face in the coming year 2013*; EY *Resource nationalism update* October 2013; EY *Business risks facing mining and metals 2013-2014* (2013).

<sup>12</sup> Conflict between government and private investors is also rising dramatically and a wider involvement by local communities relating to environmental degradation. See Stevens P, Kooroshy J, Lahn G and Lee B *Conflict and Coexistence in the Extractive Industries* A Chatham House Report, November 2013.

<sup>8</sup> ICMM *Trends in the mining and metals industry: Mining's contribution to sustainable development*, October 2012.

<sup>9</sup> This reaction has been driven by increased transparency (EITI), the resource curse debate and publication of taxes paid.

<sup>10</sup> See *G8 leaders promote transparency in mining* PWC Mining Tax Update / January–June 2013. See also Section 1504 *Dodd-Frank Wall Street Reform and Consumer Protection Act 2010* and the European Union's Transparency Directive

commodities price boom. According to the World Bank, more than 30 countries have revised petroleum contracts or entire fiscal regimes between 1999 and 2010. In mining, at least 25 governments (including most major mining countries) announced or implemented tax or royalty increases in 2010 and 2011 alone.

Revenue-sharing is often the frontline of company–government disputes. How to ensure a ‘fair share’ for each party remains an overriding challenge, and perceptions of fairness or equity are heavily shaped not only by the changing domestic and international context, but also by historical experience.”<sup>13</sup>

Consequently, some land-based mining regimes are now inherently flawed, not least the division between “normal profit” and that of “economic rents”. That said, much of this has stemmed from individually negotiated agreements. The ISA regime should not suffer from this to a large degree – there will be one, non-discriminatory regime. That said, the discussion over a fair share and normal versus economic rents remains relevant.

There is a challenge in considering the issue of comparable *rates of payment* under the ISA fiscal mechanism as it is not possible to predict the short or longer term nature of increased taxes and levies on the land-based mining sector. Whatever the trend, some broad assumptions need to be made based on the current position while making a system flexible and responsive to future change.

Oil and gas regimes by contrast have been relatively stable, not least in Norway. But the mining sector generally has higher

<sup>13</sup> See Stevens *Conflict and Coexistence in the Extractive Industries* A Chatham House Report, November 2013 at xi.

operating costs compared to the oil and gas industry. Once a well is discovered and the infrastructure in place, petroleum “freely” flows. Equally, the impact of OPEC in preventing abnormal price falls contributes to a degree of income stability compared to most mining commodities. There are, however, some parallels between DSM and the petroleum sector relating to infrastructure requirements and operational risk.

### *The LOSC and the 1994 Implementation Agreement*

The informal consultations conducted by the UN Secretary-General in the lead up to the IA 1994 while not providing specific guidance on the development of financial terms, do raise some interesting observations.<sup>14</sup>

The LOSC originally provided for two types of payment in respect of exploration and / or exploitation. Firstly, an application fee of US\$500 000 and a fixed annual fee of US\$1 million. The fixed fee was set to ensure access to the Area by “serious” miners only.

The second type of payment presented contractors with a choice. Either the payment of a “production charge” (or royalty) only;<sup>15</sup> this was to be based on the market value of processed minerals. Or the combination of a production charge and a “share of net proceeds”

<sup>14</sup> See generally Secretary-General’s Informal Consultations on Outstanding Issues Relating to the Deep Seabed Mining Provisions of the United Nations Convention on the Law of the Sea: *Collected Documents*, International Seabed Authority, 2002.

<sup>15</sup> See Annex III, Article 13(5) being 5% and 12% of the market value of the processed minerals in years 1-10 of commercial production and year 11 to the end of commercial production. The application of this paragraph was removed by the 1994 Agreement.

in favour of the ISA. The ISA's share of "attributable net proceeds" was "equivalent to the tax that a national government obtains from mining profits".<sup>16</sup> The calculation was to be based on a three-tier sliding scale determined by a return on investment and according to the first period of commercial production and the second period of commercial production. The share varied between 35% and 70% of attributable net proceeds. The theory behind this approach is that the second period equates to a resource rent, taxable at a higher rate – equivalent to a domestic additional profit tax or RRT.

Concerns were raised, however, during the informal consultations that this system was too burdensome, both financially and administratively.<sup>17</sup>

Equally, it was considered that mining States, under too lenient an ISA fiscal regime could levy their own national taxes at the expense of the international community.<sup>18</sup> This remains a valid consideration today.

There are two points of further interest in the discussion. First, early wording referred to the "rates of taxation" and "rates of financial payments" rather than "rates of payments". Secondly, that "States must respect the extra-territorial nature of deep seabed mining in the international area and should avoid or minimize double taxation on the proceeds of deep seabed mining in order to

ensure optimum revenues for the Authority".<sup>19</sup> This wording constituted an early principle as it was considered the issue was highly technical and one to be left open for discussion. The principle, however, was not reflected in the final wording. Again, this is an area that could severely undermine the economic efficiency of any financial regime and will continue to be of fundamental interest to commercial investors.

Without the full cooperation, transparency and profit-take arrangement between all actors, including sponsoring and / or home country States, any optimal (best) fiscal model may prove unworkable in practice.

At the time it was considered that a production charge had three merits: first, a stable source of revenue for the ISA and a relatively well-known basis for contractors. Secondly, both the ease of monitoring for the ISA and accounting obligations of a contractor and thirdly, it relieves the ISA to monitor beyond those "activities in the Area", being transportation, processing and metal marketing.

While these statements hold true, a production charge would still require the ISA to undertake a process to verify pricing on which the charge is calculated.

Later wording included "States shall cooperate with the Authority in order to review problems which may arise from payments to States

<sup>16</sup> Secretary-General's Informal Consultations on Outstanding Issues Relating to the Deep Seabed Mining Provisions of the United Nations Convention on the Law of the Sea: *Collected Documents*, International Seabed Authority, 2002 at 59.

<sup>17</sup> Ibid.

<sup>18</sup> Ibid at 60.

<sup>19</sup> Ibid at 60-61.

by operators from the income of deep seabed exploitation and to solve such problems”.

There is, to date, no one single fiscal regime applicable to extractive industries which is deemed to capture both government policy, including social benefits and reform, and investor satisfaction.

#### *Trends in mining taxation*

Mineral tax regimes of the 1990's have been the subject of much policy discussion and dynamic change. Extractive industry fiscal regimes have also been the object of many high level debates, both theoretical and pragmatic, by distinguished experts. It would be safe to conclude that no single taxing authority has yet established an optimal tax base, or consequently the level of optimum reserves and life of a mine. Indeed most systems have probably developed out of a level of compromise than a true balance between revenue stability and economic efficiencies.

Mineral mining tax regimes remain in a high state of flux. Some governments have introduced “windfall” profit taxes, most notably Australia, to varying degrees of controversy and success. This period of instability is likely to continue as governments assess the impact on both revenues and capital investment.

There has been a general continuing trend to increase the overall tax burden on mining companies. This has both been through increasing tax and royalty headline rates and also amendments to the underlying base calculations.

For example, **Brazil's** CFEM has both increased in rate but is now applied to gross, as opposed to net revenues. Some territories have introduced ring-fencing provisions in the last few years.

By contrast, fiscal regimes applicable to the oil and gas sector have both remained relatively stable and by and large more effective and efficient in delivering policy goals, objectives and significant revenues.

Mining tax regimes should, at least in principle, be no more complex than other business sectors. However, given the relative importance of natural resources to some countries (particularly developing economies) and a desire to secure high levels of capital investment, attractive tax regimes have been structured to attract such investments. Yet, following commodity price rises in the 21<sup>st</sup> century, these structures have been found wanting in terms of an equitable distribution of revenue between various stakeholders.

Indeed, the position has been further complicated by the negotiation of specific arrangements (fiscal stability agreements). Though such deals facilitate investment, they undermine a coherent

and fair application of a tax regime and distort revenues. These concerns have led to recent “resource nationalisation” debates.<sup>20</sup>

A full review of the various economic, social and political aspects connected with the development of mining fiscal regimes is outside the scope of this paper. However, there are factors in the design of fiscal regimes which have contributed to the current state of flux. These can be summarised as follows:

- In seeking to attract investment, fiscal regimes have recognised the risks inherent in the mining industry – high levels of capital investment over long periods of time, continued investment in exploration, optimising the life of a mine, rehabilitation costs etc.<sup>21</sup> These factors in the mining business cycle have generally resulted in attractive and generous tax treatment when compared to other business sectors; and
- A general reduction in the corporate income tax rates across developed and developing countries over the last three decades. Between 2005 and 2013 alone, a significant number of countries reduced their statutory corporate income tax rates. In 34 OECD countries, the average CIT rate dropped from 28.2%

<sup>20</sup> This is being effected in three ways: increased mining taxes and royalties; mandatory beneficiation of minerals in-country (or the levy of excise duties) and retaining full or partial ownership of the resources.

<sup>21</sup> Some regimes have been criticised for being overly complex as well as overly generous in the preferential treatment of mining operations.

to 25.5%<sup>22</sup> and in 56 non-OECD countries from 29.2% to 24.8%.<sup>23</sup>

The table below shows the average corporate tax rate changes by region since 2005.

#### ***Changes in Average Corporate Tax Rates<sup>24</sup>***

<b><i>Region (avg)</i></b>	<b><i>2005 (%)</i></b>	<b><i>2013 (%)</i></b>
Africa	30.82	28.57
N America	38.05	33.00
Asia	28.99	22.49
Europe	23.70	20.60
Latin America	29.07	27.61
Oceania	30.60	27.00
<b>Global</b>	<b>27.50</b>	<b>24.08</b>

As to **royalties**, the upper end of ad valorem royalties (single instruments linked to sales value not market price or profitability) is around 4-6%.<sup>25</sup> This compares to rates typically being in the range of 2-3% at the beginning of the century.

<sup>22</sup> On a weighted average basis, the CIT rate dropped from 35.4% to 32.5%.

<sup>23</sup> Chen D & Mintz J 2013 *Annual Global Tax Competitiveness Ranking: Corporate Tax Policy at a Crossroads* Vol 6, Issue 35, November 2013, The School of Public Policy, SPP Research Papers, University of Calgary.

<sup>24</sup> KPMG Corporate Tax Rates Table.

<sup>25</sup> Otto considers in a land-based environment, a rate of 5%+ could force marginal mines to close during a low price cycle. See Otto JM *Expert Opinion on Mine Taxation Pertinent to the Sheshinski Committee II for the Review of Policy with*



There are certainly regional trends. In **Australia**, royalty and profit-take mechanisms at a provincial / state level have remained stable; however, at the federal level, Australia's rent tax is now in jeopardy.

In the Middle and South American Region, there has been a shift toward additional profit tax mechanisms based on operational margins (**Chile and Peru**) and adjusted profit (**Mexico**) rather than any increase in royalty rates. Though **Brazil** is an exception. **Uruguay** is the latest country (September 2013) to adopt a new large scale mining law including the adoption of a progressive tax rate.<sup>26</sup>

In the African continent, there has been a general shift upwards in royalty rates, notably South Africa which did not previously levy royalties and **Zambia**.<sup>27</sup> Aside from headline rate increases there have been changes in the calculable base. For example, **Tanzania** in 2010 changed the base from a net back to a gross value. Equally, a number of countries (**Tanzania, Zambia, Liberia, Mozambique and South Africa**) have introduced ring-fencing provisions. There appears to be some hesitancy in adopting profit-related regimes (on top of existing income tax structures). This is at times due to pressures from industry and a consequential impact on

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*Respect to Royalties on Natural Resources formed by the Israeli Ministry of Finance* 4 November 2013

<sup>26</sup> The progressive rate is calculated as (mining operating margin x 0.90 - 0.25) x 100. The maximum is an operating margin of 0.70 (70%) which implies a maximum tax rate of 38%.

<sup>27</sup> It is reported that Zambia may further increase royalties from 6% to 10%: Govt to consider royalty tax increase-Yaluma, 31 January 2014, [http://www.postzambia.com/post-read\\_article.php?articleId=44170](http://www.postzambia.com/post-read_article.php?articleId=44170).

levels of investment. Equally, there is the issue of administrative capacity – on the whole royalties are generally simpler to administer.

In 2011 **Mongolia**, an emerging producer of copper<sup>28</sup> abandoned its additional profit tax and introduced a royalty surtax referenced to international pricing and lower rates on concentrates and product to encourage local beneficiation.

**China** introduced a resource tax in November 2011 to counter environmental degradation. **India** saw an increase in royalties in 2009. **Indonesia** is currently in the process of renegotiating its mining contracts of work under the 2009 with royalties being the major sticking point.<sup>29</sup> Indonesia is also introducing progressive export duties to force local processing.<sup>30</sup>

### *Examples of recent changes*

**Mexico's tax reform bill** has been enacted. This sees the corporate income tax (CIT) rate remain at 30%<sup>31</sup> together with a new mining tax levied at 7.5% of earnings before interest, taxation and depreciation / amortisation and a 10-year depreciation rate for pre-mining expenses. This is effective 1 January 2014. Precious

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<sup>28</sup> Copper production is estimated to be c. 834 million metric tonnes by 2015. Tax revenues from extractive industries have grown exponentially. Between 2010 and 2011 revenues grew by 66% to US\$ 1 518 million.

<sup>29</sup> "Royalties slow mining renegotiations" *The Jakarta Post* <http://www.thejakartapost.com/news/2014/02/03/royalties-slow-mining-renegotiations.html>, 3 February 2014.

<sup>30</sup> By 2017, companies will be required to undertake copper ore to copper cathode processing onshore. Currently a 20% export tax on unprocessed metals.

<sup>31</sup> Previous legislation enacted a 1% cut to 29% in 2014 and to 28% in 2015.



metals are also subject to a 0.5% net smelter return royalty. Both amounts are deductible for CIT.

In 2011, **Peru** adopted a new law with a tax of 1% to 12% on operating profits; this replaced existing rates of between 1% and 3% of net sales. And a “special Tax” of between 2% and 8.4% depending on profit margins.

The **Philippine Mining Industry Co-ordinating Council** has proposed a single tax regime of 10% of gross mining revenues to replace principally all taxes and royalties, including CIT and royalties. The draft bill has been submitted to the President.

On 1 March 2010, **South Africa** introduced a progressive royalty regime based on EBIT, with a minimum royalty rate of 0.5% and a maximum rate of between 5% and 7% depending on whether minerals are refined or unrefined. However, the mining fiscal regime is now subject to much uncertainty. First, there is no RRT-style tax which would capture supernormal profits. This is however contained in the ANC’s Policy Document<sup>32</sup> and would trigger at the Treasury Long Bond Rate plus 7% (c.15%) with a reduction in royalty rates to 1%. Additionally there is much uncertainty in the treatment of deductions for capital expenditure and assessed losses

<sup>32</sup> ANC *Maximising the Developmental Impact of the People’s Mineral Assets: State Intervention in the Minerals Sector (SIMS)* Policy Discussion Document March 2012.

and application of the rules by the South African Revenue Services.<sup>33</sup>

**Ghana** is seeking to reintroduce a windfall tax on mining profits at 10% on positive tax adjusted cash balances. In 2013, the country introduced a National Fiscal Stabilisation Levy of 5% on company profits; this is a temporary levy to reduce the budget deficit.<sup>34</sup>

The **Cote d’Ivoire** sought recently to introduce a new mining windfall tax on gold profits – upwards of 19%.<sup>35</sup> This is now off the table but there is likely to be a revision in royalties and the country’s mining code generally.

**Angola** has in fact reduced its corporate tax rate for mining to 25% (from 35%) to encourage investment flows.

On 9 September 2011, **Guinea** adopted a new Mining Code. This included a new Extraction Tax of 3% on base metals and a Production Tax of 5% for gold and silver. The country did however reduce its CIT rate from 35% to 30%.

The **Western Australian** government is currently in consultation with stakeholders regarding its mining royalty system, which aims to achieve a 10% return on mine-head value.

<sup>33</sup> See KPMG South Africa *Mining companies seeking certainty on tax issues in the forthcoming 2013 Budget Speech* 27 February 2013. <http://www.kpmg.com/za/en/issuesandinsights/articlespublications/tax-and-legal-publications/pages/tax-issues-in-the-2013-budget-speech.aspx> [22.12.2013].

<sup>34</sup> It does not appear this applicable to mining companies except for mining support service companies.

<sup>35</sup> *Ivory Coast plans 19 pct windfall tax on gold miners’ profits* Reuters 14 September 2012.

**Canada** has, in recent years, attempted to improve the tax neutrality between its mining and non-mining sectors. This includes the elimination of the Mineral Exploration Tax Credit by 2015 at the federal level; phasing out of accelerated depreciation for new mine assets and a re-classification of pre-production development assets from exploration costs to development (30% p.a. declining balance). Canada presents the most complicated case study in terms of a mining tax regime, not least the variation at provincial levels. **Quebec** announced a change to its mining tax regime in May 2013 with a minimum mining tax on output value and a progressive mining tax on profit.

**Kazakhstan**, together with Mongolia, is perhaps the most significant in terms of change in 2009 with the introduction of a new mineral extraction tax based on world pricing values (e.g. copper 5.7%) and a progressive excess profit tax ranging from 0% to 60%; the latter commences when net income exceeds 25% of deductions (including capital items). That said the CIT rate remains relatively low in Kazakhstan.

The above are a sample of major changes. They serve to demonstrate this state of flux and instability in land-based mining regimes.

### *Fiscal stability agreements*

While countries like **Chile** and **Peru** have adopted relatively recent additional profit style royalties, it would appear that most mining ventures in these countries still operate under fiscal stabilization agreements and thus not subject to the new regimes.

Such agreements have often led to public perceptions, particularly during commodity price booms, that a fair share of rents is not being received by a country.<sup>36</sup>

### *Commercial principles*

While both the LOSC and IA 1994 make provision for a number of policy objectives and financial principles, it is important to highlight that the “[d]evelopment of the resources of the Area shall take place in accordance with *sound commercial principles*”.<sup>37</sup>

Consequently, in developing financial terms for DSM exploitation activities, these should be both supportive of the commercial nature of DSM development. That said, the issue of capturing profits / rents in pursuit of social justice needs to be highlighted. There is a developing societal expectancy, that beyond normal commercial rates of return, any “supernormal” profits should be shared with a resource owner. However, this needs to be seen in the context of a fair and equitable system.

Discussion will be made later, however, about the merits of a “safety valve” to capture or kick-in during periods of high commodity prices.

<sup>36</sup> Guj P, Bocoum B, Limerick J, Meaton M & Maybee B *How to Improve Mining Tax Administration and Collection Frameworks: A Sourcebook* World Bank, April 2013 at xii.

<sup>37</sup> IA 1994, Annex, Section 6, Production Policy.

### *The IMF & World Bank*

Both the World Bank and IMF have been active in the EI sector, particularly in the field of the taxation of natural resources. IMF activity has increased significantly since the start of the Topical Trust Fund on Managing Natural Resource Wealth in 2010.<sup>38</sup>

### *The non-renewable nature of mineral resources*

Opinion is divided on whether a premium should be attached to the non-renewable nature of mineral resources. Some consider this premium or value to be negligible;<sup>39</sup> while others consider that a “depletion premium” should be reflected.<sup>40</sup> This is currently a theoretical debate and is not of particular significance for this exercise but simply raises the issue that market pricing does not reflect such a value, neither does it necessarily reflect environmental impacts.

### *Concluding remarks*

Is there an optimal tax rate? No person has yet determined the appropriate (optimal) level of taxation for the mining sector.<sup>41</sup> Indeed economists appear to have avoided an answer to this

question and focused on attempting to achieve “progressivity” and “tax neutrality”.

Governments and business however, tend to focus more on tax rates, revenues generated, profitability rather than this economically pure notion of tax neutrality. For example the IMF and World Bank advocate a progressive system – it’s not perfect, but it is a start. Precept 3 of *The Natural Resource Charter* states that “[w]ell-designed fiscal regimes should allow the government to share in profitability and to have some minimum revenue stream in all production periods”.

Mechanisms to achieve optimal revenues have been bolted on to existing structures – or undermined by complexity, overly generous incentives, fiscal stability arrangements (bargaining power and negotiations) to encourage investment and naturally uncertainty over future metal pricing and production costs. In a DSM environment this is compounded by the fact that we know little about the economic behaviour of contractors under a DSM regime.

There ultimately needs to be a balance – and a longer term consideration. High, front ended taxes may raise short term revenues but over the longer term will likely discourage investment. That leads, at least in theory, to a lower tax base. There may be unique characteristics associated with DSM and access to / supply of strategic minerals which counters that theory.

There is, albeit small beginnings, a shift occurring in fiscal models with a move from distortionary taxation in the form of royalties toward a rent (profit)-based model. But this model is not of

<sup>38</sup> See <http://www.imf.org/external/np/exr/key/ttf.htm>.

<sup>39</sup> Otto J et al *Mining royalties: a global study of their impact on investors, government, and civil society* The World Bank (2006) at 29.

<sup>40</sup> Stevens et al *Conflict and Coexistence in the Extractive Industries* A Chatham House Report, November 2013 at 42.

<sup>41</sup> In the case of Mali, the IMF determined an optimal royalty rate of 3.5% and a profit tax of 35%. See Thomas S “Mining Taxation: An Application to Mali” IMF Working Paper, WP/10/126, May 2010.

universal appeal to the industry – and it does have many weaknesses as this WP will highlight.

In 2012, the Fiscal Affairs Department of the IMF issued a *Board Paper on the Taxation of Natural Resource Rents*<sup>42</sup> seeking input from stakeholders on a number of questions related to the taxation of extractive industries. These included the appropriate mix between royalty-based and rent-based models and their associated administration mechanisms. In this regard, Rio Tinto's submission concluded that there should be greater focus on taxes that are simpler to collect than on those considered "theoretically pure" such as rent resource taxes.

The IMF generally advocates a three-tier approach: a royalty (3-5%), a corporate income tax (c.30%) and a rent-based tax. As has been the case in its advice to developing countries, capacity-building in terms of administration and collection is preferable to putting in place a fiscal system that is suboptimal in terms of its effectiveness. In terms of capacity, an auctioning process would front end fiscal payments whereas a rent tax would back end fiscal payments but require greater technical input.

There will need to be trade-offs. In designing the optimal fiscal regime for the ISA there will be a degree of complexity in compliance and administration costs. There is also the trade-off between flexibility and certainty. The regime needs to allow for change and thus be flexible; however, certainty (and thus stability) is also an important feature. However, a stable regime also needs

to address changes in the DSM sector as the industry evolves through the investment and learning processes.

ISA TS11 has already presented an overview of possible options including an *economic rent* to capture surplus (windfall) revenues together royalties including a royalty as an environmental tax.

But one of that report's summary observations is that "...the current mining industry model may not be totally appropriate". There is perhaps need ultimately for some innovative, creative and lateral thinking here, including consideration of methodologies applied to the petroleum industry.

While there has been an upward trend in levies payable by the mining industry globally, the industry has also been subject to special and favourable tax treatment reflecting both its perceived higher risk, higher capital investment requirements compared to other industry sectors – and individual government policy positions with regard to attracting investment capital inflows and mining dependent GDPs. The current mining industry model has a shelf-life.

Ultimately, any tax policy should support the three pillars of sustainable development and in the case of the ISA, the CHM principle. Consequently, three objectives emerge under a 21<sup>st</sup> century tax policy:

1. The levying and collection of a regular tax across all sectors of an economy to promote economic growth and development;

2. A share in the rents earned through mineral extraction as compensation to the owner of the mineral resources; and
3. A policy which mitigates or compensates for any serious damage to the environmental base, particularly the loss of ecosystem services.

## *5. Policy objectives & financial principles*

**Objective:** This section of the WP aims to capture all the policy objectives and financial principles relevant to DSM financial terms.

The IA 1994 made fundamental changes to the provisions of the LOSC. As to financial terms, it created a number of guiding principles that need to be considered in the design of the financial mechanism and its underlying terms. That said, a number of policy objectives are retained in the LOSC and these are also detailed below.

The financial regime will need to be developed, assessed and ultimately defended against the underlying design criteria.

Aside from the policy and financial objectives discussed in the next section, there are also a number of broad principles that should be applied when designing a fiscal regime / policy. These are presented in the table below.

The following table identifies the general (best practice) principles in designing a fiscal regime. They both support and complement the objectives and principles contained in the LOSC and IA 1994.

1 Effectiveness	<ul style="list-style-type: none"> <li>• This is the capacity of the tax base to achieve its objectives – generate revenues and desired economic outcome.</li> </ul>
2 Equity	<ul style="list-style-type: none"> <li>• Equivalent treatment of taxpayers and fair allocation of the tax base.</li> </ul>
3 Efficiency	<ul style="list-style-type: none"> <li>• Neutral as to investment decisions. Greater risk borne by the party able to bear it.</li> </ul>
4 Simplicity, transparency and certainty	<ul style="list-style-type: none"> <li>• Lower administration and compliance costs. Certainty for business planning. The need to minimise avoidance of fiscal obligations. Transparency dictates the need for standard terms, disclosure of any non-standard application and non-discrimination.</li> </ul>
5 Coherence & consistency	<ul style="list-style-type: none"> <li>• Same commercial transactions should have same tax consequences. See this as key; fiscal treatment needs to follow commercial process.</li> </ul>
6 Flexibility	<ul style="list-style-type: none"> <li>• Adapts to change in market conditions.</li> </ul>
7 Enforceability	<ul style="list-style-type: none"> <li>• Easy to enforce.</li> </ul>



## Policy objectives and financial principles

The objectives and principles are of fundamental importance in both the direction of the fiscal regime project, its subsequent defence and monitoring to ensure objectives are met and principles adhered to.

The following table summarises the policy *objectives* contained in the LOSC<sup>43</sup>.

Policy Objective	Comment
<b>1. Optimum revenues from proceeds of commercial production</b> [LOSC Annex III, article 13(1)(a)].	<p>This sub-paragraph places a clear guiding objective on the ISA in developing and negotiating financial terms to ensure that revenues from commercial production are optimised. That is, any system must be effective and in a DSM perspective realise the CHM principle and objective. Optimum revenues are “best possible” revenues - a fair return as owner of the mineral resources.</p> <p>There must be a level of assured income to the ISA – at least over a longer term perspective given the levels of uncertainty over DSM and the nature of mining risk generally (high levels of capital investment, commodity price cycles, unique features of DSM etc.).</p>
<b>2. To attract investments and technology</b> [LOSC Annex III, article 13(1)(b)].	<p>Under this sub-paragraph any financial regime must seek to entice capital investment and technology to the development (exploration and exploitation) of the Area.</p> <p>Though no artificial advantage or disadvantage must be afforded to deep sea miners (see below), the ISA regime must remain “competitive”. Simply, a draconian regime will discourage investment; a soft regime will undermine the CHM principle and impact the optimum revenue object above. Financial capital is mobile;<sup>44</sup> States will continue to adjust their own terrestrial fiscal regimes to encourage inward investment. Consequently, the need for the ISA regime to operate on commercial</p>

<sup>43</sup> IA 1994 Annex Sec 8(2) removed application of LOSC, Annex III article 13(3)-(10) only.

<sup>44</sup> The allocation of investment capital within (large miners) and access to capital in the markets (small miners) is considered the No. 1 risk for the mining industry. See EY *Business risks facing mining and metals 2013-2014* (2013).

**3. Equal treatment and comparable financial obligations for contractors** [LOSC Annex III, article 13(1)(c)].

terms and principles is fundamental.

This may prove challenging where a number of different contractor entities are engaged in the DSM process with potentially differing financial objectives, goals and desired financial returns. However, the principle is an important one under the general principle of equity.

**4. Incentives to undertake JVs with Enterprise and developing States / stimulate technology transfer & training** [LOSC Annex III, article 13(1)(d)].

This can be given due consideration under the *Incentives section* of this Working Paper. The sub-paragraph also advocates that the incentives are provided on a “uniform and non-discriminatory” basis.

**5. Enable the Enterprise to engage in DSM effectively at the same time** [LOSC Annex III, article 13(1)(e)]

This Working Paper has not considered the specific aspects applying to the Enterprise but clearly the financial terms should not prejudice the operation of the Enterprise nor assumingly create an artificial advantage for the Enterprise and its JV contractors.

**6. Financial incentives not to subsidise contractors leading to artificial competitive advantage** [LOSC Annex III, article 13(1)(f)].

Annex III Article 13(14) permits the ISA (adopting RRP) to provide incentives to contractors on a “uniform and non-discriminatory basis” – based on recommendations of the LTC. Uniform does not necessarily mean that new contracts should be exactly the same as old ones; any incentives should reflect current conditions, including prevailing economic conditions and contemporary best practice.

This objective also applies to any revision in a contract.<sup>45</sup> That is, any revision may be by way of an incentive(s) and clearly this should not lead to an artificial competitive advantage.

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<sup>45</sup> Annex III, Article 19 states that “when circumstances have arisen or are likely to arise which, in the opinion of either party, would render the contract inequitable or make it impracticable or impossible to achieve the objectives set out in the contract or in Part XI, the parties shall enter into negotiations to revise the contract accordingly”.

The following table summarises the general financial *principles* contained within the 1994 IA which are to be applied in developing financial terms. These provisions do not contain much in the way of substantive content. However, they do provide a degree of flexibility in their interpretation and implementation, as was intended during the ad-hoc discussions relating to the IA 1994.

Policy Objective	Comment
<p><b>1. Fair system</b> [IA 1994, Annex, Sec 8(1)(a)].</p>	<p>This sub-paragraph determines that the system of payments is to be fair both to the ISA and the contractor; additionally, the system needs to provide an “adequate means” to determine compliance by a contractor.</p> <p>What is to be considered as “fair” is highly subjective and open to much debate.</p> <p>However, in the context of terrestrial mining, it is generally accepted that a <b>progressive system</b> is fairer: that is, the financial tale should increase with profitability. In the early years, a fiscal system should have a low financial impact allowing recovery of the investment.</p> <p><b>Flexibility</b> (that the system should be flexible to accommodate economic cycles and extract rents during peak commodity pricing) together with <b>certainty / predictability</b><sup>46</sup> and <b>stability</b> would also seem appropriate qualities inherent in a fair system.</p>
<p><b>2. The rates of payment are to be “within the range” of prevailing rates of “same or similar” minerals</b> [IA 1994, Annex, Sec 8(1)(b)].</p>	<p>The main objective of this sub-paragraph is to ensure that “deep seabed miners” are neither subject to a competitive advantage nor disadvantage. In the majority of cases, comparative rates are available for the main minerals due to be mined in the Area, save for rare earth elements.</p> <p>This sub-paragraph grants a relatively broad interpretation as regards the absolute range of rates applicable to land-based mining. This is fortunate. While say in the case of royalties, headline rates may appear identical (a range of 3-5% ad valorem royalty is typical) these rates are applied to different bases: e.g. metal market</p>

<sup>46</sup> There clearly need to be certainty for an investor. Equally, from an ISA perspective, there needs to be some degree of predictability of revenue flows.

values, gross sales, net sales, net smelter return etc). Therefore, the actual rate of payment will vary.

Furthermore, does the phrase *rates of payment* apply to all tax / fiscal related payments? Does it for example include excise duties and / or withholding taxes? Equally, given the reference to payment, some mining entities will be subject to tax stability agreements which will in fact reduce tax payments due. Does this need to be accounted for?

A practical approach needs to be taken with this. There are additional taxes that may / will be due to be paid by Contractors to States – importing / exporting duties, Sponsoring State levies / taxes, home tax States etc. In determining an overall return on investment, Contractors will need to factor in such amounts due.

However, the wording of the following sub-paragraph in suggesting that consideration be given to “a royalty or royalty and profit share system” suggests a focus on royalty rates and profit-related taxes. This WP has accordingly focused initially on these items in assessing the range of rates of payment.

In addition, should any weighting, in determining a range of payments, be attached to their calculation? That is, should there be a reference and weighted (by country GDP or mine production values) basket of royalty / profit tax-related payments? This may produce first a fairer result and secondly provide a mechanism for flexibility and responsiveness of the system to change.

3. The payment system should:
- a. “not be complicated”;
  - b. “no major administration costs”;
  - c. be a royalty or royalty / profit-share system combination;
  - d. if an alternative system, contractors right to chose

[IA 1994, Annex, Sec 8(1)(c)].

**Commencement: there is no reference to a commencement date for payments under the financial system. However, sub-paragraph (d) states that the annual fee is payment from commencement of *commercial production*. Any royalty obligation is also likely to trigger from that date in accordance with general practice; any profit-mechanism will be dependent on the timing of profits (unlikely for several years).**

Not be complicated / no major administration costs: This has often been translated as “simplistic”. However, against the backdrop of fiscal regimes, which are by their

nature complicated, albeit to varying degrees, to overly focus on these criteria could distort the ultimate objective of maximising revenues for the ISA. A simple(r) system (e.g. superficially a royalty-based system) may not adequately capture optimal rents for the ISA / CHM. A more complex system may be warranted.

Complexity is a relative notion in time and space. What at first appears complex on introduction becomes less complex, better understood and more efficiently administered as time elapses. Stakeholders adapt. What may appear complicated at the outset will, after the passage of time, become the norm. This is not, however, to discount the significance of administration burdens.

Accounting systems and packages are now highly sophisticated and capable of responding to change. Accounting standards and practices internationally are trending toward greater harmonization. This can support, at least from a Contractor perspective a more sophisticated approach to an ISA fiscal regime.

However, the ISA is starting from a zero-base as regards collecting mechanisms, their administration and compliance. The capacity (and appetite) of the ISA to administer more complex systems (including profit-sharing ones) needs to be assessed.

Finally, alternative systems may be considered. However, this potentially undermines the desire for simplicity and no major administration costs and should be avoided. There should, ideally be one system for all contractors.

**4. Annual fixed fee from date of commercial production – credit against payments due** [IA 1994, Annex, Sec 8(1)(d)].

Set at US\$1 million? What is this now? What is the purpose of this fee? How can it be rationalised?

**5. Periodic review – may change in circumstances. Non-discriminatory / contractors election** [IA 1994, Annex, Sec 8(1)(e)].

What is contemplated in this sub-paragraph by “changing circumstances”? And how often should that review be undertaken? Every 5 years? Perhaps in the early years of DSM this should be more frequent as “uncertainties” become “certainties” following a period of test mining.

It is important to observe that this sub-paragraph applies strictly to the *system* of

**6. Dispute mechanism** [IA 1994, Annex, Sec 8(1)(f)]. **See also LOSC Annex III article 15 – binding commercial arbitration**].

payments rather than the *rates* of payments per se.

The ISA will need to draft an internal code and process in terms of how any disputes are initially handled and processed. The need for detailed RRP is paramount in this regard. Any ambiguity or uncertainty will lead to disputes. Many tax authorities around the world are inspecting closely mining expenditures, particularly what constitutes “exploration costs” which are generally deducted immediately in calculating taxable profits.

For completeness, there are other provisions within the LOSC which are relevant to the financial terms discussion. These are highlighted in the table below.

Other financial principles / matters	Comment
<b>1. Use of Generally Recognized Accounting Principles and the financial RRP of the ISA</b> [LOSC, Annex III article 13(11)].	<p>A standard accounting code (chart of accounts) should be developed by the ISA. Its complexity will be driven by the system of payments adopted.</p> <p>Contractors are already obliged under the PN Exploration Regulations to maintain proper books and accounts.<sup>47</sup></p> <p>Furthermore, Contractors are obliged to submit (annually) an audited statement of “<b>actual and direct</b> exploration expenditures of the Contractor in carrying out the programme of activities...<i>Such expenditures may be claimed by the contractor as part of the contractor’s development costs</i> incurred prior to the commencement of commercial production”.<sup>48</sup></p>

<sup>47</sup> Annex IV, Section 9: “The Contractor shall keep a complete and proper set of books, accounts and financial records, consistent with internationally accepted accounting principles. Such books, accounts and financial records shall include information which will fully disclose the actual and direct expenditures for exploration and such other information as will facilitate an effective audit of such expenditures”.

<sup>48</sup> Annex IV, Section 10.2(c). A similar provision is provided in respect of prospecting expenditures: see Regulation 6(1).

Additionally, in 2009, the LTC issued some guidance in connection with the financial reporting obligations of Contractors relating to exploration expenditure in particular, not least in determining “actual and direct exploration activities”.<sup>49</sup> Specifically:

- Contractors are recommended to adopt IFRS accounting standards;
- Exploration costs must be those falling under the list of activities defining exploration in the PN Exploration Regulations (Regulation 1(3)(b));
- Direct expenditure: incurred directly in connection with the exploration work that has been undertaken in accordance with the programme of work in the contract;
- Actual expenditure = reported expenditure – actually incurred, not notional, estimated or projected;
- A list of recommended expenditure categories broken down into operational expenditure, capital expenditure, staffing & personnel costs and overhead costs.

In 2013, concern was expressed by the LTC that there was only partial compliance with the detailed financial reporting requirements.<sup>50</sup> Clearly, if a payment mechanism is adopted which reflects and incorporates the specific treatment / claim for exploration expenditure, it is in the interests of Contractors to adhere to this requirement / recommendation which reflects best practice.

**2. Payments in freely convertible currencies or at contractor’s option, the “equivalents of processed metals at market value” [LOSC, Annex III article 13(12)].**

A preference here would be for a single reporting / payment currency, say US dollars.

As to payments in kind and processed metals, again ease of administration would dictate a currency payment as the preferred option. There would be additional administrative burdens and costs on the ISA to accept processed metals which would require handling via an agent. An identical issue arises in connection with the implementation of Article 82 LOSC.<sup>51</sup>

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<sup>49</sup> ISA Recommendations for the guidance of contractors for the reporting of actual and direct exploration expenditures as required by annex 4, section 10, of the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area ISBA/15/LTC/7, 25 May 2009.

<sup>50</sup> ISBA/19/LTC/15.

<sup>51</sup> See ISA Implementation of Article 82 of the United Nations Convention on the Law of the Sea ISA Technical Study: No. 12, 2013.

- 3. All financial obligations of the Contractor to be expressed in “constant terms relative to a base year”.** [LOSC, Annex III article 13(13)]
- Is this obligation still relevant? Appears to suggest inflationary adjustments? Needs investigating.
- 4. Penalties: contractor’s rights may be suspended / terminated where following warnings there are “serious, persistent and wilful violations of the fundamental terms of the contract [etc.]”. In other cases or in lieu of suspension / termination, monetary penalties may be imposed – proportionate to the seriousness of the violation** [LOSC, Annex III article 13(18)].
- This article also notes the benefit afforded to the Contractor of judicial remedies (Part XI Section 5) before the ISA executes a decision.
- Financial obligations to the ISA should be seen as “fundamental terms”.
- Note should be taken of the Contractor’s rights here as a penalty regime will require formulating for failure to pay monies due to the ISA / failure to make returns timeously together with environmental penalties, where levied.



### **Observations**

There competing objectives and a broad range of financial principles highlighted above that are to direct the design and subsequent implementation and operation of the financial terms regulations anticipated by the LOSC and the Agreement .

One of the main areas is the trade-off between administration and economic efficiency. A more complex system may very well deliver optimal revenues in the longer term; but that will require investment in administrative capacity building.

At this initial stage however, and subject to the requirements of the Stakeholder Survey / Questionnaire, two fundamental objectives / deliverables are present. First, a payment mechanism or system (royalties or royalty & profit-share combination – or an alternative system). Secondly, determining the *rates of payments*. The latter will be determined through a comparative analysis – though detailed financial modelling will be required.

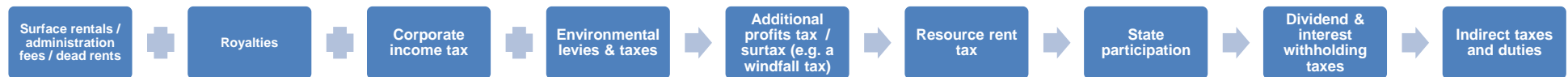
In considering the design of the system of payments, the following (flowing from the above discussion of objectives and principles) are considered the main features / criteria against which to assess initially an appropriate mechanism:

1. **Its ability to generate optimal revenue levels (a fair return) for the CHM as owner of the resources; equally a financial regime should ensure that any DSM development which is economically sound before applying financial terms, remains so after their application;**
2. **Its equivalent treatment of contractors;**
3. **Its simplicity – administration – enforcement / compliance – transparency;**
4. **Its flexibility & responsiveness to change;**
5. **Its stability for investors & predictability for the ISA / CHM.**

## ***6. A primer on mining taxation***

*This section provides LTC Members a broad overview of typical mining fiscal regimes across the globe and its constituent elements.*

Though fiscal mining regimes do vary across jurisdictions and by mineral types,<sup>52</sup> most countries adopt a combination of the following fiscal and revenue instruments:



This section provides an overview of the above elements.

Note: some of the above categories are not treated as mining taxes per se, for example mining royalties levied on price or sales. Mining royalties that are levied on net revenues or profits are not necessarily mining royalties and may be treated as a tax charge. This can lead to different approaches and treatments.

<sup>52</sup> This is more noticeable for gold which is sometimes subjected to a different fiscal regime.

### ➤ **Surface rentals / administration fees / dead rents**

Many countries levy charges to recover administration costs.<sup>53</sup> These may be fixed annual fees, fixed amount per hectare, dead rents in addition to other fees. TS No. 11 lists the many types of fees levied.<sup>54</sup> Typically, fees are levied at the rate of a few US\$ per hectare. These fees are typically deductible for CIT / RRT purposes.

**India** for example, charges dead rents at progressive rates; INR 200 (US\$ 3.19) per hectare from the 2<sup>nd</sup> year of a lease, INR 500 (US\$ 7.98) 3<sup>rd</sup> & 4<sup>th</sup> years and INR 1000 (US\$ 15.95) from the 5<sup>th</sup> year onwards. These rates are x2, x3 and x4 for **medium value** minerals, **high value** and precious metals and stones respectively.

This WP has not considered this category of payments. However, their consideration may be of interest, not least in terms of dead rents where production is unduly delayed and / or in determining an annual fee under the Agreement.

### ➤ **Mineral royalties**

Mining or mineral royalties (production charges) are levied on / by:

- Volume (specific \$ amount per tonne for bulk, typically lower value commodities (e.g. coal and iron ore).
- *Ad valorem*, being a percentage (fixed or variable) based on "production value".

<sup>53</sup> See TS No. 11 at 30-33.

<sup>54</sup> TS No. 11 at 32.

- Profit-based on a percentage of net income or profit measure (more akin to a mining tax than a royalty).

Volume and ad valorem royalties are administratively simpler to calculate. However, they are often challenged as having a distorting effect on production costs leading to, for example, high-grading – they raise the marginal cost of extraction. They can be regressive. Royalties are in effect a "tax" on production rather than profit.

Royalty rates vary between 1% and 18% depending on the type of royalty and the type of mineral, the higher rate being applied to profit based royalties.

In the case of ad valorem royalties, the valuation point and basis needs to be clearly defined and capable of audit.<sup>55</sup>

A number of studies indicate that an ad valorem royalty in excess of 5% will act as both a disincentive and impact marginal mining operations. Consequently, some regimes apply a sliding scale which is also linked to profitability.

Ad valorem royalties for example are generally levied on an output value. Under various mining regimes this may be applied to "gross sales", "gross value", "net sales", "mine head value", "average

<sup>55</sup> This working paper only considers ad valorem and profit-type royalties. Unit or volume-based royalties are typically applied to lower value bulk commodities. In the case of DSM minerals, these are higher value commodities normally subject to ad valorem royalties.

metal prices” etc. Consequently, while a headline rate may look similar, the calculation base can be materially different.

This calculation base varies significantly and there appears to be no international standard. Variations in valuing ad valorem royalties are as follows:

1. The value of the metal contained in the ore at the mine mouth or mine gate;
2. The value of the metal at the first point of sale as a concentrate;
3. The value of the metal recovered;
4. On gross company revenues;
5. On gross company revenues less allowable costs generally transport, insurance and handling; and
6. A net smelter return, adjusted for smelting and refining and other related costs.

Royalty regulations may provide for the deduction of costs (e.g. transport, insurance and packaging) from say a gross sales value. This is often referred to as a **net-back approach**. It can however be difficult to administer in calculating and auditing. Often it may be simply to levy a lower headline royalty on a gross rather than net-back value.

That said, with many mining multinationals, arms-length market value sales may be difficult to determine. Often countries use

benchmark prices referenced to international metal prices to determine a value. The aim generally is to levy a royalty on a first arms-length market-related sale.

As noted above, profit-based royalties may be applied to a net profit (being realised sales less allowable capital and operating cost deductions) or according to calculated operating ratio. Exceptionally, progressive ad valorem royalties are linked to international pricing.

Profit-based royalties are more complex to administer, but they are generally more progressive and economically efficient depending on the nature of allowable deductions (capital expenditure recovery, overhead costs, operating expenditure, financing costs, restoration costs etc). These have on the whole been successfully applied in jurisdictions such as Australia, Canada and the United States. They are supported by detailed regulations and guidelines together with the administrative capacity to handle complexities.

The application of a royalty is seen as good practice (from a country perspective). From the public viewpoint it justifies the extraction of the resource, gives stability to a fiscal regime and broadens the tax base.<sup>56</sup>

Where there is a CIT and / or RRT-related mechanism, there is arguably no place for profit-related royalties and this adds a further

<sup>56</sup> E.g. EM Sunley, J Gottschalk & A Watson, International Monetary Fund, Fiscal Affairs Department *Mongolia: The Fiscal Regime for Mining – A Way Forward* 22 June 2010.

level of complexity. However, best practice dictates there is a minimum “traditional” royalty obligation in place; this provides the assurance of a minimum revenue flow.

Given that most regimes provide an income tax deduction for royalties paid, this effectively reduces the net amount payable to a State. A royalty payable of say one dollar will reduce corporate tax payable by 30 cents in a jurisdiction with a 30% corporate income tax rate.

While there has been an upward trend in levies payable by the mining industry globally, the industry has also been subject to special and favourable tax treatment reflecting both its higher risk, higher capital investment requirements compared to other industry sectors – and individual government policy positions with regard to attracting investment capital inflows and mining dependent GDPs.

### ➤ **Income taxes**

All countries levy a business income tax on companies (CIT) and other business enterprises. Typical features and characteristics are:

- Generally levied at one rate in the range of 25-35% globally. CIT rates have fallen since the 1980s. At that time, rates were typically 40-50% in the mining sector. Exceptionally, mining regimes are subject to higher rates of CIT and some States operate a variable income tax where the rate increases in line with a ratio of assessable income to revenue.<sup>57</sup>

<sup>57</sup> E.g. Botswana, South Africa (gold) and Zambia.

Aside from the headline rate, investors will also be concerned about the calculation of the taxable base to be assessed as this affects the timing of tax payments and thus cash flows.

### *The tax base*

- CIT is based on adjusted accounting profits or taxable income, being revenue less allowable tax deductions. The calculation of a taxable base is a material consideration. It is subject to detailed rules and open to tax planning schemes (tax avoidance):
- **Allowable costs (revenue / operating expenses):** again most regimes will allow for the deduction of revenue-producing expenses including operating costs, financing costs (subject to limits), salaries etc. That is, those wholly and exclusively incurred to produce income. Many multinational companies recharge service and management fees to their subsidiary companies offshore. These may be allowed provided they are at an arms-length;
- **Allowable costs (capital items):** for such a capital intensive industry, the mining and petroleum sectors are subject to special rules regarding the deduction of feasibility costs, pre-production exploration costs, development costs & assets, production costs and post-production (rehabilitation / closure) costs. In many business sectors, such costs would be treated as capital assets and depreciated or amortised for tax purposes over the life of a project or economic life of an asset. In the mining sector, special depreciation is frequently permitted to

recognise investment risk – and also to encourage inward capital investment.<sup>58</sup> This does however vary by country.

- Pre-production expenses (including exploration costs): typically expensed for tax purposes either as incurred or at the point of production;
- Tax depreciation<sup>59</sup> (or tax allowances) is generally granted for capital assets used to generate revenue. Tax depreciation rates attempt (as for accounting depreciation) to reflect the useful economic life of an asset. For example, for capital expenditures incurred during development and production, less generous treatment is given and is more reflective of the life of an asset (or mine) e.g. depreciation over a 3-5 year period. In some instances this is up to 10 years (10% per year);
- Enhancement: a few regimes provide for enhanced or uplifted expenses. This can be either by way of a tax credit (e.g. some Canadian investment credits); a percentage uplift on exploration costs deducted (e.g. Argentina) or an interest factor adjustment.

**The treatment of pre-production, exploration and development costs is a major consideration for the ISA where a profit mechanism is adopted. Their treatment will impact the timing of revenue flows on profit to the CHM.**

<sup>58</sup> That said, some mining investments are akin to “R&D” activities and many countries provide tax incentives for R&D activities.

<sup>59</sup> Other terms used: Tax allowances, capital recovery, capital allowances.

- **Ring fencing:** this prevents a mining enterprise from combining the profit and losses on all its mines to calculate its net taxable base. Ring fencing protects that tax base. Ring fencing is adopted by many but not all countries. It is, however, trending toward being the norm and not the exception, not least in developing States where best practice recommends ring fencing rules. It is also a feature of petroleum regimes. The absence of ring-fencing can, at least in theory, encourage further mineral exploration as costs can be offset against other mining projects.

**The absence of any ring-fencing provisions can both postpone and eliminate future profits and may also be discriminatory to newer investors. Best practice dictates its inclusion in a fiscal regime.**

- **Apportionment:** some costs may need to be apportioned between different projects where, for example, plant and machinery is shared or there is a central administration / finance function. Costs need to be apportioned on a reasonable basis using ideally an OECD methodology (see transfer pricing). This may also be true for exploration costs. This begs the question as to **how can exploration costs be apportioned to specific mining projects?**

- **Tax adjustments:** the vast majority of countries now adopt a self-assessment mechanism for the filing and payment of tax obligations. Adjustments can and do arise either through taxpayer self-declaration or on a subsequent audit.

Most tax regimes or codes will have specific anti-avoidance provisions. Avoiding tax is not illegal *per se*. The aim of any such anti-avoidance mechanisms is to provide tax authorities with legal powers to investigate and where necessary adjust taxpayer profits or reduce tax losses.

Tax planning schemes are very common in multinational enterprises and groups. A particular focus currently is “profit shifting” whereby groups of companies can say maximise expense (including interest) deductions (or reduce sales revenue) in a higher tax country and “shift” this profit to a lower tax country. In effect, the profit becomes segregated from the activities that generate it. This is the area of **transfer pricing**.

This typically refers to non-commercial / non-arm’s length intercompany prices for goods and services (so-called “transfer pricing”) and to excessive interest deductions for inter-company financing (so-called “thin capitalisation” – see below). Profit shifting is a major area of current study.<sup>60</sup>

- **Interest deductibility:** interest on debt is usually deductible. However, this could potentially allow for projects to be financed entirely by debt and at excessive rates of interest on a loan from another (generally offshore) company. To prevent this excessive deduction, countries normally provide for a “safe-harbour” ratio to limit interest deduction; typically a debt:equity ratio of 1.5:1.0 to 3.0:1.0. Above this, companies will be deemed as “thinly capitalised” and interest payments over this amount will be denied a deduction for tax purposes. Additionally, interest must generally be at a market-related rate; excessive amounts may be treated as a distribution and subject to withholding taxes.

Other areas, though not strictly part of anti-avoidance regulations relate to the nature of expenses deducted by taxpayers in their tax returns. For example, taxpayers may attempt to deduct expenses which are capital rather revenue in nature. The rules may not be clear. Revenue expenses are normally deducted against income; however, capital expenses (e.g. for plant & machinery) are not deducted immediately but over a period of years. This situation is often, but not always, caused by the poor drafting of tax regulations – which leaves a position ambiguous and open to interpretation. However, where administrative capacity is also poor, this can result in a loss of tax revenue to a government where such errors are not picked up.

<sup>60</sup> See OECD *Action Plan on Base Erosion and Profit Shifting*, OECD Publishing (2013). Available at <http://dx.doi.org/10.1787/9789264202719-en> (17.12.2013).



- **Decommissioning / rehabilitation funds:** a provision made in a company's accounts to reflect closure and environmental rehabilitation costs may not be an allowable cost until the amount has been incurred (spent). A number of regimes provide for the setting-up of a trust fund or payment of cash contributions to a special account (escrow). In such instances, the payments will generally be allowed as a deduction.
- **Tax losses:** some regimes (Australia, South Africa, Brazil) allow for the indefinite carry forward of tax losses. However, it is common place that such carry forwards are restricted on a time basis – 5 years is short, 8-10 years typical and 20 years is at the high end. Regimes also provide for loss carry backs in certain instances of up to 3 years; this is often important at the end of a mine's life where no income is available but operating and decommissioning costs are incurred.
- **Capital gains:** gains made on the sale of assets may be included in taxable income – or alternatively, subject to a separate tax rate and different treatment. Countries will for example tax the gain on the sale of any mining interest. As to items such as plant & machinery, any gains (or proceeds) are generally recaptured where tax allowances have previously been claimed.
- **Hedging:** the treatment of hedging gains and losses varies and complex rules abound. Generally gains are included in taxable income and losses often restricted.

#### ➤ **Additional and progressive profit taxes**

Governments may levy an alternative income-style tax or apply an additional or progressive tax. Progressive profit taxes apply a higher rate of tax to higher levels of profit. Some regimes use profitability ratios (operating margins) as the trigger point, above which profits are subject to tax. Such additional taxes have been introduced in Chile, Peru and Uruguay.

Additional profit taxes are often referred to as "windfall taxes" in the mining sector as they are attempting to capture windfall profits during a high commodity price cycle.

#### ➤ **Resource Rent Tax (RRT)**

CIT and RRTs have some similar features such as the tax base. However, their point of departure is the CIT base is an accounting one; the RRT base is one of cash flows (at least in theory). Consequently, RRT regimes generally allow for the full expensing of capital expenditures, whereas CIT regimes amortise or depreciate such amounts. Under CIT, financing costs (interest) are generally deductible but under a RRT this is replaced by an interest return uplift which reflects equity and debt costs. Royalties under a CIT are a tax deductible expense; under the RRT they are often credited against a RRT liability – on the basis that they are "mining taxes" so should be deducted to avoid any double taxation; often, in this scenario royalties are the "minimum mining tax".

A RRT aims to capture a portion of rent over and above an investor's cost of capital (normal profit). It is based on net cash flows; as soon as cumulative net cash flows are positive, a specified tax rate is applied. It is considered, at least in theory, that a RRT is neutral to decision-making – at least compared to income and production-related taxes. It is felt though, that a RRT can distort exploration judgements. In the opinion of one writer, "[t]he RRT is a high-risk measure for a government looking for a return on mineral ownership. Although the revenue could be sizeable in favourable circumstances, there is also a possibility that mineral development will yield little revenue...it cannot be relied upon as a major fiscal instrument".<sup>61</sup>

RRTs face particular challenges in the mining sector and these are compounded in a DSM environment where significant uncertainty prevails. There may be very long payback periods accompanied by periods of price volatility. RRTs are in effect, a fiscal holiday until all expenditure and uplift (return rate) are recovered.

However, a RRT instrument is, at least in theory economically efficient and has been successfully deployed in the oil and gas industry – though relative price stability has assisted this.

Both a government and investor share in the risk in a RRT scenario. Revenues under this model are unpredictable but reflect an opportunity to participate in above normal profits.

<sup>61</sup> JVM Sarma and G Naresh "Mineral Taxation around the World: Trends and Issues" *Asia Pacific Tax Bulletin* January 2001 2-10 at 7.

RRTs are discussed in greater detail in Section 10. Suffice it to say at this point that RRTs are relatively new to the mining sector and consequently there is very little experience in their long term impacts and return to government.

### ➤ **State participation**

State participation (in terms of an equity stake) is not considered in this WP. It is however part of the resource nationalisation debate and a number of countries have and are proposing increased holdings in mining ventures e.g. Zambia.

### ➤ **Withholding taxes & double tax relief**

These are taxes levied on certain categories of income payable to a non-resident. They include dividends (profit distributions), interest and royalties. Rates vary and may be reduced under a bi-lateral tax treaty. They are generally of the order of 10-15% and higher.

There are numerous double tax agreements (DTAs) in place between all sovereign States in the world. Some countries have a more comprehensive treaty network than others. DTAs are intended to mitigate tax liabilities for persons so that they obtain tax relief (through a tax credit or reduced amount of tax) on the same source of income that may be subject to tax in two or more different countries. For example, DTAs often reduce the rates of withholding tax on dividends, interest and royalties.

Where a company incurs foreign taxes on overseas operations, there are generally two forms of tax relief in the company's home taxing country. This will depend on the specific tax code and also any DTA. Either the income is exempt or a credit is given for the overseas tax paid (up to the limit of the tax on that income in the home country). The UK and USA for example give this relief unilaterally to their residents.

Additionally, DTAs also promote information sharing between country tax authorities and generally provide a mechanism for dealing with tax adjustments. For example, on transfer pricing, a transfer pricing adjustment (say, increased profits) in one country will mean an adjustment (say, decreased profits) in another country.

Again, this WP has not considered WHTs as part of financial terms. While they do form part of taxes payable to States, they fundamentally impact the rates of return for investors as they are taxes on non-residents (thus impacting group of companies).

That said, the ISA needs to ensure through consultation that no WHTs are levied on payments by contractors to the ISA. This is covered further in Section 8.

#### ➤ **Tax stability arrangements**

Some regimes will provide for tax stability agreements. Effectively, these provide for a stable tax rate structure during the period of the agreement or mining project. They prevent, at least contractually,

any application of both additional or increased taxes and reduced rates of taxation, including royalties. They are a source of great controversy, not least where bargaining power has been in the hands of mining majors.

#### ➤ **Import, export and sales taxes**

In most jurisdictions, mining regimes are subject to favourable treatment as regards import duties, particularly on equipment. Some regimes exempt mining companies until production starts e.g. Liberia, Tanzania. Exports are normally exempt as well from duties but again there are exceptions e.g. Argentina, India. Some territories levy VAT or sales taxes but this is more of a cash flow timing issue than an absolute cost.

Again, these taxes are not considered in this WP. That said, this is an unknown area currently and some States may levy import duties & export duties where DSM activities are undertaken in areas beyond national jurisdiction but ores imported / exported through State ports.

#### ➤ **Tax returns & payment**

Many tax regimes now require taxpayers to file their tax returns online and within a certain timeframe following the end of a tax year. In respect of CITs, provisional tax payments made be required to be made during the tax year, with a balancing amount payable on submission of the tax return.

As to the timing of royalty returns and payments, these vary widely but are generally on a monthly, quarterly six-monthly basis.

➤ **Fines & penalties**

Tax regimes will incorporate penalty & fine mechanisms for failure to submit a return timeously, failure to make payment on time and subsequently for any adjustments made to a tax return following say a tax audit.

Fines & penalties will include a mixture of fixed-fee fines, interest at a prescribed rate and penalties calculated as a percentage of the tax due. The latter can be draconian particularly where there has been a serious error included in a tax return.

➤ **Remarks**

It is fair to say, that income tax systems, generate the lion's share of mining tax revenues, followed by mineral royalty systems.

The main challenge in any comparative analysis is simply this. Any comparison is not comparing "apples with apples". All member States are at different stages of economic development and their ability to raise revenue will also be affected by the mix of commodities mined and associated rates.

Nevertheless, there is a trend toward three major fiscal instruments, namely royalties (ad valorem in the case of base and precious metals), a CIT and additional profit taxes, including RRT-style taxes.

## *7. Mining phases - typical accounting & fiscal treatments*

## DSM phases - Typical Accounting & Fiscal Treatments

The purpose of this section is to present an overview of the different phases of the DSM process, the general nature of activities to be conducted, high level financial characteristics, associated typical accounting & fiscal treatment.

						
Activities / Characteristics / Treatment	Mining phases: <i>Prospecting / exploration</i> <sup>62</sup>	<i>Evaluation / Transitional Pilot Mining</i> <sup>63</sup>	<i>DSM Development</i> <sup>64</sup>	<i>Early Commercial Production</i>	<i>Full-scale Commercial Production</i>	<i>Closure &amp; Site Re-habilitation</i>
<b>Activities</b>	<ul style="list-style-type: none"> <li>Searching, researching and analyzing data</li> <li>Geological, geochemical, geophysical studies</li> <li>Environmental baselines (PRZ / IRZ)</li> </ul>	<ul style="list-style-type: none"> <li>Technical feasibility</li> <li>Commercial viability</li> <li>Testing extraction methods</li> <li>Transport / infrastructure</li> <li>Environmental monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Commencing exploitation</li> <li>Preparation for commercial production: infrastructure commissioning &amp; advance preparation of seafloor mining area</li> <li>Environmental monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Collection / extraction &amp; initial processing of nodules</li> <li>Product in saleable form</li> <li>Commercial scale production</li> <li>Environmental monitoring</li> </ul>	<ul style="list-style-type: none"> <li>As above for previous but production at full / near full capacity of estimates / forecasts</li> </ul>	<ul style="list-style-type: none"> <li>Restoration / rehabilitation of mining site</li> <li>Closure costs: [removal of infrastructure, if any – mobile collector, mining ship / support vessels]</li> <li>Environmental restoration</li> </ul>

<sup>62</sup> The Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area separately define “prospecting” and “exploration”.

<sup>63</sup> Evaluation and pilot mining are not separately defined in the Regulations and are included in the definition of “exploration” (Reg 1(3)(b)).

<sup>64</sup> DSM development is not separately defined; included as part of “exploitation” definition being the “construction and operation of mining, processing and transportation systems, for the production and marketing of metals” (Reg 1(3)(a)).

Activities / Characteristics / Treatment	Mining phases: Prospecting / exploration	Evaluation / Transitional Pilot Mining	DSM Development	Early Commercial Production	Full-scale Commercial Production	Closure & Site Re-habilitation
<b>Characteristics</b>	<ul style="list-style-type: none"> <li>High risk</li> <li>High costs</li> <li>No revenue</li> </ul>	<ul style="list-style-type: none"> <li>High costs</li> <li>Small revenue from extracted ore</li> <li>Environmental guarantee</li> </ul>	<ul style="list-style-type: none"> <li>High capital expenditure investment</li> <li>Small revenue as testing continues</li> <li>Environmental guarantee / cash contribution</li> </ul>	<ul style="list-style-type: none"> <li>High operating costs</li> <li>Early revenues</li> <li>[Small reduction in losses]</li> <li>Long payback period starts</li> </ul>	<ul style="list-style-type: none"> <li>High revenue period</li> <li>[Lower operating costs]</li> <li>Economies of scale</li> <li>But equipment replacement</li> </ul>	<ul style="list-style-type: none"> <li>Minimal or no revenue</li> <li>Mid-high expenditure (obligation dependent)</li> <li>Contingent liabilities</li> </ul>
<b>Accounting Treatment</b>	<ul style="list-style-type: none"> <li>Varies between being capitalised (as an intangible asset) versus fully expensed<sup>65</sup></li> <li>Capitalised: depreciate when CP commences</li> </ul>	<ul style="list-style-type: none"> <li>As for Prospecting / exploration</li> <li>Likely capitalised as an asset</li> <li>Revenues generally deducted from asset cost</li> </ul>	<ul style="list-style-type: none"> <li>Capitalise mining equipment / investment. General &amp; overhead expensed</li> <li>Depreciate over life of mine / equipment useful life from CP</li> <li>Revenue during development phase offset against development costs rather than classified as income.</li> </ul>	<ul style="list-style-type: none"> <li>Revenue recognised (FOB versus CIF terms); asset depreciation commences as assets are made available for use (accumulated exploration and development costs amortised using units of production over expected total production of mine; other assets: expected useful life - straight line basis)</li> <li>Commencement of royalty payments</li> </ul>	<ul style="list-style-type: none"> <li>As for previous phase</li> <li>Impairment provisions</li> <li>Site rehabilitation / restoration provision - best estimate provision needs to be assessed – based on discounted &amp; expected future cash flow of expenditure. Cost is capitalised and depreciated over useful life</li> </ul>	<ul style="list-style-type: none"> <li>Additional costs expensed</li> <li>Contingent liabilities to be disclosed</li> </ul>

<sup>65</sup> See also IFRS 6 *Exploration for and Evaluation of Mineral Resources*.

Activities / Characteristics / Treatment	Mining phases: <i>Prospecting / exploration</i>	<i>Evaluation / Transitional Pilot Mining</i>	<i>DSM Development</i>	<i>Early Commercial Production</i>	<i>Full-scale Commercial Production</i>	<i>Closure &amp; Site Re-habilitation</i>
<b>Fiscal Treatment</b>	<ul style="list-style-type: none"> <li>No revenue to assess</li> <li>Immediate deduction for pre-production expenses – loss c/fwd (add to pool of exploration costs)<sup>66</sup> or</li> <li>Capitalise – 100% deduction at commercial production or amortise over time</li> </ul>	<ul style="list-style-type: none"> <li>Capitalise test mining equipment (plant &amp; machinery) future tax depreciation at prescribed rate (useful life)</li> </ul>	<ul style="list-style-type: none"> <li>Generally follows accounting treatment but some States allow for full write-off of development costs</li> </ul>	<ul style="list-style-type: none"> <li>Corporate income tax on net profits</li> <li>Additional taxes &amp; duties</li> </ul>	<ul style="list-style-type: none"> <li>Additional profit taxes – rent resource taxes may kick in on “supernormal” profits / rents</li> </ul>	<ul style="list-style-type: none"> <li>Possible terminal losses – c/back? Or set-off against other mining projects / areas</li> </ul>
<b>Examples of tax depreciation rules</b>	<ul style="list-style-type: none"> <li>Argentina – 200%</li> <li>Australia: 100% exploration; DB for capex</li> <li>Brazil: 100% exploration; 10 years SL for machinery and equipment;</li> <li>Canada (BC): 100% pre-production &amp; exploration</li> <li>China: 100% exploration costs</li> <li>US: exploration</li> </ul>	<ul style="list-style-type: none"> <li>Argentina: assets: 3 years (infrastructure accelerated Yr 1: 60%)</li> <li>Australia: assets : 100% SL over asset life;</li> <li>Bolivia: assets: 8 years SL</li> <li>Brazil: 100% development costs</li> <li>China: 10% SL on development costs</li> <li>Canada (BC): 100% development costs; 25% DB capital assets; 30% DB dev costs after production</li> <li>USA: 70%/30% over 5 years; unit of production rule or over 10 years.</li> </ul>				<ul style="list-style-type: none"> <li>Most fiscal regimes will not permit the deduction of an accounting provision for rehabilitation. Deductions will be either as costs are incurred or on payment to a trust fund.</li> <li>Loss c/back are rare.</li> </ul>

<sup>66</sup> This is the norm. However, in some States, such losses will be ring-fenced and only available for carry forward against future profits of the mining project / area.



costs: 70% deduction; 30% over 5 years.<sup>67</sup>  
Or capitalise and amortise over 10 years.

**Note:** there is generally a difference between the calculations of the tax base under a CIT regime compared with an associated RRT mechanism. In the case of development costs / capex, a CIT regime may allow depreciation over the life of mine or 10 years (normally the lesser of the two). Whereas under a RRT scheme, 100% of costs are deducted at the point of commercial production / when incurred.

**The cut-off points between the various phases are important for accounting and tax-related purposes. The development phase will normally commence where a decision to develop is made on the technical and commercial viability evident based on a feasibility study.**

**The cut-off between development and commercial production is often blurred. Indeed, development may still continue into the production phase.**

#### **Defining Commercial Production**

The LOSC<sup>68</sup> deems commercial production “*to have begun if an operator engages in sustained large-scale recovery operations which yield a quantity of minerals sufficient to indicate clearly that the principal purpose is large-scale production rather than production intended for information gathering, analysis or the testing of equipment or plant*”.

It may be preferable to determine in advance, if possible, pre-determined percentages and levels of recovery to trigger the start of *commercial production*. Additionally, there naturally has to be a continuous production process. This is something that should be considered for the exploitation code.<sup>69</sup>

**Closure will normally be determined where nodule recovery is completed or for other reasons (e.g. recovery is no longer economically viable) and a decision is taken to cease production.**

<sup>67</sup> Under this method, the expenses are recaptured at the production phase.

<sup>68</sup> Annex III, Article 17(2)(g).

<sup>69</sup> See general discussion: PWC *Financial Reporting in the mining industry: International Financial Reporting Standards* 6<sup>th</sup> Edition, November 2012 at 14.

## ***8. Interactions between DSM actors***

## ***Interaction between DSM actors***

A big unknown at this stage is the interaction of an ISA financial regime with that of individual State fiscal regimes – primarily of a risk / reward share and / or double taxation. Aside from an added challenge of contractor entities and thus a potential disparity in domestic treatment (company versus State enterprise), we do not know how States will reflect and treat the ISA fiscal regime in their own domestic tax regimes. Equally, what additional levies, taxes or contributions will be levied by Sponsoring and / or home country taxing States?

This will be of particular concern for private / commercial contractors and presents perhaps the single largest challenge in devising a *fair and equitable regime*.

### ***Contractor entities***

In considering a fiscal regime, the LTC needs to be mindful of the different legal entities and vehicles engaged in the DSM process. This may give rise to a variety of challenges in ensuring a consistent (and non-discriminatory) fiscal treatment and approach.

States have no international legal right *per se* under the LOSC to levy a charge on the minerals extracted from the Area. The ISA has the first right to a share in the fruits of exploitation. However, non-ISA payment obligations will arise in a variety of ways.

First, contractors may be obliged to pay sponsorship and administration fees to a Sponsoring State.

Secondly, Sponsoring States may impose a mineral recovery fee<sup>70</sup> similar to a royalty; the international legal basis for the levy of a royalty by Sponsoring States may be questionable. However, this is dictated by the legal relationship between the Sponsoring State and its Sponsored Contractor and the sovereign power of any State to raise revenue.

Thirdly, Contractor companies may be liable to corporate income tax on the taxable profits of DSM operations, together with any other relevant taxes, for example, withholding taxes. Such companies may be resident for tax purposes either in the Sponsoring State and / or a home tax State. Furthermore, if ISA financial terms are agreed at relatively “low” levels in a range, this will result in revenue leakage from the ISA to a sponsoring or home taxing State, with the latter taxing a higher profit level in a contractor entity. State enterprises, acting as Contractors, may not be subject to a tax on profits.

Private contractors (investors) will need to know the bottom line, aggregate effective fiscal burden (at ISA, sponsoring State and where applicable taxing State levels). While any State charge or levy does not impact the financial obligation due to the ISA *per se*, it will ultimately impact effective tax rates and the internal rates of

<sup>70</sup> For example see International Seabed Mineral Management Decree No. 21 of 2013 (Fiji). Section 45 provides for a “Seabed mineral recovery payment fee which will be based on the market value of the metals extracted. It will also take account of set-up, exploration and exploitation costs.

return for contractors. Consequently, it can impact the economic viability of a DSM project and thus investment in the Area.

IRR hurdle rates in the general mining sector can vary from 12% to 25% (post tax). What the required financial rates of return are or should be in DSM is uncertain.<sup>71</sup> Similarly, what the comparable rates of return to be demanded by State enterprises or States is unknown.

<b>Contractor entities</b>	
<b>State Enterprises</b>	<b>Natural or juridical persons</b>
E.g. JOGMEC, COMRA, Ministry of Natural Resources and Environment of the Russian Federation, Government of India.	E.g. Ocean Mineral Singapore Pte. Ltd, UK Seabed Resources Ltd.
No income or other taxes levied by State on State enterprise?	Resident entity say, – worldwide taxation of income generally. CIT & withholding taxes
IRR applicable? Lower rate – LTBR?	IRR important driver – risk-free + risk premium
No additional fees?	Additional fees or levies?

<sup>71</sup> TS No. 11 at 69 noted that an additional 5-10% return over and above land-based development.

States may attach a premium to sourcing particular commodities, wholly unrelated to commercial returns.

However, it should be assumed that normal commercial principles apply.

Much of the analysis surrounding the comparability of mining tax regimes focuses on the relationship between IRRs and effective tax rates (ETR). However, at this stage, any meaningful discussion of IRRs and ETRs, from a commercial Contractors viewpoint is academic.

Many Sponsoring States are likely awaiting the financial terms to be proposed by the ISA before deciding their own financial terms applicable to Sponsored Contractors. Catch 22.

Is this of particular relevance or concern for the ISA? The ISA needs to develop its own terms on a fair and equitable basis. However, any ultimate investment in the Area will also be impacted by the financial terms, taxes or otherwise, imposed by State actors. It is expected that States also wish to promote DSM investment in the Area. But ultimately who shares or takes what?

This will only be resolved through an extensive consultation process between ISA, State, mining company and industry associations.

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**Full cooperation & transparency between all actors, including the ISA, Contractors, Sponsoring and / or home tax States.**

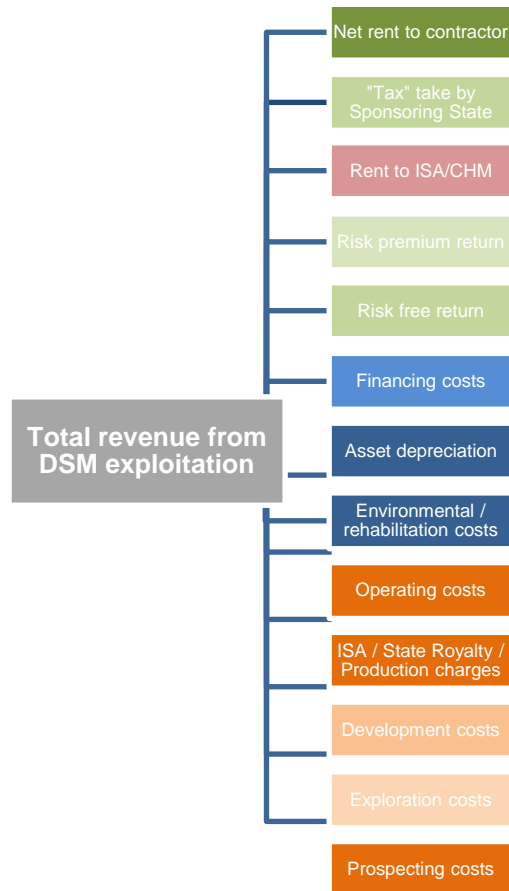


Figure 1: Total DSM revenue split

Firstly, let's consider "who potentially takes what" in the DSM value chain. Figure 1 to the left shows simplistically total revenue derived from DSM exploitation split into its component parts and its division between DSM actors.

TS No. 11 considered the application of *economic rents* to the DSM financial regime and this will be considered in further detail in the next Section. However, the division of rents and the overall issue of fair and equitable is a complex area and will require detailed consultation.

The LOSC and IA 1994 provide the guiding objectives and principles for the ISA financial mechanism: to determine an appropriate system, the payments of which should be within a range of those prevailing in land-based mining. From an ISA perspective this is clear. But what other third party payments will DSM Contractors have to make? And what impacts will these have on financial returns?

This should not necessarily be a concern for the ISA per se but in practice it will be given this complex interaction, particularly at normal versus economic rent levels.

"Who takes what" should be driven by the concept of risk as well, which the LOSC and IA 1994 does not make reference to – though arguably this is inherent in determining what is fair and equitable.

How is risk allocated? Primarily this sits with the Contractor – capital investment and legal obligations. The ISA carries risk too: legal obligations (development of RRP) and if a payment system is based on profitability, the ISA assumes a risk that financial payments may never materialise. A Sponsoring State assumes some risk under its "responsibility to ensure" obligation. A State taxing authority per se carries no risk but may secure incremental revenues simply from taxing an enterprise on its worldwide income.

### Double taxation - Contractors

Assuming an ISA mechanism and rates of payment is agreed, how will any royalty and / or profit-share or related payments made to the ISA be treated for “tax” purposes under a home country taxing regime? Will all payments to the ISA be treated as deductible and / or creditable under the relevant national regime?

The issue of double taxation is a highly complex area. It is also an area that is of great relevance to mining companies. Such entities will wish to ensure that any financial payments made to the ISA will be deductible or creditable under a host country tax regime. For example, any royalties paid to the ISA should generally be deductible as an expense under a home country tax regime; the tax treatment of other payments (e.g. an economic rent-type payment) may give rise to tax deductibility issues depending on the specific State fiscal regime. If ISA payments are characterised as a “tax”, such payments may not be creditable in a host country, thus giving rise to an additional financial burden on the Contractor.

The LOSC and IA 1994 did not make reference any reference to rates of tax or even a fiscal regime. The language and terminology has been confined to the words “royalty”, “profit share” and in the now deleted financial provisions of the LOSC, “share of net proceeds”. This may be deliberate to avoid any complex interaction with State tax regimes.

However, consider the following, very simple and hypothetical example. Table 1 below shows three scenarios. In scenario 1, a State tax authority allows a deduction for the ISA profit-share

payment and taxes the net amount. In scenario 2, a State tax authority does not allow a deduction for the contribution / payment to the ISA (unlikely). In scenario 3, the payment to the ISA is treated as a “foreign tax” and credited against any domestic taxes payable – a tax credit mechanism. In this case there is no additional local tax to pay. Scenario 3 is preferable for a Contractor but, even if payments to the ISA were treated as a “tax” under national tax laws, in the absence of double tax agreements, State tax authorities will unlikely grant unilateral relief (i.e. credit) for such a tax.

Is any payment to the ISA a “tax” in any case? The ISA is not a sovereign State. Its authority is derived from the LOSC. It cannot levy “tax(es)” per se. Much will depend on the characterisation of any payment under relevant national fiscal law.

	Scenario 1	Scenario 2	Scenario 3
Net profit (after all royalties)	100	100	100
ISA share, say 40%	(40)	(40)	(40)
Net profit after ISA	60	100	60
State tax at, say 30%	18	30	0
Total share (ISA + State)	58	70	40
<b>ETR</b>	<b>58%</b>	<b>70%</b>	<b>40%</b>

Table 1: Double tax impact

Furthermore, from a Contractors perspective, how will States calculate a tax base for DSM operating entities? Will they be subject to normal business sector CIT rules? Or specific (and beneficial) mining sector rules? These, after all, are designed to stimulate investment in a country. Or will the income be exempt in a home country (unlikely)? A mismatch *could* arise whereby States tax normal profits earlier than under an ISA mechanism save for any royalty mechanism. Most jurisdictions provide for the worldwide taxation of locally incorporated entities.<sup>72</sup> It may be there are some provisions that exempt non-local source income or activities but generally this is not the case. Non-State enterprise Contractors such as UK Seabed Resources Ltd, as a UK incorporated company will be resident for CIT purposes in the UK on its worldwide income and gains.<sup>73</sup>

Finally, there is the issue of transfer pricing adjustments. If any payments made to the ISA are subsequently adjusted to market-related prices or values, how will these adjustments be handled by a home country taxing State?

#### *How to resolve / take forward?*

This is an area that needs to be addressed in a Stakeholder Survey and subsequent consultation between all stakeholders. However, the issue is principally one between the Sponsoring State and / or taxing State and the Contractor. The mechanism and rates of

payment for ISA financial terms are prescribed. But as to rates, these are to be within a range – how wide a range?

Member States potentially have conflicting interests here. On the one hand, a “low” rate of payment may be argued for by some States – shifts profits to a taxing State. On the other, some will argue for “higher” rates – optimal revenues for the CHM but also the potential to discourage investment in DSM and retain investment in land-based mining.

Uncertainty in the DSM environment encompasses many areas. Yet, the behaviour of DSM actors in an economic sense is untested.

#### ***State taxation on the ISA / CHM***

Any financial terms should provide that all payments made to the ISA should be free of any deduction, tax or otherwise, by a paying entity. This is an important point that needs to be drawn out in stakeholder discussions.

Most territories levy withholding taxes on payments such as interest, royalties and profit remittances (dividends). It may be the case in a number of tax jurisdictions that royalties, for example, would, *prima facie*, be subject to a withholding tax.<sup>74</sup>

While there is a comprehensive set of double tax treaties between the world’s nations to mitigate or eliminate double taxation, the

<sup>72</sup> And / or on the basis of where the entity is managed and controlled.

<sup>73</sup> It is likely multinational companies will consider tax planning structures to mitigate the impact of any double taxation arising. This, naturally, is outside of the scope of this study.

<sup>74</sup> As a general rule States levy withholding taxes on IP-related royalty payments e.g. film, music, patent royalties. Mining royalties are normally intra-State (paid to a government of the State where the mine is located) rather than inter-State. So, this will be new ground for many States and consequently requires clarification.

treaty network with Jamaica (assuming the ISA to be an entity resident in Jamaica) is at best minimal.

Under a DTA or unilateral provisions, a withholding tax is generally creditable in a receiving State or even reduced to zero where there is a DTA.

However aside from the lack of DTAs concluded with Jamaica, the ISA has no taxable income. Withholding taxes could be a real “cost” for the ISA. For example, say a royalty payable to the ISA of 100 is subject to a 30% withholding tax, the taxing State receives 30 and the ISA / CHM 70.

Article 183(1) LOSC does provide:

“Within the scope of its official activities, the Authority, its assets and property, its income, and its operations and transactions, authorized by this Convention, shall be exempt from all direct taxation and goods imported or exported for its official use shall be exempt from all customs duties. The Authority shall not claim exemption from taxes which are no more than charges for services rendered”.

Consequently, there is argument that no such withholding taxes should be levied on the ISA.<sup>75</sup> But this should be clarified in the Stakeholder Survey.

Some of the discussions above may seem hypothetical or abstract. There are likely to be easy answers or solutions. However, this is uncharted territory and all possible scenarios need to be discussed and consulted on as appropriate.

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<sup>75</sup> Multinationals use a variety of techniques to minimise withholding tax rates including grossing up clauses and offshore royalty trap companies.



## ***9. Valuation – the starting point***

### **Valuation point for DSM**

This is a fundamental point and requires an explicit definition in the PN exploitation regulations. It is the point at which a value needs to be determined for say royalty calculation purposes – and, in the case of any profit-related mechanisms, the sales revenue at a “taxing” point and the deductions allowed for activities upstream of that point in calculating net profits (or losses).

In theory, it is acknowledged that the **valuation point** needs to be at, or as close to, the extraction point of a resource. This point in land-based mining is referred to as the “ex-mine” or “mine head” value.<sup>76</sup> It is the point at which compensation is due to be paid to the owner of the non-renewable resource. Applying a standard valuation point provides consistency across all mining projects.

Therefore, the value (the output value) of that resource at the valuation point should exclude any value-add in downstream processing beyond that point.

<sup>76</sup> Or, in an oil & gas context, the “well head” value.

However, a complexity of administration arises potentially in determining a value at the ideal valuation point, being the mine-head value. No sales will occur at this point.

Consequently, rather than any attempt to estimate the value of the minerals at the mine head, the point of a first sale by a mine producer is generally taken.

Therefore, there is need to look further downstream and find an effective first point of sale or transfer of the ore / concentrate / finished metal / international reference or published price...or simply a convenient valuation point. Points closer to the mine head are said to be “more economically efficient and equitable”;<sup>77</sup> that is, closer to the point being valued. Those closer to the ultimate consumption point can be easier to administer and offer greater revenue stability.

<sup>77</sup> Guj P, Bocoum B, Limerick J, Meaton M & Maybee B *How to Improve Mining Tax Administration and Collection Frameworks: A Sourcebook World Bank*, April 2013 at 26.

For example, the original LOSC financial provisions, provided for a royalty based on the market value of the processed metals.<sup>78</sup>

As a rule of thumb, other things being equal (i.e. no adjustments), any royalty levied further downstream stream, should be progressively at a lower rate. For example, in Western Australia, a historic royalty rate of 10% was levied at the mine-head. This remains the benchmark today as a return rate. However, this was changed to the following: 7.5% on crushed and screened ore; 5% if sold as concentrate and 2.5% if sold in metallic form.<sup>79</sup>

Otherwise, in determining say a royalty base, the mine-head value can only be determined by netting back the downstream costs from the valuation point.<sup>80</sup> This makes for more complex

<sup>78</sup> LOSC Annex III, Article 13(5)&(6).

<sup>79</sup> The rates were varied so as to encourage investment in downstream processing.

<sup>80</sup> These can include, depending on the valuation point: smelting & refining costs, sea freight, insurance, assay costs, packaging costs

administration. To reduce this burden, often the free on board (FOB) arm's length price<sup>81</sup> is used at the first point of sale,<sup>82</sup> generally at the point of export from a country or delivery within a country. This is effectively a gross price or value but it may be necessary to adjust the royalty rate: in principle a royalty on a net-back basis should be higher than a gross value one.<sup>83</sup>

But what if the first point of sale is not at arms-length (market-related)? The latter will be a problem in a vertically integrated operation where all parts of the operation are ultimately part of the same business

<sup>81</sup> Strictly, in a land based environment there is a Fair Market Value FOB Mine value, calculated by deducting port and transport costs from a FMV FOB port value. This latter value can be derived from a final benchmark price for product less transport and costs such as insurance.

<sup>82</sup> This does not necessarily mean all royalty mechanisms apply a rate on this price. This will depend on the specific regulations. Under various mining regimes the base may be one on "gross sales", "gross value", "net sales", "mine head value", "average metal prices" etc

<sup>83</sup> In the case of Uruguay, the IMF recommended the country adopt a gross value basis rather than netting back given the accounting, auditing and transfer pricing issues. See IMF Country Report No. 14/7, Uruguay, January 2014 at 42.

enterprise. Consequently, a reference to a market-related price is likely required in this case. Mining regulations generally provide for an adjustment to or substitution of an arms-length price. Again, this can add to administrative complexity.

Figure 2 on page 70 shows the various upstream and downstream phases of a DSM operation.

The LOSC determines that title to the minerals passes *upon recovery in accordance with the convention*.<sup>84</sup> In the case of PN exploitation, this is arguably the point at which a collector recovers the resources from the ocean floor.<sup>85</sup> This is, strictly, the point at which the ISA is seeking compensation for the value of the PN resource extracted, excluding the value-added by subsequent, downstream processes.

A full understanding of this process and the potential valuation points and arms-length sales points is needed. Equally, in

<sup>84</sup> Annex III, Article 1.

<sup>85</sup> Though this requires confirmation.

considering a valuation point, account needs to be taken of:

- Mineral valuation: will the valuation point adequately capture the fair value of all minerals contained in an ore or concentrate. For example, if a valuation point was taken as the sale of concentrate to a smelter, would this capture say the value of rare earth metals or other minerals contained in the ore?<sup>86</sup>
- If a royalty say is levied on the final market value of the metals, how easy an administrative process will this be to determine a value? What, for example, assay process and procedures need to be followed? Do all minerals expected to be extracted have an international reference value or price?
- What of the impact of any hedging arrangements? Should these be

<sup>86</sup> This may not necessarily generate credits for minor metals. Penalties can be imposed if minor metals complicate downstream processing. See Buchanan D *Analysis of reported actual and direct exploration expenditure by contractors with the International Seabed Authority* Imperial College London, March 2011 at 8.

excluded, where applicable, from any downstream valuation point? Arguably yes.

- If a net smelter value or similar value is appropriate, how transparent is the pricing mechanism? How do / will any advance pricing terms impact the fair market value of the metals produced?<sup>87</sup>
- Downstream processing: in any net back scenario, the impact of transportation costs? These could be significant for remote high seas locations. Can an index be used to reduce administration costs?<sup>88</sup>
- Transfer pricing: the point at which there is a third party, arms-length sale as opposed to a sale to a group and connected enterprise.

From a royalty base (and sales revenue) perspective, the following shows the order

of preference for determining a fair value.<sup>89</sup>

- a. International reference prices e.g. LME.
- b. The value of the metal in any concentrate by reference to an international market price. However, making assumptions regarding metal recovery may prove problematic.<sup>90</sup>
- c. The actual sales price of the metal or concentrate to a third party; this should ideally exclude any hedging arrangements and should reflect the actual metal price; and
- d. Related party pricing provided this is on an arms-length basis according to say OECD principles. If not, a taxing authority should have the power to adjust.<sup>91</sup>

<sup>89</sup> For information, *Annexure – Useful information* contains an overview of international reference pricing / markets for copper, zinc, lead and nickel.

<sup>90</sup> Could be based on an assay for metal content? See also Queensland where a metal recovery rate is assumed.

<sup>91</sup> The ISA could consider advance pricing agreements to cover this scenario.

Figure 2 on page 70 identifies five possible DSM sales / valuation points:

- At the mine head (collector). However, as in a terrestrial context, there is no sale of the minerals at that point;
- The stockpile on the mining or processing vessel (just before R1 on the figure);
- The first point of “export” from the Area (R1); however, will this be at an arms-length? It is likely there will be different scenarios;
- The first point of import (R2);
- [Will there be any intermediate export, import or local delivery points of relevance?]
- Sale to a smelter / refinery (R3); but at an arm’s length?
- Sale of metallic products and by-products (R4).

#### *Profit-related mechanisms*

The discussion above focused on a valuation point for royalty purposes. However, a similar principle applies in calculating profit and / or rent; there

<sup>87</sup> The impact of any arrangements, transactions or agreements needs to be assessed.

<sup>88</sup> For example, a Baltic Exchange index.

needs to be a point (the taxing point)<sup>92</sup> which is applied close to the mine head or extraction point. The sales revenue and allowable costs upstream of that point should be the theoretical basis for calculating profit or rent.

Under Australia's MRRT, the taxing point is placed after the crushing and screening of the ore.

Similarly, in the case of DSM in the Area, the point could be that immediately after de-watering (initial processing). This also accords with the definition of "activities in the Area" clarified by the ITLOS as being up to and including this point. However, this boundary point may not be relevant or intended. The 1994 Agreement is silent on valuation points for DSM activities in the Area and requires clarification, at least as regards a future profit-share mechanism.

Again however, similar sales revenue calculation issues will arise as highlighted above, and there may be some netting back to arrive at the taxing point value.

<sup>92</sup> To make a distinction from the valuation point for say royalty purposes.

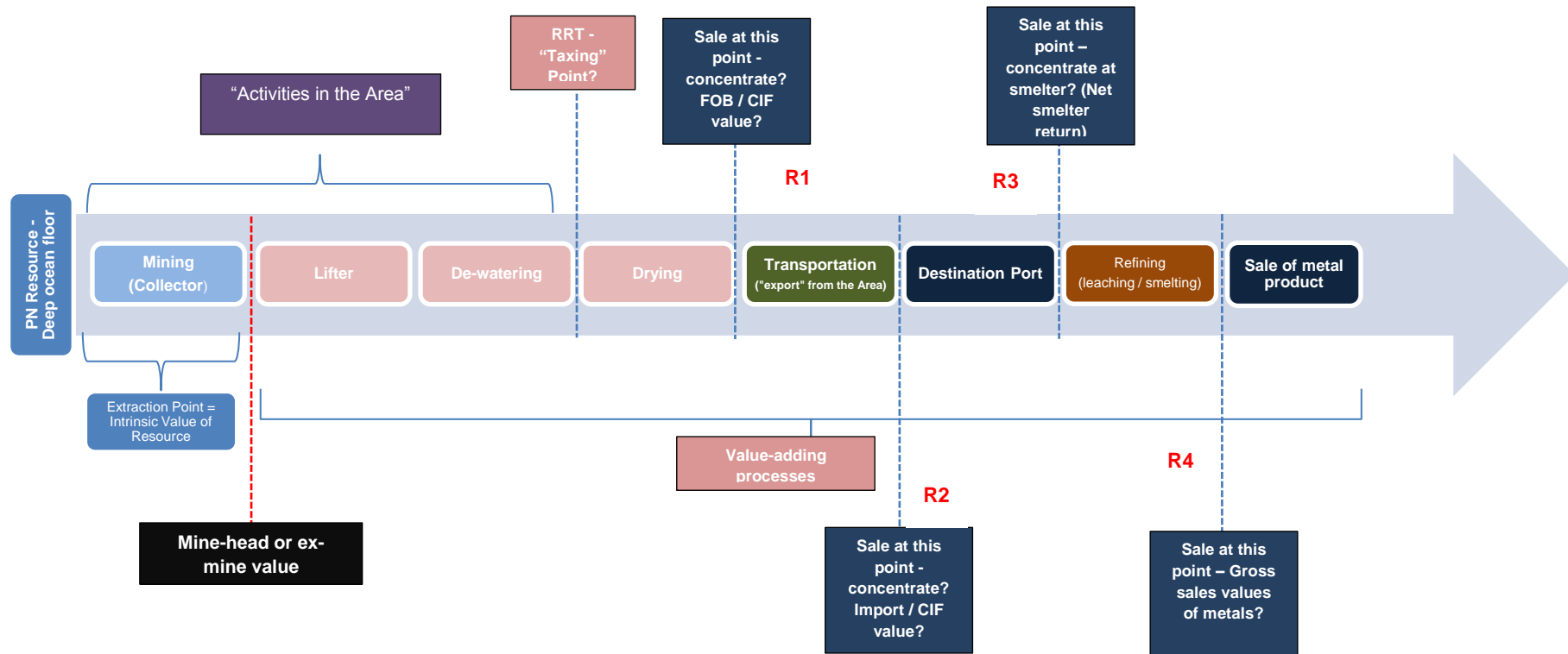
### Case example: New Zealand

The new NZ royalty regulations determine the point of valuation as "the point at which net sales revenues for each mineral product stream are calculated".

The regulations stipulate that the Minister must determine this at the time of granting a mining permit. However, the following principles are to be applied:

- for each mineral product stream, the point of valuations should ordinarily be the same as, or very close to, the point of sale of the product to an arm's length purchaser;
- netbacks or net forwards will not ordinarily arise or will not be significant, although separate points of valuation may be set for various mineral product streams;
- the point of valuation for any other mineral [not gold] should ordinarily be at the first point in the mining operations where the mineral has attained an acceptable saleable condition.

Figure 2: Valuation points for PN nodules / minerals



Note: "Activities in the Area" and its boundary point(s) has to be defined for a number of purposes under the LOSC and the 1994 Agreement, including that for the financial payment mechanism.

*Concluding remarks – Valuation point(s)*

The above discussion aims to flush out the issues that require consideration in determining a valuation point for both royalty purposes and also for profit-share purposes. This discussion cannot be divorced from that of the overall effective and efficient mechanism but it is a fundamental starting point, not least one of the trade-off between administrative efficiency, economic efficiency and revenue stability for the ISA.

From a pure royalty perspective making the valuation point as far downstream as possible, preferably at a market value / international reference price is the most administratively simple.<sup>93</sup> It also avoids the pitfalls of vertically integrated structures, transfer pricing and netting back.

However, if a profit-related element is also included in the final exploitation regulations, attention needs to be given to the overall package and aggregate administrative burdens on all stakeholders.

For example, the extent to which say, the sales base for royalty and profit / rent purposes can be harmonized could reduce administrative burdens. A separate sales value for royalties and determining sales revenues for a profit-related element at a different point will increase administrative burdens.

That said, royalties allow for greater flexibility in determining a valuation point in the downstream process, up to and including an international reference price.

The above points need to be born in mind as a review is undertaken of fiscal mechanisms in the next Section of this Working Paper.

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<sup>93</sup> Subject to the difficulty of a final downstream calculation – number of minerals extracted, available reference prices, grade etc.

## ***10. Fiscal mechanisms and financial payments***



**Objective:** the objective of this section 10 is to present an overview of the various fiscal mining regimes applicable to commercial land-based miners including royalty, CIT and special mining taxes. At this stage a high level qualitative assessment of comparable regimes is provided together with an overview of headline rates of payments. A more detailed discussion is made of resource rent taxes including their application to the petroleum sector.

The previous three sections remain important considerations for the discussion below. The importance of a valuation point for determining sales revenue; the unique tax treatment of mining expenses and capital expenditure on the tax base and the interaction of the various DSM actors

**Terminology:** as highlighted earlier in this report, terminology is important. During discussions leading to the IA 1994, various phrases were adopted in early drafts: *rates of taxation*, *rates of financial payment*. The final IA 1994 simply refers to *rates of payment* together with a *royalty and / or profit share* mechanism. The discussion below is centred on comparable tax regimes. Even within those regimes there is inconsistency in terminology – specifically where there is an interaction between federal and provincial levels. A royalty assessed on profits is more akin to a mining tax than a true royalty in nature. However, mining taxes may be called royalties to avoid any complications at a federal or other level in terms of their deductibility. This is not simply a question of semantics. It is, as noted in Section 8, a fundamental consideration for investors as to how any payment(s) to the ISA will be treated in the home taxing State.

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### ***Which mechanism or system for payment?***

A number of new “taxes” have been implemented across the mining fiscal arena. These have ranged from a progressive tax, which attracts a higher tax rate at higher incremental levels of taxable income; a sliding rate royalty which is linked to the mineral price (though this may not take account of inflationary rises over a period of years) and taxes related to an investor’s rate of return (the so-named resource rent taxes, surtaxes and additional profit taxes).

But have they worked? Have they resulted in a fair and equitable system? Have they secured predictable and stable revenue flows for their implementers? Or have they simply added additional administrative burden for all stakeholders?

These are difficult questions to answer, not least as a number of systems have only been in place for a short time or many regimes are at an intermediate stage in their development.

That said, this Section 10 will consider some of the systems adopted and try to provide a high level overview of their suitability to the DSM environment.

It should be remembered that there is no obligation in the IA 1994 to adopt a specific land-based fiscal mechanism or system. The guiding principles are a royalty or royalty and profit share combination. Alternate systems may be considered and implemented and perhaps parallels and best practice can be drawn from the oil & gas industry. The petroleum sector has achieved notable success in revenue generation – not least through rent resource models of taxation.

#### *A learning process*

Of equal importance here is the learning process and rationale flowing from the implementation of system changes. Some regimes notably in Africa and Australia have adopted new regimes, only to abandon them in their early years.

For example, Ghana adopted a sliding scale royalty (3-12%) applied to a base of total revenues and based on the calculation of an operating ratio.<sup>94</sup> This was abandoned as companies could outlay costs and time deductions so that higher royalty levels were not triggered.<sup>95</sup> The country now

has a “simple” 5% turnover tax.<sup>96</sup> Equally in Ghana, exploration and development costs are no longer eligible for accelerated depreciation under CIT rules and chargeable income is now assessed on a mine-by-mine basis (ring fencing). Despite these changes, there are a number of fiscal stability agreements in place which may undermine the impact of the new fiscal regime. Naturally, the issue of capacity in handling more complex tax matters was also at issue.

This provides warning signals concerning sliding-scale models generally and their ability to be manipulated combined with the application of “generous” incentives.<sup>97</sup>

Discussions surrounding what constitutes a “fair share” between stakeholders in the extractive industries has been particularly acute in the Commonwealth of Australia and the introduction of (and now proposed repeal of) a Mineral Resource Rent Tax. This is discussed in some detail below, not least the lessons learned.

<sup>94</sup> Operating ratio:  $(\text{Total value of minerals less operational cost}) / \text{Total value of minerals} \times 100$ . At 30% OR royalty was 3%; 30%-<70%, 3% plus 0.225 of every 1% by which the operating ratio exceeds 30%; over 70%, 12%.

<sup>95</sup> James Otto *Resource Nationalism and Regulatory Reform* RMMLF Special Institute on International Mining and Oil & Gas Cartagena de Indias, Colombia April 22-24, 2013 at 27.

<sup>96</sup> In 2006, a royalty of between 6% (max) and 3% (min) was introduced.

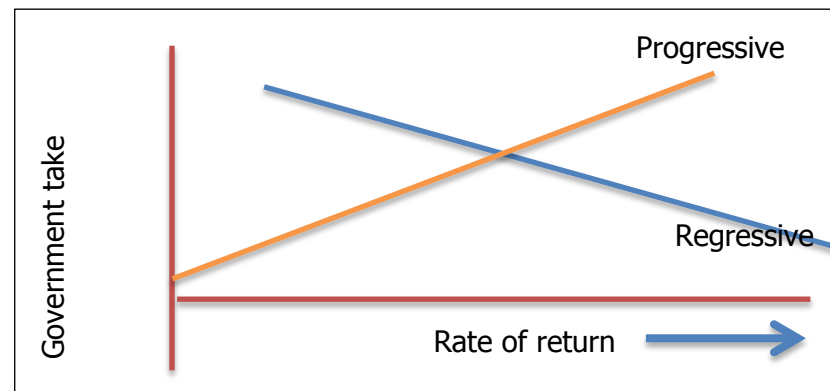
<sup>97</sup> In Ghana's case, an 80% deduction was permitted in year 1 (now 20% each year for 5 years). Compared to some regimes, this is not considered overly-generous.

Fiscal terms rank as important investment criteria for investors including the ability to predetermine a tax liability and the method and level of taxes. This does need to be seen as part of the overall package of the PN exploitation code. The stability of the ISA regime as a whole (risk factor) and availability of data are other important factors. **It is the sum of the parts of the ISA package that potentially lowers any risk premium in an investor's return.**

**Equally, any future wasteful or ineffective use of ISA financial receipts will undermine credibility of the structure.**

There are relatively few countries at this time that have imposed an additional profits tax. Their introduction is not without controversy – and often accompanied by a withdrawal (or threats of withdrawing) capital investments by mining companies. Though the progressive regimes adopted by Chile and Peru are exceptions.

Progressive mechanisms have appeal. Profit is a factor of three main elements: the commodity price; the grade / metallurgical quality (high grade drives lower processing costs) and the distance to a market (transportation costs). Consequently, it stands to reason that systems which accommodate (flexibility and responsiveness) these elements are more favourable than traditionally regressive “pure” royalty mechanisms.



Yet, perversely, progressive mechanisms tend to be more complex to administer – the more complex the fiscal terms (and higher the rates) the greater the opportunity (and driver) for manipulation.

#### *The uniqueness of the mining industry*

The mining industry is unique. It arguably presents investors with the opportunity to earn above-normal profits. This is based on the premise that there is a finite supply of non-renewable resources. In other business sectors, the opportunity to create above-normal profits attracts competition, thus reducing rent values.<sup>98</sup> However, the mining sector requires high levels of capital investment and price volatility and presents a riskier scenario despite finite supply.

<sup>98</sup> Equally, the right to exploit a particular oil field or mine is an exclusive one thus excluding competition during the exploitation process.

Consequently, a “high” rate of taxation may act as a disincentive to invest in marginal operations.<sup>99</sup> Conversely, a “high” level of incentives may encourage investment in operations providing reasonable economic rents in the short term, but over a longer term optimal extraction is not achieved. Equally, high tax rates precipitate a change in tax behaviour as sales may be understated or costs overstated as a result of transfer pricing or other tax avoidance techniques.

From an administrative viewpoint, the more complex the mechanism, the greater the capacity required in its policing and enforcement.

It seems under current best practice in a land-based context that the ISA fiscal regime should contain profit-related mechanism with a royalty instrument. The latter provides the minimum payment to the ISA. It can also be linked to profitability. A second level of levies could comprise an instrument which drives environmental objectives and promotes best environmental practice. This is dealt with in Section 11.

### *The trade-off*

However, profit-related mechanisms often fly in the face of simplicity.<sup>100</sup> Clearly fewer taxing instruments under a regime

lead to greater simplicity. The figure overleaf provides an overview of regressive to progressive mechanisms used to tax mineral resources under land-based mining regimes.

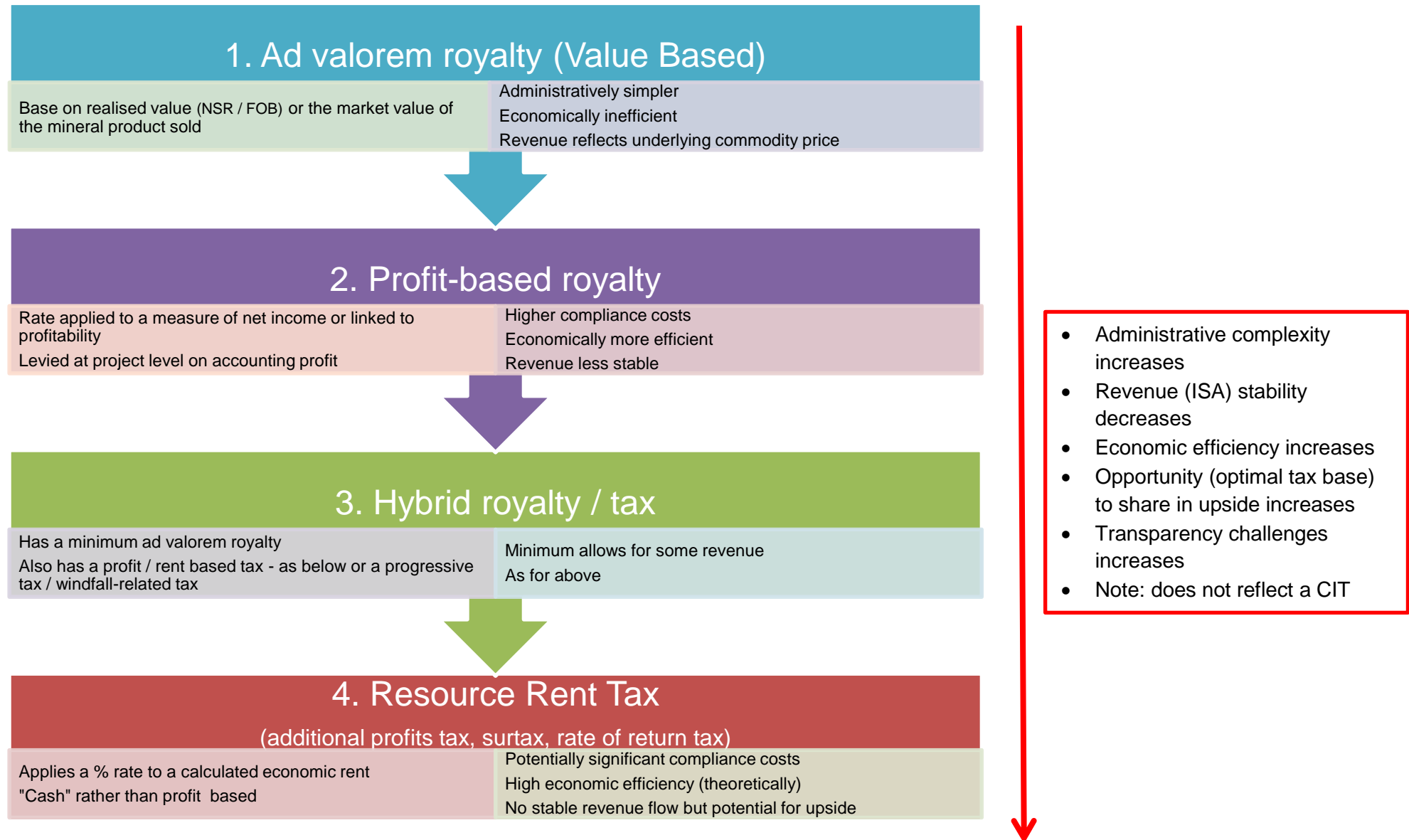
There is an inevitable trade-off in determining the appropriate fiscal instrument(s). Many countries opt for production charges (royalties) to secure revenues in the early years of production. However, this conflicts with an investor preference for a progressive regime based on profitability which, together with transparency produces a more stable and credible regime. Traditional ad valorem royalties by their nature vary with price, but do not typically address unit costs of production and thus impact marginal operations. As observed by Otto:

“A reasonable, low royalty rate in systems that allow indefinite loss carry-forward may have less effect on long-term recovery of minerals (reserves) than is popularly believed. However, although the impact of a low royalty on reserves mined over the long term may be minimal for many mines (excepting marginal mines with a bulk of their ore near the cutoff grade), the threat posed by the necessity to pay substantial *in rem* taxes<sup>101</sup> during years when the mine is operating at a loss poses a significant threat to all

<sup>99</sup> Those mine operators operating close to a financial breakeven point.

<sup>100</sup> For the ISA this is further complicated by there being no accounting or reporting systems in place to accommodate either a royalty or profit-share mechanism.

<sup>101</sup> These are unit or value-based taxes like ad valorem-based royalties, import and excise duties, sales taxes and VAT. This contrasts with *in personam* taxes which are net revenue or net profit based, including net profit royalties.



mines that do not have cash reserves to bridge the loss-generating period.”<sup>102</sup>

That said, the IMF, in the case of advising on developing country regimes, still advocates a system comprising royalties, the corporate income tax and a tax on rents.

#### *A decision on administrative capacity*

In reviewing models there is a clear problem. Unlike all States, there is no CIT system or model in place at the ISA that royalty and additional profit mechanisms can be “bolted” on to.

Consequently, what is the appetite for increased staffing levels or alternatively outsourcing? There are three considerations here:

- i. The nature of financial system requirements;
- ii. The administrative capture and processing of financial data and payments; and
- iii. The technical capacity required to support a profit-based mechanism, particularly transfer pricing matters and other fiscal avoidance tools.

These, however, are not insurmountable but require analysis in due course. They should not, it is submitted, override optimal revenues for the ISA / CHM.

<sup>102</sup> Otto J et al *Mining royalties : a global study of their impact on investors, government, and civil society* The World Bank (2006) at 33.

#### *What is the appropriate level of taxation for the mineral sector?*

Determining any optimal tax rate at this stage would involve a crystal ball. Aside from the uncertainty over future metal pricing and production costs, we know little, if anything, about the economic behaviour of contractors under a DSM regime. Furthermore, this may be compounded by the entry of state enterprises and the premium they may attach to a particular commodity, at least hypothetically.

#### *Rates of payments?*

Though it is perhaps premature to undertake a detailed discussion of comparable fiscal data, the IA 1994 does require its ultimate consideration.

This WP has not reflected the overall, potential fiscal take in the DSM value chain. Many studies undertaken by international bodies and States themselves have considered the international competitiveness of individual fiscal regimes. This has included discussion centred on investor rates of return, effective tax rates,<sup>103</sup> the marginal effective tax and royalty rate and the percentage of government take. These

<sup>103</sup> The IMF concluded effective tax rates in petroleum range from 65 -85% and those in mining 45-65%. See IMF *Fiscal Regimes for Extractive Industries: Design and Implementation* Prepared by the Fiscal Affairs Department, 15 August 2012 at 35. However, there is no detailed breakdown as to what tax types are included.

are “technical” indicators which show, for investors, the impact of fiscal regimes on sector / project investment.

This highlights another important consideration: a question of setting an appropriate **benchmark rate**. For example Western Australia’s royalty rates are designed to capture a notional 10% of well-head value; the New Zealand government benchmarked its share at between 30 to 40% of accounting profits.<sup>104</sup> ***It would appear sensible to establish such an appropriate benchmark against which to assess the constituent elements of the ultimate ISA regime.***

We are not quite at that stage yet. There remains the discussion over the interaction of other regimes which may well levy other taxes including say withholding taxes.

However, the IA 1994 is arguably more simplistic at this point in requiring a broad review of comparable rates. This WP has limited that review to royalties, CIT rates and additional profit tax rates across a broad range of comparable land-based regimes.

Currently there are as many tax regimes as there are countries. However, a “typical” regime will consist of a

production royalty, a corporate income tax and in some countries, an additional profit tax to capture so-called economic rents but more usually taxing a portion of “windfall” profits.

At a high level, the overall mining sector tax burden is in a 40-55 per cent effective rate range consisting of royalties (3-6%), corporate incomes taxes (25-35%) and additional profit taxes (15-25%). There is also a relationship between these charges – royalties are usually deductible for CIT and APTs; APTs may be deductible for CIT and vice-versa.

The next part of this section will consider comparable schemes and models and present an overview of the data researched, principally jurisdictions with significant land-based mining regimes, mining minerals similar to DSM minerals.

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<sup>104</sup> See Ministry of Business, Innovation & Employment *Review of the royalty regime for minerals Discussion Paper* October 2012 at 12.

### ***Building the model***

Royalties, CITs and additional profit taxes are fundamentally based on accounting accrual concepts. Royalties are a charge on sales and CITs (and additional profit taxes) are a charge on “normal profits”. For example, CIT is charged from the first dollar of profit; an additional profit tax may be more progressive, with higher rates of tax applied at higher operating margins or are similar to a CIT but at lower rates. But they are still a charge on the normal profit. This is distinct from RRTs which are aimed at / calculated on cash flows after a project has reached a / its pre-determined rate of return.

### ***CIT and Additional Profit models***

Section 6 has already covered an overview of the key elements of a CIT base. Often, but not always, an APT will use a tax base similar to the CIT base so similar issues of complexity arise with regard to the treatment of exploration, development and production spend, transfer pricing, interest deductibility etc. From an ISA perspective there would be no reason necessarily to operate two separate CIT and APT models. States have generally not opted to have different CIT rates for different business sectors; consequently mining specific APTs have been introduced. That said other profit mechanisms have been adopted by provinces under a federal system e.g. the Northern Territory in Australia, Ontario and Quebec in Canada. Other territories e.g. British Columbia operate hybrid royalty / mining tax systems.

The Annex to this Section contains a chart at page 116, showing the range of CIT rates across the principle jurisdictions. These range from 16% to 40% with a simple average of 27.5% and median of 28%.

Pages 112 to 115 show the profit and additional profit-based tax systems in the range of 10% to 20%. Hybrid systems in Canada have a typical 1% to 2% minimum “royalty” and 12% to 16% mining tax. It should be remembered that these extra profit taxes (over and above a CIT or federal tax) are normally a deductible cost in determining a CIT or federal tax base.

However, of equal significance is the tax base for many of these profit-based models. Given the special treatment generally afforded to the mining sector, effective tax rates are often lower for a particular project. The tax benefit that can be generated by accelerated deductions for spend is illustrated by the example overleaf:



The design of fiscal schemes influences financial decisions. While a headline (top) tax rate gives a feel for the amount of tax an enterprise will have to pay, the timing of a tax event (when revenues are taxed, when deductions are allowed) makes a difference too when taking account of the time value of money.

Say Enterprise A has a mining operation in Country A. Country A has a CIT of 30% on taxable mining profits.

Enterprise B has an equivalent mining operation in Country B. Again the tax rate of Country B is 30%.

Assume that Enterprise A & B have spent **\$1 000m** on pre-production, exploration, development and production costs, including capital expenditure.

Country A allows for a 100% deduction against sales at the point of commercial production. This is called accelerated depreciation.

Country B allows for a full deduction from commercial production but this has to be depreciated (spread) over 10 years.

In both countries the nominal value of that deduction is \$300m (\$1 000m x 30%).

However, this does not take account of the time value of money. If Enterprises A and B set the time value (discount factor) as 15%, the present values of the tax benefit are different:

- Enterprise A (country A) – benefit      \$153m
- Enterprise B (country B) – benefit      \$127m
- Difference                                      \$ 26m

This is not an absolute but it demonstrates the relative time-sensitivity of depreciation and accelerated deductions and their importance to mining financials, particularly cash flows.

Note: in the case of Enterprise A, it is assumed that \$750m of the \$1 000m is deducted in years 5 & 6.

## **Royalties**

Pages 108-1102 of the Annex to this Section 10 contains a series of tables showing royalty rates across the principle jurisdictions.

In the case of ad valorem royalties based on a realised sales amount, these range from 2% to 12%, with a middle range of 3%-5%. As highlighted earlier in this paper, an ad valorem royalty approaching 5% is considered to be too high, at least in a land-based mining regime.

There are a handful of countries that use an international market reference price as the royalty base for example Australia's Queensland, India and significantly Mongolia which also levies a high surtax with progressive price brackets.

Typically, countries will have (and should have) transfer pricing rules and regulations such that if any royalty base value is not at an arms-length, then the price can be adjusted or benchmarked to an international reference price.

Equally, the royalty base needs to be taken into consideration. Most, but not all, are based on a gross sales or invoice value less transportation and insurance costs. These are in effect a net back approach which attempts to value the mineral resource at the point of extraction.

At this point mention should be made of **Article 82** of the LOSC. This article concerns the payments in respect of the exploitation of the continental shelf beyond a 200 nautical mile limit. Provision is made for this to be payable from year 6 at the rate of 1% of value or volume of production to a maximum rate of 7% from the 12<sup>th</sup> year onwards. While there are understandably some parallels here, the requirements of the IA 1994 requires comparability with land-based mining regimes.

Finally, progressive royalty rates should not be discounted, with a link to profitability. South Africa's model may be of interest in this regard.

The next section will tackle the issue of rent resource taxes, perhaps the most controversial area of a mining fiscal regime.

### **Rent resource based tax models**

RRTs are not a common feature in mining tax regimes. That said, elements of RRTs are found in progressive profit tax models to varying degrees.

RRTs are currently in place in Kazakhstan (excess profits tax 0%-60%), Liberia (surtax on income from high-yield projects at 20%), Australia (Mineral Resource Rent Tax at 22.5%) and Malawi (a 10% resource rent tax). The Cook Islands have also recently proposed a RRT-style tax in respect of seabed mining in its EEZ at the rate of 25%. The RRT mechanism has not replaced CIT mechanisms which tax normal profit. The RRT is normally deductible for CIT purposes. For example, under Australia's original proposals an aggregate tax rate of 55% was recommended. As the CIT rate changed, the RRT rate would change to maintain an overall contribution of 55%.

The main principle behind these rent models is they aim to maximise government returns over the longer term and are not as distorting as traditional profit and royalty-based models. But, no minimum level of revenue is assured. Hence they should not be seen as a replacement to a royalty – and perhaps CIT-equivalent mechanism.

Targeting rents though the RRT mechanisms cannot, in practice, be done accurately, at least from an economic perspective. The mechanisms adopted are often a best fit and in the case of Australia's MRRT, perhaps flawed due to overly generous industry concessions (see below).

Essentially, RRTs are targeted at trying to capture the revenue that is in excess of the costs of production including the normal profit element. This normal profit is the minimum return on capital invested that is sought by investors. Given the uncertainty surrounding the commerciality of DSM, economic rents may be higher or lower than forecast. Indeed, it is not inconceivable in the case of some projects that little or no economic rent will be earned in the long term.

The theory behind economic rents is that due to the nature of mineral extraction, operators can earn "sizeable" rents; these rents are in excess of required investor returns. Theoretically, a taxing authority can levy a higher take on these rents without it impacting project investment decisions.

Otto notes that economic rent can be split into three elements. First, a *quasi-rent*, which accounts for a mine's return on capital and fixed costs. This is a short-term rent. Secondly, *other rent*, which reflects the cyclical nature of the commodity prices. Higher prices, higher other rents. Again, this is a short term rent and offsets periods of low commodity prices. It is considered that this should not be taxed. Thirdly, the *pure rent* reflecting higher grading or a more cost efficient operation. He notes that while this pure rent is the very one that provides an incentive for exploration, it is often advocated as being the rent to be taxed.<sup>105</sup> As he explains "the search for new technologies that convert uneconomic mineral deposits into valuable ore is driven by the hope of capturing the

<sup>105</sup> Otto J et al *Mining royalties : a global study of their impact on investors, government, and civil society* The World Bank (2006) at 25-26.

pure rent such successful innovations create”.<sup>106</sup> Therefore, a portion of the pure rent should remain for future investment or simply as compensation to investors for those years where no normal returns were made. Consequently, from an investor perspective, they are not without controversy.

RRT-based mechanisms are impacted by trade-offs between their administrative efficiency and their economic efficiency. That said, where there is an existing CIT base, bolting on a RRT mechanism is not a major headache, though some up skilling of personnel is required.<sup>107</sup>

The original financial terms proposal contained within Annex III, Article 13 of the LOSC constitutes a RRT (and royalty-based) mechanism based on a return on investment.

There are broadly three types of rent tax models:

- A **Brown tax**: this taxes net cash flows at a constant rate. Where there is a negative cash flow, the taxing authority refunds the tax value of that negative cash flow. Clearly, this involves a taxing authority sharing the risk.
- A **Garnaut and Clunies Ross RRT**: similar to the above, except there is no refund. Negative cash flows are carried forward for deduction in later years. The carried forward amounts are uplifted by an “amount”. What that amount is, is controversial. Long-term government bond (risk free return)?

<sup>106</sup> Above at 26.

<sup>107</sup> Opinion is divided on this. Some authors believe it is better to retain a royalty and normal CIT regime and simply levy a higher CIT rate.

Risk free return plus risk premium? Australia and Liberia use this mechanism.

- An **allowance for corporate capital (ACC)**: levies a rate on net income less an allowance. The allowance is compensation to investors for the delay on the contribution to investment cost – slower recognition of expenses (e.g. depreciation) and no immediate refund of losses.

One of the main challenges in a RRT mechanism is the uplift to be applied to deductions – and whether this should distinguish between different types of expenditure. For example, should exploration costs, being more “risky”, be uplifted at a higher rate than say development and / or operating costs? Indeed, consider an “excessive” uplift amount: investors could delay production to take advantage of the uplift.

In Kazakhstan the uplift is 25%, Liberia 22.5% the Cook Islands 20% and Malawi where a company’s rate of return exceeds 20%.<sup>108</sup>

However, the Commonwealth of Australia presents an interesting case study given its mix of tax instruments: CIT (federal), royalty (state/provincial) and resource rent tax.

#### *The Australian experience*

The Australian Minerals Resource Rent Tax package was introduced by the Minerals Resource Rent Tax Act 2012 (MRRTA). It

<sup>108</sup> In the case of one uranium mine, Kayelekera Uranium Project, this was reduced to zero by agreement.

established a framework to levy a MRRT liability on mining profits, principally bulk commodities (coal and iron ore). Companies became liable to the MRRT from 1 July 2012 at a headline rate of 30%<sup>109</sup> and effective rate of 22.5% after deducting a 25% extraction allowance. This allowance was an attempt to capture a tax on the resource itself excluding any value added by the miner. That is, no taxing of the value-add in any downstream activities.

**MRRT liability = MRRT rate x (Mining profit – Mining allowances)**

The MRRT was introduced following a tax review (The Henry Tax Review) and consultations with the mining industry. The MRRT started life as the Resource Super Profits Tax (RSPT) at a rate of 40%. Negotiations with the mining industry led to a higher uplift factor and accelerated depreciation of new investments.

One rationale for the MRRT was that natural resources, being non-renewable allowed for “above normal profit”<sup>110</sup> or economic rent. The model is based on the Garnaut-Clunies Ross resource rent tax incorporating an upliftment of tax losses at a discount rate (long term bond rate + 7%) to reflect the time value of any unused

<sup>109</sup> The Petroleum Rent Resource Tax is levied at 40%.

<sup>110</sup> “The object of this Act is to ensure that the Australian community receives an adequate return for its taxable resources, having regard to: (a) the inherent value of the resources; and (b) the non-renewable nature of the resources; and (c) the extent to which the resources are subject to Commonwealth, State and Territory royalties. This Act does this by taxing above normal profits made by miners (also known as economic rents) that are reasonably attributable to the resources in the form and place they were in when extracted”: Section 1-10 MRRTA.

deductions and a premium reflecting a zero refund from government in the event losses could not be used.

The package also includes:

- A nil liability for miner profits below A\$75 million (the full MRRT kicks in at profits over A\$125 million);
- The starting base for assets was either book value (permitted a 5 year accelerated depreciation rate)<sup>111</sup> or market value at 1 May 2010 (effective life);
- Investments (capital assets and mine development) post 1 July 2012 could be written-off immediately;
- The transfer of MRRT losses to other coal and iron ore projects in Australia, albeit the MRRT is a project-based tax.

The MRRT has proved highly controversial. It has been the subject of a High Court challenge and a Bill before the Australian Senate<sup>112</sup> could see the abolition of the MRRT – an election promise made by the current Abbot administration.

The Commonwealth government estimated that the MRRT would raise A\$10.6 billion in revenue in the first 3 year period. In its first two quarters the MRRT raised A\$126 million, compared to a Treasury forecast of A\$2 billion.<sup>113</sup>

<sup>111</sup> Year 1: 36%, Year 2: 24%, Years 3-4: 15% and Year 5: 10%.

<sup>112</sup> Minerals Resource Rent Tax Repeal and Other Measures Bill 2013.

<sup>113</sup> It is notoriously difficult to estimate new taxes – zero base estimation. Its implementation was to facilitate a corporate tax rate cut and improved superannuation benefits.

In a report to the Minerals Council of Australia, Deloitte analysed both the factors underlying the poor MRRT result together with an estimate of the position under the original RSPT proposal.<sup>114</sup> These are important to an understanding as to whether the MRRT is fundamentally flawed, a question of timing (short-termism) and / or other factors.

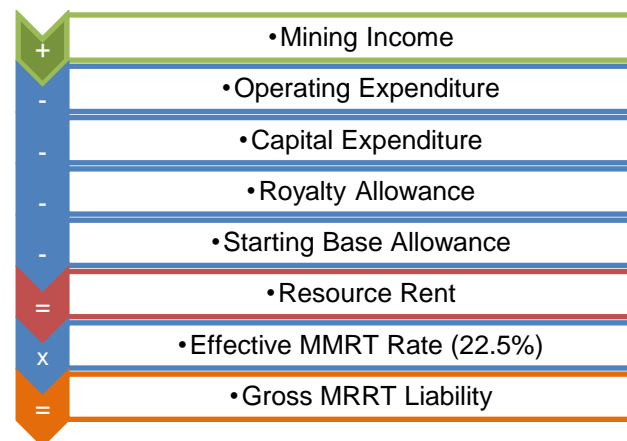
Deloitte failed to see the surprise in the low revenue take given global market conditions: a downturn in commodity pricing, lower production levels, A\$ exchange rates and their impact on capital expenditure.

Two of the main differences between the MMRT and RSPT was the latter would have allowed for a refund of state royalty taxes and higher rates of depreciation. Indeed as a result of royalty refunds, under the RSPT, some A\$0.9m would have been refunded. There has also been a trend in the state governments raising royalty rates as miner profits rose.

The MMRTA provides for a “royalty allowance” in calculating the liability to MMRT. The calculation effectively reduces the MMRT liability by the amount of the royalty. It does this through a grossing up provision in calculating a “royalty credit” for a period:

If a miner pays a state royalty of A\$22.5 million in a MRRT year, the royalty credit in that year is:  $A\$22.5 / 0.225 = A\$100$  million.

<sup>114</sup> Deloitte Economic Access *The first six months of MRRT tax take – how would it have differed under the RSPT?* A report for the Minerals Council of Australia 15 April 2013.



What lessons can be drawn from the MMRT experience?

- i. It would appear that the valuation point is an area that requires careful consideration. It may be that some downstream activities have been included in the MMRT calculation base. The issue of a valuation point is discussed Section 9 as this is of fundamental importance in any fiscal regime.
- ii. A conceptual difficulty in understanding why the royalty credit is grossed up at the MRRT rate. Seemingly, this was a consequence of consultations with the mining industry and perhaps reflects an overly generous package;
- iii. The starting base for the MRRT was taken as the market value of mining assets which would have reduced the potential tax base significantly;
- iv. The application of the MRRT to iron ore and coal only, rather than across the minerals sector as originally proposed.

### ***RRTs - petroleum regimes***

RRTs have been more stable in the petroleum sector. It is interesting to note from a recent IMF study<sup>115</sup> that there is a wide range of fiscal mechanisms under both mining and the petroleum sector and typical differences between the two:

- Mining: royalties are universal, whereas production sharing & bonus arrangements are generally absent;
- Petroleum: production sharing (in a wide sense) is more typical (but not universal) with some bonus arrangements.

Petroleum regimes include RRTs and a form of production sharing under the guise of the “R-factor”.<sup>116</sup> This factor (also applied to RRT mechanisms – see below) determines an increased share to an authority as the ratio of a contractor’s cumulative sales to cumulative costs improves. It is consequently linked to profitability.

This “R-factor” is not dissimilar to the mechanism originally proposed in the LOSC with the ISA’s share being driven by a return on investment (ROI); a higher contractor ROI driving a higher share of net proceeds by the ISA.

The following section provides an overview of country-specific mechanisms operating in the oil sector.

One of the biggest debates is that of the uplift factor to use in determining RRTs. This varies and there appears to be no international best practice in determining an appropriate rate. In some countries, long-term bond rates (as the starting point for a risk-free rate) may not be available or simply unreliable.<sup>117</sup> Even so, uplift rates should be reasonable, time-limited and where possible avoided (though this negates the rationale to share the economic rent).

#### *Norway*

In the petroleum sector, Norway perhaps typifies a highly successful rent-based model. Although the marginal (top) tax rate at 78% (51% rent-based tax and 27% corporate income tax) is “high”, the system provides an interesting model by both uplifting expenditure thus reserving the normal return to an investor. For companies in a loss-making position, a refund of the tax value of exploration expenditure.<sup>118</sup>

<sup>115</sup> IMF “Fiscal Regimes for Extractive Industries: Design and Implementation” Prepared by the Fiscal Affairs Department, 15 August 2012

<sup>116</sup> Other forms of production sharing in the petroleum industry include the Daily Rate of Production (DROP), where a State’s share of profit increases with the DROP; cumulative production from a project and a rate of return, where the share is linked to benchmark rates of return (in effect a form of RRT).

<sup>117</sup> The uplift rate adopted in the original LOSC mechanism was 10% (Annex III, Article 13(6)(d)(i)).

<sup>118</sup> Thus the state underwrites private sector investment risks to an amount of 78% together with a heavy investment in seismic data which reduces exploration risk and consequently may lead to significant production revenues, albeit there are high rates of tax. Norway needs to be seen in the context of a “total package”.



Sales income (calculated by **norm prices**)

Less: Operating costs (inclusive of exploration costs, indirect taxes, environmental taxes, abandonment costs)

Less: **Depreciation** ( $16\frac{2}{3}\%$  annually (i.e. over 6 years) of production and pipeline investments)

Less: Net financial costs (based on the ratio between the tax value of operating assets on the shelf and the average interest-bearing debt over the tax year)

Less: Losses carried forward from previous years

Result: Ordinary tax base @ 27%

Less: **Uplift** ("supplementary depreciation" - 5.5% of investment for 4 years)

Less: Unused uplift carried forward from previous years

Result: RRT base taxed @ 51%

Features and principles behind the mechanism are:

- A CIT of 27% on normal returns – across all business sectors;
- The RRT was introduced in 1975 – stability and credibility;
- The regime applies to upstream activities;
- Changes:
  - In 2014, the CIT rate was reduced from 28% to 27%. The RRT was raised by 1% to 51%;
  - From 5 May 2013, the **uplift** was changed from 30% to 22% over 4 years. That is, from 7.5% to 5.5% each year for 4 years. Government considered 30% an

overcompensation (no industry consultation on the change);

- **Norm prices:** independent arms-length prices given vertically integrated petroleum structures. Set by the Petroleum Price Board;
- **Depreciation:** an implied 6 year economic life is probably generous as most assets will be in place for more than 6 years;
- **Uplift** is based on capex investment subject to the 6-year depreciation rule. Its purpose is to ensure that ordinary returns are not subject to the special RRT;
- From 2005, for loss-making companies the tax value (78%) of exploration costs is repaid;
- Equally, the tax value (78%) of any losses at termination are also repaid;
- Other unused losses carried forward with interest - (risk free + 0.5%)\*(1-0.28);
- The regime applies to an entity rather than ring-fenced projects.

### ***Ireland***

Petroleum activities in Irish waters are subject to a CIT rate of 25% (Ireland's normal CIT rate is 12.5%) plus from 2007, a Profit Resource Rent Tax (PRRT). The PRRT varies (progressive) between 0% and 15% depending on a defined profit ratio.

The PRRT rate is determined by a profit ratio formula defined as the cumulative after-tax profits on a specific field (fields being ring-fenced for these purposes) divided by the cumulative level of



capital investment.<sup>119</sup> The marginal tax rate therefore ranges from 25-40%.<sup>120</sup>

<b>Profit ratio</b>	<b>&lt;1.5</b>	<b>&gt;1.5, &lt;3.0</b>	<b>&gt;3.0, &lt;4.5</b>	<b>&gt;4.5</b>
<b>PRRT</b>	<b>0%</b>	<b>5%</b>	<b>10%</b>	<b>15%</b>

Features and principles behind the mechanism are:

- The regime is generally ring-fenced (some limited relief for losses);
- 100% allowance for exploration expenditure; treated as incurred on day petroleum trade commences;
  - But, a 25 year time limit on exploration spend;
- 100% deduction for development expenditure at point of commercial production;
- 100% deduction for abandonment expenditure;
- The benefit of this R-based rent tax<sup>121</sup> is there is no requirement to calculate depreciation or address the issue of financial costs;

<sup>119</sup> Both exploration and development expenditures are 100% deductible, with the latter being deductible on commencement of commercial production.

<sup>120</sup> Profit ratio: <1.5: 0% RRT; >1.5 but <3.0: 5% RRT; >3.0 but <4.5: 10% RRT; >4.5: 15% RRT.

<sup>121</sup> From April 2010, Israel similarly introduced an R-factor windfall RRT. At 0% where the relative levy factor is less than 1.5. Once a project's relative levy factor reaches 1.5, the levy rate will be 20%. This rate will increase linearly as the relative

- There is no complication in determining any uplift factor;
- The PRRT is not deductible for CIT purposes.

Discussions are in place concerning an increase in the PRRT rate from a minimum take of 40% (for small discoveries) to 80% (for very large commercial discoveries); that is, PRRT on a phased basis of 15%, 35% and 55%.

### **United Kingdom**

The UK historically levied a Petroleum Revenue Tax on supernormal profits at 50%. This has now changed. The UK levies a Ring Fence Corporation Tax (RFCT) at 30% on oil and gas extraction activities in the UK and UK continental shelf together with a supplementary charge of 32% (total marginal tax rate: 62%). The RFCT taxable base includes a 100% first year allowance for nearly all capital expenditure. Additionally, the supplementary charge can be eliminated by a *field allowance* for new or technically challenging field, as defined. A Ring Fence Expenditure Supplement of 10% can be applied to any unused exploration and development expenditure carried forward 6 years (to maintain time value).<sup>122</sup>

Similar to the Norwegian model, the UK applies a time to the uplifted value rather than an indefinite carry forward.

levy factor increases up to a maximum of 50% (imposed when the relative levy factor is 2.3).

<sup>122</sup> See <https://www.gov.uk/oil-and-gas-taxation> (17.12.2013).

## **Australia**

Australia levies a Petroleum Resource Rent Tax on offshore projects. This is at a rate of 40%. Under this mechanism general expenditure is uplifted by the LTBR plus 5%; however, certain exploration and rehabilitation expenditures are uplifted by LTBR plus 15%. In Australia, the PRRT is deductible for CIT, whereas in the UK and Norway the RRT is a supplementary tax.

There are some parallels to be drawn between DSM and petroleum operations. Nevertheless, it may very well be commodity price fluctuations in the mining sector that reduces the appeal of RRTs.

### *RRTs – concluding remarks*

The economic theory behind RRTs is inherently logical provided an investor is indifferent to levels of taxation beyond their project rate of return. But is that realistic? Many are pushing RRTs as a solution to windfall profits; but many are pushing against RRTs. Take Kazakhstan. The top level of taxation after a 70% return on costs is 60%. Is that a *fair share* at that level of return?

Setting the uplift factors is not an easy proposition. Should this be at a risk-free rate, a risk-free plus risk premium to reflect a contractor's rate of return? It has been suggested that mining companies (at least historically) use a 12.5% real after-tax discount rate or rate of return for project evaluation.<sup>123</sup> Setting a rate higher

<sup>123</sup> IMF *Philippines: Reform of the Fiscal Regime for Mining and Petroleum*, IMF Country Report no. 12/219, August 2012 at 38. This rate was taken from a 1995 publication. However, given the additional risk factors perceived by mining companies in the last decade, this may have moved upwards.

than this may result in a concept known as “gold-plating”. This is where an operator will over-invest in a project as the uplift factor is higher than the internal rate of return. This is one of the reasons that the New Zealand government discounted adopting a RRT model (the Australian RRT experience must have influenced this decision too). That said, ring-fencing may prevent this type of behaviour.

There is no doubt that a RRT is no more complex to administer than a normal CIT regime. It is however its design that is problematic together with a proper understanding of the economic behaviour of mining operators.

Should the discount rate be an enterprise's collective discount rate, a specific project discount rate, the risk free government rate (e.g. a 10 year long term bond rate) – or a rate which is simply determined by consultation as being fair? But setting an Area-wide discount rate will favour some and perhaps penalise others – that is, could this solution in effect become discriminatory and non-uniform in its application?

### *Should the ISA adopt a RRT model?*

This is not an easy question to answer. In a current climate they seem to serve little purpose compared to a fair share under an additional profit tax – perhaps progressively taxed similar to a Chilean model. But from certain quarters, they seem to be being pushed as a solution for developing States. Given their unpredictable nature (and that a general feature in designing a

regime should be some predictability in revenue flows) they appear to fail the first hurdle.

Economic modelling and analysis will assist the decision making process enormously. But it should be remembered that even if this will be imperfect. Price volatility and administrative imperfections (the capacity to capture revenue) will impact the results in practice.

#### *A safety valve?*

Though much work and analysis is often undertaken in designing and implementing fiscal models, it is rare that the fiscal effects over the life of a mine are fully considered at the end of a mining project. Distortions do arise in current mining regimes and perhaps these multiply down the mining cycle. While consideration should be given to any appropriate safety valve mechanism during the course of the mining cycle, is there such a mechanism that should be applied at a mine closure? A mechanism that captures “excessive” economic rents generated during the mining project? Naturally, the reverse scenario is there may be demand by investors for the recovery of normal losses.

The following Principle has been extracted from *Australia’s Future Tax System, Report to the Treasurer*,<sup>124</sup> this principle remains valid for the ISA regime and trade-off discussions:

<sup>124</sup> Commonwealth of Australia Australia’s Future Tax System, Report to the Treasurer (2010) at 225.

“For non-renewable resources that are *expected to generate significant amounts of economic rent*, a rent-based tax is the most suitable charging mechanism, as the potential economic efficiency and revenue gains are likely to outweigh the higher administration and compliance costs of this tax compared with output-based royalties and income-based taxes.

For non-renewable resources *expected to generate low rent* and where the administration and compliance costs are likely to outweigh the potential efficiency and revenue gains from a rent-based tax, output-based royalties may be an appropriate charging mechanism”.

RRT models have much appeal from a theoretical viewpoint. However, in the mining sector there is little evidence to date of their ability to generate high revenues.

- Their design is difficult aimed at “true” rents;
- Difficulty in determining tax rates and the appropriate discount / return rates;
- Possibility for manipulation / tax avoidance as complexity increases (though the same is true for a normal CIT base);
- That said, designing progressive tax models at incremental operating margins and tax bands is also challenging.

## ***Other considerations***

Though noted in other areas of this WP, the following points should also be highlighted:

- **Ring fencing:** it is becoming increasingly common for mining projects (contract / title areas) to be ring-fenced. In the context of the Area this seems reasonable given the expanse of contract areas;
- **Exploration costs, development costs:** if a profit-share model is adopted, consideration will need to be given to the treatment of these costs for the purposes of determining the payment calculation base. It would be normal practice to deduct 100% of exploration costs and to depreciate development costs over +-10 years. Equally, what of brought forward exploration spend: how will this be allocated or apportioned to contract areas?
- **Losses:** how will losses be treated? Regimes vary but it is not untypical to see loss carry forwards restricted to 8-10 years. That said, this may be problematic where there is a ring fencing mechanism;
- **Commercial production:** much, at least in financial terms, is driven by the concept of commercial production. It is often a trigger for royalty payments and for deducting capitalised costs etc. But how much of this is driven by financial reporting leading to unnecessary complexity. In the context of the DSM regime there will be a period of test mining. But is there merit in reconsidering the relevance of defining CP for DSM? It seems

that this may be a subjective call unless pre-determined output, for example, is agreed.

- **“The system should not be complicated”:** given the trend toward profitability-based, profit / rent share models, this drives a degree of complexity in administration and potentially additional costs (the trade-off debate). Consequently, consideration must be given as to where administrative time and complexity can be reduced.

The following is an initial list of some features which can potentially make any payment system less complicated. It should be remembered that a purely simple system will not necessarily produce optimal (best) revenues for the ISA:

- **One scheme applies to all**
  - No individual agreements / deals – would be discriminatory in any case
- **Mining code & guidelines**
- Clear mining code regulations
- Clear and concise supporting guidelines and instructions including worked examples. Specifically valuation & valuation points.
- **Royalty rates**
- Apply the royalty rate(s) across all minerals – do not apply different royalty rates to different mineral categories;

- **Returns & return periods**
  - Electronic submission of returns (excel-based) in standard format;
  - On an annualised basis allowing a reasonable time for the completion and auditing / sign-off of financial statements. More frequent return periods will involve adjustments in subsequent returns;
  - Payment: once a year or payment on account during year. Latter adds complexity (e.g. if deferral requested) but is good practice;
  - Payment: one single preferred currency
- **Finance / interest costs**
  - Avoid wherever possible in tax base calculation. Complicates transfer pricing issues;
  - Some additional profit regimes impact before interest so there are precedents for this.
- **Web-based training sessions**
  - Undertake online training sessions for contractors
- **Clear financial reporting structure – standard chart of accounts**

### ***Case Studies and Examples***

To complete this section there follows a number of “case studies”. These take a high level look at a number of models in place currently from South Africa’s progressive royalty structure to Kazakhstan’s excess profits tax. Perhaps from these models an appropriate model can be devised or at least best practice and / or

best elements taken from each model through a discussion process. Together with drawing out the underlying issues.

The first example presents the original LOSC model for interest and comparison.

## Case study: Original LOSC – Annex III, article 13(4)-10 (now deleted)

### Contractor choice:

- (a) Production charge only or (b) production charge & share of net proceeds
- (a) Production charge
  - From CP date
  - Base = average market price of metals during year
  - 5% - years 1-10
  - 12% - years 11 to end of CP
- (b) Production charge & ISA share
  - 1<sup>st</sup> period CP – 2% production charge on market value
  - 2<sup>nd</sup> period CP – 4% (unless ROI < 15%, then 2%)
  - ISA share of net proceeds (**ROI = Return on investment**)
    - 1<sup>st</sup> period CP
      - ROI-0% < 10% - 35% share
      - ROI-10% < 20% - 42.5% share
      - ROI->20% - 50% share
    - 2<sup>nd</sup> period CP
      - ROI brackets as above
      - Rates: 40%, 50%, 70%
  - 1<sup>st</sup> period CP / 2<sup>nd</sup> period CP
    - 1<sup>st</sup> period: 1<sup>st</sup> period of CP; ends in year of payout; 2<sup>nd</sup> year CP then starts;
    - Payout =
      - Net development costs each year (gross proceeds less operating costs less development costs) + 10% until a positive cash surplus
  - **Contractor's Development Costs** = all pre-production, exploration and development expenses including all capex pre-CP and expenditures of similar nature post CP, net of capital asset disposals
  - For calculating ISA net share:
    - **Contractors Net Proceeds**= gross proceeds less operating costs less development costs (**amortised**) (over 10 years – i.e. no 100%)

- ROI =  $\frac{\text{Contractors net proceeds in year}}{\text{Contractor's development cost (cum)}}$
- Then:
  - Apply table of incremental ROI and ISA share percentages to Contractor's net proceeds

### Arm's length provision

**No interest deduction unless ISA approved debt: equity ratio / reasonable interest**

**No deduction for CIT or similar payments by Contractor**

**Operating losses:** 2 year c/fwd / 2 year c/back

**Ring fenced to contract area.**

## Analysis

The model presented by the 1982 Convention is a hybrid model incorporating a minimum royalty, a share of normal profit and following payout of investment costs (with an uplift) a share in economic rents.

### Pros

- The royalty rate remains within the range of royalty rates
- The application of the rate to a market value avoids value disputes (a 4% royalty may be at the higher end if levied on market value)
- The model ring fences to the mining contract area – best practice
- The model provides a reasonable depreciation rate for development costs (though some assets may depreciate faster as great depths)

### Cons

- Given the model was adopted in 1982, the ISA shares are perhaps on the high side as CIT rates for example have reduced dramatically since that time – the second period “resource rents” may not be unreasonable following the impact of the uplift
- Interest deduction: there may be an element of double counting here given the uplift factor
- Commercial production: this can be subjective as to when CP commences

### **Analysis – LOSC (continued)**

- The ROI calculation uses “contractors net proceeds” for the year; a R-factor (payback ratio) rent tax would use cumulative net proceeds as a ratio of cumulative outlays
- Losses carried forward time limit compared to a range is low; typically this would be at least 8-10 years
- As with all profit based models, this model remains exposed to transfer pricing issues

### **Remarks**

The biggest challenge on a rent based model is the uplift factor and whether this should be at a risk free rate (government) or industry risk-free + risk premium rate. As a risk free rate, the 10% applied in the LOSC model is relatively high. Nevertheless, the model then presents an upside to share in greater percentage of rents.

## Case study: Australia – Northern Territory

**Corporate tax rate:** 30% **Royalty:** 20% **MRRT:** 22.5% **Cumulative:** 44.0% (ignoring MRRT)

- Base calculation as follows for accounting profit:
  - + Gross realised revenue
  - Less: operating costs
  - Less: capital recognition deduction (CRD)
  - Less: eligible exploration expenditure (EEE)
  - Less: additional deductions as approved
  - Less: negative net value carried forward
  - = Result at 18%
- Rehabilitation costs: deducted as incurred.
- Gross revenue: generally FOB arm's length price
- Operating costs: incurred in relation to production unit, reasonable and directly attributable
- Pre-production expenses up to 4 years prior to CP allowable
- No deduction for interest and depreciation
- No deduction for forex – related losses
- CRD
  - Applies to all royalty payers;
  - Interest: 2% above 10-year bond rate (4% + 2% = 6%)
  - Applied to eligible capital expenditure
  - Time limited by period over which depreciation is allowed for CIT purposes: 4 years – 3 years CRD; 4-10 years, 5 years CRD; over 10 years, 10 years CRD
- EEE: no capital purchase costs allowed / 25% restriction at pre-EEE deduction base.

**Exemption:** first A\$50 000

**Arm's length rules in Regulations.**

**Reporting:** annual return / payments six-monthly

**Ring fencing:** calculation by individual project.

**Royalty deductible for CIT.**

## Analysis

The NT mining sector is dominated by manganese ore mining (A\$1 134m 2009/10) with zinc / lead concentrates being about half of this. The federal MRRT is applicable to iron ore and coal only.

### Pros

- The mechanism clearly recognises the “ability to pay” and appears more economically efficient;
- The base follows best practice principles in terms of the treatment of exploration expenditure;
- Any transfer pricing issue over interest / finance costs is removed together with depreciation and amortisation rates. Substituted by a CRD;
- No deduction for hedging or other forex-related losses – these are business decisions unconnected with the value of the resource;
- EEE is capped:

### Cons

- It is a profit-based system and consequently requires higher administrative input but this is unavoidable;
- Still needs a basic depreciation schedule based on CIT model.



## Case study: Alberta

**Federal tax rate:** 15% **Province:** 10.0% **Royalty:** 1% pre-payout , 12% post payout **Cumulative:** 32.8%

### Pre-payout

- 1% mine mouth revenue:
  - Gross revenue
  - Less: costs incurred between mine mouth and point of sale; and
  - Less: an allowance for capital expenditures

### Post payout

- Greater of above or 12% of net revenues:
  - Gross revenue
  - Less: allowable exploration and development costs
  - Less: allowable recovering costs;
  - Less: allowable transportation & disposal costs;
  - Less: allowance in respect of capital expenditure
- **Payout is determined as:**
  - Cumulative gross revenue from month of 1<sup>st</sup> sales
  - =
  - Aggregate of costs and allowances claimed for:
  - Exploration; development; recovering, processing, transportation or disposition of the metallic mineral.

**Royalty amounts deductible for federal and provincial purposes.**

## Analysis

### Pros

- Provides for a minimum royalty flow but at a low level of 1% (and after capex allowances)
- From an operator's perspective, this mechanism allows for the recovery of potentially significant initial investment
- No discussion over uplift rates – simply historic costs

### Cons

- Depending of levels of investment, it is likely that the post payout tier will not kick in for a period of years.

### Case study: British Columbia

**Federal tax rate:** 15% **Province:** 11% **Mining tax:** 2 tier: 2% on net current proceeds and 13% on next revenues **Cumulative:** 35.6%

- 2% net current proceeds:
  - Gross revenue
  - Less: operating expenses
  - Less: contributions to reclamation fund
  - 2% tax carried forward and uplifted at 125% federal bank rate until offset against net revenue tax
  
- 13% net revenue tax:
  - Net current proceeds
  - Less: capital costs
  - Less: exploration costs
  - Less: pre-production development costs
  - Less: **investment allowance**
  - = result
  - If negative, added to Cumulative Expenditure Account and carried forward
  
- **1<sup>st</sup> tier tax (2%) is credited against 2<sup>nd</sup> tier tax**
- **Mines commencing CP before 1 January 2016**, uplift of 133% on capital costs added to CEA
- **Investment allowance:** 125% of federal bank rate – notional interest
- Profits / losses are **ring fenced**.

### Analysis

The 13% net revenue tax is effectively a RRT model. It provides for the deduction of all key cost and expenses, including capital costs – together with uplift.

#### Pros

- A minimal flow is provided for.
- Mining project or contract areas are ring-fenced
- The uplifted amount (effectively 1.56%) is minimal. Consequently it is unlikely to delay revenues unduly

#### Cons

- The minimum 2% net current proceeds tax is subject to a significant number of deductions thus reducing early revenues.

## Case study: Chile

**Corporate income tax rate: First category tax** 18.5% (35% remittance tax – credit first category tax) **Specific Tax on Mining:** 5%-34.5% (progressive)

### SMT

- **Operating profit margin ratio** =  $\frac{\text{Operating Income}}{\text{Mining Operation Revenue}} \times 100$
- Mining operation revenue = net sales revenue
- Operating income = Mining Operation Revenue less operating costs and other deductions as defined
- **The effective tax rate is between 5% and 14% based on a look up table. This rate is then applied to the taxable base. For example:**
  - 0% to 35% mine operating margin – 5% effective tax rate
  - Between 50% and 50.1% margin – 15.5% tax; effective rate applied – 6.67%
  - > 85% - 14% effective tax rate applied
- **SMT is deductible for CIT purposes.**

## Analysis

The Specific Tax on Mining activities is applicable to copper producers. The rates shown opposite apply to those operators whose annual sales value exceeds 50 000 metric tons of fine copper. Those between 12 000 and 50 000 metric tons pay 0.5% to 4.5% on Taxable Mining Income (effective rates 0.04-1.93%); those below 12 000 metric tons are exempt.

**This SMT needs to be modelled as its progressive nature may be of appeal in distributing a fair share.**

**Regulations need technical translation as deductions / base are fundamental to the calculation.**

Despite the numerous bands of effective tax rates, a 7 page document produced by the Chilean Authorities removes the hard work in determining the effective tax rate and amount payable.

The Specific Tax on Mining was generally well received by the mining operators and a number of them agreed to implement the new tax voluntarily despite having tax stability agreements in place. Though the Chilean government agreed to extend these agreements by 6 years.

As an additional profit tax in respect of copper only, the effective rate at the highest margin is 14%. This tax certainly appears more progressive than many other mechanisms.

Naturally, this must be balanced against a normal tax rate of 35% where profits are fully distributed by a company to an overseas parent.

Finally, Chilean law also requires a material payout of pre-tax earnings to employees.

## Case study: Cook Islands

**Corporate income tax rate:** 20% **Royalty:** 3% FOB export value (gross value) **Additional profits tax:** 25% **Cumulative:** 40.15%

### CIT:

- Exploration expenditure (excluding plant and machinery, equipment & property) – 100% year incurred;
- Development expenditure (excluding P&M, equipment, property) deduct SL lesser of life of operations and 10 years (10%);
- Environmental fund (managed jointly by contractor & Seabed Minerals Authority): deduct contributions as incurred (terms of fund?);
- Profits / losses are **ring fenced** in title area. Losses at end of life can be transferred to another title area.

### APT

- 25% on positive cash balance as follows:
  - **+ CIT taxable income base**
  - Less: **total capital expenditure**
  - Less: **development expenditure**
  - Less: tax paid or payable on assessable income\*
  - Less: **negative balance brought forward from previous year\*\***
  - Add: **depreciation for P&M etc and development expenditure**
  - Add: **interest deducted;**
  - Add: deduction for financial instruments / forex hedges
  - Add: excess CIT losses
  - = Positive or negative cash balance
- **\*CIT** deductible for **APT**
- **\*\*Uplifted** by 120%. Repeated until cash balance is positive

### Payable in two instalments

**Arm's length - general rule in Act.**

**Thin capitalisation ratio:** 1.5:1 (excess interest denied)

**Royalty deductible for CIT.**

## Analysis

The Cook Islands adopted an RRT-type model in its Income Tax Amendment Act 2014. Its application includes the territorial sea and EEZ of the Cook Islands.

Tonga is also introducing a mining additional profits tax on very similar terms and rates (the debt: equity ratio is higher at 2:1).

### Pros

- A relatively simple RRT model when compared to Australia's MRRT;
- Uses the CIT base as the starting point with a few adjustments;
- Reasonable treatment for exploration expenditure and development expenditure – in line with international norms;
- Title or contract areas are ring-fenced.

### Cons

- The uplift factor is untried and untested. It is an attempt to approximate a rate of return over and above which any economic rent is taxed;
- There is no time limit applied to the uplift. See for example Norway and the UK where an uplift is restricted in time;
- The model has yet to be tried and tested. **APT** revenues less certain than **CIT** revenues due to deductions and uplift amount;
- CIT base still needs auditing from a transfer pricing perspective (revenue, costs and interest charges). Also, asset categories require allocated depreciation rates.

### Remark

A RRT model is intended to permit the recovery of all expenditures and a predefined return target (in the above case 20%). However, given the principle here is for government to take a "high" share in economic rents beyond this point (for the risk taken) 25% seems low. That said, the government is already sharing in 20% "normal profit".

## Case study: Kazakhstan

**Federal tax rate:** 20% **Mineral extraction tax:** 2.5% - 18.5% **Excess profits tax:** 0-60%

- **Mineral extraction tax**
  - Based on average exchange price of extracted minerals:
  - Copper – 5.7%; Zinc – 7%; gold/silver – 5%; nickel – 6%; manganese – 2.5%.
- **Excess profits tax**
  - The EPT is progressive (R-factor) and applies to both minerals and oil & gas regimes
  - It applies progressive rates of tax on a portion of net income that exceeds 25% of deductions (ratio of aggregate annual income to deductions)
    - less than or equal to 1.25 – 0%
    - from 1.25 to 1.3 the portion of net income corresponding to the value from 1.25 to 1.3 – 10%
    - 1.3 to 1.4 – 20% + amount of tax at 10%
    - 1.4 to 1.5 – 30% + amount of tax at 10 & 20%
    - 1.5 to 1.6 – 40% + amount of tax at 10, 20 & 30%
    - 1.6 to 1.7 – 50% + amount of tax at 10-40%
    - Above 1.7 – 60% + amount of tax at 10-50%
  - The expenditure allowed is the same as for the CIT base plus accelerated depreciation deductions for capex
- The **EPT** is an incremental tax and is not deductible for CIT purposes.
- **Ring-fencing:** contracts are ring fenced. The boundary point is after extraction and initial processing.

## Analysis

The country introduced a new tax code in 2009. This reduced the CIT rate substantially from 30% to 20%. The minerals extraction tax was the main tax introduced to compensate for the reduction in the CIT rate.

Interestingly, the regime provides for a **commercial discovery bonus** which is equivalent to 0.1% of the value of proven reserves.

### Pros

- A high upfront flow is possible given the royalty rates and calculation base; the use of exchange / international pricing avoids transfer pricing issues
- Mining project or contract areas are ring-fenced
- Complementary treatment of EPT under petroleum and mining regimes

### Cons

- The royalty rates (except for manganese) are at the higher end of the range of royalty rates not least as they are based on reference prices
- From a pure RRT perspective there appears to be no uplift on expenditure

## Case study: Mongolia

**Corporate income tax rate:** 25% **Royalty:** 5% total sales value (international market pricing) **Royalty surtax:** varies; lower on metal product

### Royalty surtax:

- **Copper** (tonne)
  - Ore: \$0-5000 – 0%; \$5000-6000 (22%); \$6000-7000 (24%); 7000-8000 (26%); 8000-9000 (28%); 9000 and above (30%). Royalty surtax for concentrate is at 50% of ore rates. For product, rates are 0, 1, 2, 3, 4 and 5% respectively
  - So, at a current price of US\$7 095.00, copper concentrate would attract a royalty surtax of 13%.
- **Zinc** (tonne)
  - Ore: \$0-1500 (0%); \$1500-2000 (1%); \$2000-2500 (2%); 2500-3000 (3%); 3000-3500 (4%); 3500 and above (5%). Royalty surtax for concentrate 0, 0.8, 1.6, 2.4, 3.2 and 4% respectively. Royalty surtax for product is at 50% of concentrate rates.
- **Rare earth elements** (Kg)
  - Ore: \$0-10 - 0%; \$10-20 - 1%; \$20 - 30 -2%; 30-40 (3%); 40-50 - 4%; 50 and above (5%). Royalty surtax for concentrate 0, 0.9, 1.8, 2.7, 3.6 and 4.5% respectively.

**Royalty deductible for CIT.**

## Analysis

The royalty surtax is principally aimed to encourage local beneficiation.

### Pros

- Clear reference to international pricing.

### Cons

- Price brackets are not indexed for inflation;
- As a royalty mechanism it is not progressive. It does not take account of the costs of production nor arguably does it capture optimal revenues during price spikes as a rent theoretically would.

## Case study: New Zealand

**Corporate tax rate:** 28% **Royalty:** higher of ad valorem royalty of 2% net sales and an accounting profits royalty of 10% accounting profits.

**Cumulative:** 38%.

- Calculation as follows for accounting profits:
  - Net sales revenues (same as for 2% ad valorem)
  - Less: pre-production/exploration costs (deduct value of minerals)
  - Less: development costs
  - Less: production costs
  - Less: indirect costs (e.g. general admin directly related)
  - Less: restoration costs incurred
  - Less: depreciation
  - Add: revenue from tangible asset sales
  - Less: operating losses carried forward
  - = Result at 10% or loss c/fwd
- Final accounting profits:
  - Determine ongoing monitoring costs, unclaimed restoration costs less capital proceeds then divide over each reporting period of life of mining permit.

### Arm's length rules in Regulations.

**Reporting:** annual return / payments (detailed contents of return in regulations)

**Ring fencing** as calculation by mining permit and losses must be carried forward i.e. not available for offset elsewhere.

**Royalty deductible for CIT.**

## Analysis

New Zealand undertook a review of its Crown Minerals Act in 1991. The government decided not to pursue a resource-rent royalty given their administrative complexity. Clear and concise regulations covering point of valuation, categories of expenditure, net backs and net forwards to calculate net sales revenues, exclusion of hedging gains and losses.

Defines a maximum area over which exploration costs can be drawn. The original proposals included a clawback of exploration costs but this appears not to have been adopted.

Point of valuation: determined by Minister at time of granting permit. Option for ISA where "complicated" downstream processing? Would necessitate individual agreements and royalty rates – potentially discriminatory.

### Pros

- The NZ mechanism is relatively straightforward and with clearly defined and concise regulations and legislation it presents a workable mechanism;
- It also provides a mechanism for treating for the final accounting period;
- It ignores interest costs and there is no deduction for CIT.

### Cons

- The model is accounting / accruals based rather than a cash flow model. That said, the APT is not attempting to be a RRT charge;
- There is additional administrative complexity in terms of providing depreciation rates;
- The model is still subject to transfer pricing manipulation – but any profit or rent-based will suffer from this.

### Case example: Peru

**Corporate income tax rate:** 30% **2-tier:** Mining royalty: 1%-12% and Special Mining Tax: 2% to 8.4% **Cumulative:** 44.28%

#### Mining royalty:

- Operating profit = sales less cost of sales
- Cost of sales is according to accounting rules
- Exploration spend is amortised over the life of a mine
- Operating margin % then drives mining royalty (this is an incremental calculation at each level of operating margin)
  - 0% to 10% margin - 1.0% x operating profit in quarter
  - 10% to 15% - 1.75%
  - 20% -25% - 3.25%
  - 25%-30% - 4.00%
  - .....75% to 80% - 11.50%
  - More than 80% - 12%

#### Special mining tax:

- The base is calculated in a similar way to the royalty base
- Certain deductions are not however allowed
- The rates 2.0%-8.4% are then applied incrementally to
- **Both royalty and SMT are deductible for CIT**

### Analysis

Peru replaced its royalty mechanism based on gross mineral sales in 2011: 1% on the first US\$60m of sales, 2% next US\$60m and 3% greater than \$120m.

The tax was well received – given its progressive nature.

#### Pros

- The progressive nature of this model like Chile is appealing under progressivity best practice.
- Given the nature of the royalty calculation a minimum level of 1% sales will always be payable

**Regulations need technical translation as deductions / base are fundamental to the calculation. That said, it appears that the base is calculated without reference to accelerated depreciation but tax rates are modest.**



### Case study: Quebec – new proposed regime

**Federal tax rate:** 15% **Province:** 11.9% **Minimum mining tax / mining tax on profit:** greater of 1%/4% output value and 16%-28% on profit **Effective:** 38.6% (low margin) to 42.4% (high margin)

**Current rate:** 16%. New mechanism is effectively an additional profits tax.

#### Minimum mining tax:

- **1%** of the output value at the mine shaft head below C\$80m; **4%** on the excess value over C\$80m. Output value not less than 10% gross value of annual output (by mine).
- **Output value** = Gross value less processing, handling, transportation, general and administration expenses, depreciation and a processing allowance.

#### Mining tax on profit

- 0% - 35% profit margin – 16%
- 35% - 50% profit margin – 22%
- 50% - 100% profit margin – 28%
- Profit margin =  $\frac{\text{Operator's mining profit}}{\text{total of gross value of annual output for all the mines it operates}}$

#### Profit base

- Gross revenue less operating expenses
  - 100% CCEE & CDE deduction (CDE amended? 30%?)
  - [Additional exploration allowance abolished]
  - No interest deduction

#### Refund by Quebec government of tax losses

**"Royalty" deductible for federal and provincial tax base.**

### Analysis

#### Federal level:

- all exploration / pre-production expenses are pooled (CCEE – cumulative Canadian Exploration Expense) – 100% deduction;
- all development expenses pooled (CDE) and subject to 30% deduction of unclaimed balance
- Capital cost allowance for asset classes – generally 25% (depreciation) on pool
- [historic resource allowance of 25% of profits repealed]
- royalties and mining taxes at provincial levels are deductible from income base;
- qualifying environmental trust: deductible in year made

#### Provincial levels

- bases (taxable income) similar but some provinces provide accelerated deductions or enhanced deductions. E.g. on plant and machinery, British Columbia has a super-allowance of 133%.

#### Pros

- Provides a minimum flow of income from production. Minimum tax also subject to a floor;
- Seeks to tax at the point of extraction; minimum tax is based on a net output value after costs;
- Additional profit tax kicks in at 35% which is relatively high from an operators perspective;
- No interest deduction.

#### Cons

- Transfer pricing aspects of the mechanism.
- Administrative issues – more complex including effective netting back on minimum mining tax calculation

## Case study: South Africa

**Corporate tax rate:** 28% **Royalty:** 7% (max) **Cumulative:** 33.04%

SA adopted a mineral royalty structure in 2010. The royalty is a factor of the **gross sales value** at “**transfer**” multiplied by a sliding rate royalty rate determined by profitability. There is a minimum royalty of 0.5% and a different calculation / maximum royalty for unrefined versus refined product as follows:

- Refined:  $0.5 + \left( \frac{\text{EBIT refined minerals}}{\text{Gross sales of refined minerals} \times 12.5} \right) \times 100$
- Unrefined:  $0.5 + \left( \frac{\text{EBIT refined minerals}}{\text{Gross sales of refined minerals} \times 9.0} \right) \times 100$

The maximum rate for refined minerals is 5% and 7% for unrefined. Based on historical data, the Treasury in 2008 calculated an average of royalty of 2.7%. The royalty caps apply at relatively high net profit margins – 56.25% for refined and 58.5% unrefined.

- Transfer: disposal; export; consumption / theft.
- Gross sales: amount received or accrued during year of assessment. Transportation, handling and insurance costs are excluded;
- EBIT:
  - this is calculated after a full deduction for capital expenditure (accelerated depreciation);
  - but transportation, handling and insurance costs are excluded

**Exemptions:** gross sales < R10m per year; royalty < R100 000. **Sampling / testing:** exempt < R100 000 gross sales.

**Arm’s length & general anti-avoidance rules in Act.**

**Constants:** the fixed factor such as 12.5, was intended to ensure rates varied between 1 and 5% with a 2.4% average.

**EBIT margin:** the above formula in respect of unrefined minerals produces a royalty of 3.3% at an EBIT/gross sales level of 25% (reasonable for mining industry); the maximum royalty of 7% at an EBIT margin of 58.5% (at 70%, the royalty would be c.8.3%).

**No ring fencing.**

**Royalty deductible for CIT.**

## Analysis

The RSA royalty structure appears logical and is sensibly connected with profitability - a progressive mechanism. It has been successfully implemented in the RSA; however, there is now debate about whether it captures sufficiently additional rents and a call for a 50% rent-style tax has been made.

### Pros

- A minimum royalty value can be set (under any ISA scenario this should be higher than 0.5% to be in line with *rates of payment*;
- A higher cap can be imposed if appropriate in the formula;
- There is no complicated discussion over interest deduction (EBIT is before interest costs);
- Applies to all mineral categories – no individual mineral rates

### Cons

- Deduction of full capital expenditure, including mine development costs is generous and tends toward a RRT / income tax type model; this is not entirely appropriate for a royalty calculation – either as payment for the mineral resource or “an ability to pay”;
- Followed a long consultation process with the mining industry. Trade-offs will be inherent in the calculation methodology (original proposal was based on EBITDA, not EBIT);
- Timing of profit-related revenues delayed for several years potentially.

## ***10. Annex - Fiscal mechanisms and financial payments***

<i>Comparison of royalty rates and special mining taxes for base metals<sup>125</sup></i>			
<i>Country</i>	<i>Royalty rate</i>	<i>Royalty base</i>	<i>Amendments (last 10 years) / Comments</i>
<b>Ad valorem royalty – rate applied to a realised (invoice) value</b>			
<b>Australia - WA</b>	7.5% - (ore, crushed & screened) 5.0% - concentrates 2.5% - metal (Nickel – per tonne royalty formula)	A gross sales / invoice value less allowable deductions (transport & packaging)	<b>+ Federal RRT – see below</b>
<b>Argentina</b>	3%	Net smelter return	
<b>Bolivia</b>	2%	Gross revenues based on international prices	+ 25% surtax on net income
<b>Botswana</b>	3.0% - minerals 5.0% - precious metals	Gross market value – sales value receivable at mine gate (no deductions)	N/A
<b>Brazil</b>	2.0% - current	Mineral sales revenue less taxes levied on revenue, insurance and freight costs	
	4.0% - <b>new</b>	Gross sales	• 4.0% = max – no categories determined
<b>Congo, Democratic Republic</b>	2.0%	Gross sales less transportation, insurance and marketing	N/A

<sup>125</sup> Principally jurisdictions with significant land-based mining regimes, mining minerals similar to DSM minerals (see U.S. Geological Survey *Mineral Commodity Summaries* January 2013).

<i>Country</i>	<i>Royalty rate</i>	<i>Royalty base</i>	<i>Amendments (last 10 years) / Comments</i>
<b>Ad valorem royalty – rate applied to a realised (invoice) value</b>			
<b>Colombia</b>	5% - metallic minerals 12% - nickel	Gross sales less transportation, insurance and marketing	
<b>Congo, Republic</b>	3%	?	
<b>China</b>	0.5% - 4%	Sales revenue	<ul style="list-style-type: none"> <li>• Plus specific - RMB 10–25/ton</li> </ul>
<b>Cook Islands</b>	3%	Export value FOB (if CIF, deduct marine transport & insurance)	<ul style="list-style-type: none"> <li>• Seabed Minerals (Royalties) Regulations 2013</li> <li>• <b>+ RRT</b></li> </ul>
<b>Gabon</b>	4%-6%	Not known	
<b>Ghana</b>	5%	Sales turnover	<ul style="list-style-type: none"> <li>• Changed in 2011 from a range of 3.0-6.0%</li> </ul>
<b>Indonesia</b>	4.0% - Cu 4.0-5.0%- Ni 3.0% - Zn	Sale proceeds	
<b>Kazakhstan</b>	2.5%-7.0% royalty	Based on average exchange price of extracted minerals	<ul style="list-style-type: none"> <li>• <b>+ Excess profit tax (RRT)</b></li> </ul>
<b>Liberia</b>	3% ad valorem	FMV – FOB Liberia – no deductions	<ul style="list-style-type: none"> <li>• <b>+ Surtax (RRT)</b></li> </ul>
<b>Mali</b>	3%	Mine value less fees and expenses	<ul style="list-style-type: none"> <li>• New in 2012</li> </ul>
<b>Morocco</b>	3%	-	
<b>Mozambique</b>	3% - minerals 5% - precious	Gross sales	

<i>Country</i>	<i>Royalty rate</i>	<i>Royalty base</i>	<i>Amendments (last 10 years) / Comments</i>
<b>Ad valorem royalty – rate applied to a realised (invoice) value</b>			
<b>Papua New Guinea</b>	2% + 0.25%	Net smelter return To Mineral Resource Authority	In the case of Solwara-1, the PNG government has a 30% stake in the project.
<b>Philippines</b>	5% - mines on mineral reservations 2% - mineral excise <sup>126</sup>	Market value of gross output Market value of gross output	The Philippines regime may change through the application of a 10% charge on gross revenues to replace existing charges
<b>Russian Federation</b>	6%-8% Mineral resources extraction tax	Value of minerals extracted. Value is based on quantity and sales price (net of taxes) reduced by freight & refining costs. Where no sales in a period, the calculation is made on production costs.	
<b>South Africa</b>	0.5% (min) – 5% or 7% (max)	Gross sales less transport and insurance	Max rate refined (5%), unrefined (7%). Actual rate linked to EBIT
<b>Tanzania</b>	4%	Gross sales	
<b>Tonga</b>	3%	Export value FOB (if CIF, deduct marine transport & insurance)	
<b>Uruguay</b>	5% - Years 1-5 8% - Year 6+	Gross revenue	

<sup>126</sup> IMF recommendation that these be combined and applied inside and outside reservation areas. In view of the high rate, it was proposed that the companies be allowed a tax credit against CIT for an amount in excess of 5% plus a 10% uplift for unused credits. In addition to the above is a local business tax on extraction of 2%. This together with other similar payments pushes production based charges close to 10% of gross output.

<i>Country</i>	<i>Royalty rate</i>	<i>Royalty base</i>	<i>Amendments (last 10 years) / Comments</i>
<b>Ad valorem royalty – rate applied to a realised (invoice) value – US Severance Taxes</b>			
<b>USA - Nevada</b>	5.0% (max)	Net proceeds (gross proceeds less cost of extraction, transportation costs, marketing and delivery of mineral, fire and worker's insurance, production royalties and depreciation).	<ul style="list-style-type: none"> <li>Nevada net proceeds tax</li> </ul>
<b>USA - other</b>	2%-5%	Generally on a net proceeds / adjusted gross revenues basis	
<b>Ad valorem royalty – rate varies by metal price</b>			
<b>Australia - Queensland</b>	2.50% to 5.00% - varying in 0.02% increments) depending on average metal prices e.g. at LME / based on quarterly avg. / published table. Current: 4.32% - copper 2.74% - nickel 2.50% - cobalt 2.64% - zinc [5.00% - silver 5.00% - gold] Separate category 2.7% - manganese	A gross sales value less marine transport, insurance & processing discount (metal not recoverable)	N/A

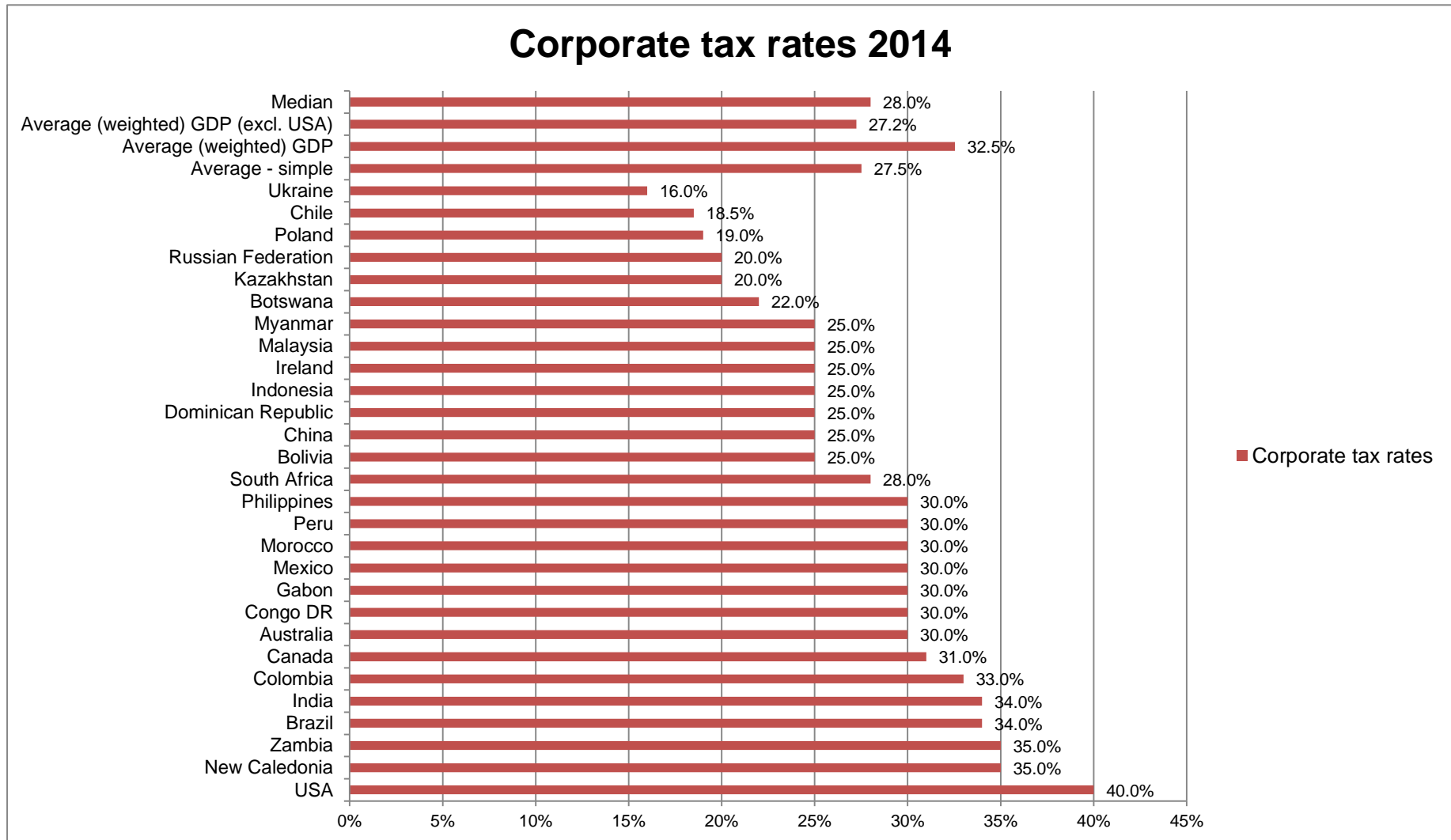
<i>Country</i>	<i>Royalty rate</i>	<i>Royalty base</i>	<i>Amendments (last 10 years) / Comments</i>
<b>India</b>	<p>4.2% Cu (2009)</p> <p>4.2% Mn Ore (2009)</p> <p>1.4% Mn concentrate (2009)</p> <p>0.12% Ni (2009)</p> <p>8.0% Zn Ore (2009)</p> <p>8.4% Zn concentrate</p>	<p>LME metal price chargeable on the contained copper metal in ore produced</p> <p>Ad valorem basis</p> <p>Ad valorem basis</p> <p>LME metal price chargeable on contained nickel metal in ore produced.</p> <p>LME metal price chargeable on contained zinc metal in ore produced</p> <p>LME metal price on chargeable on contained zinc metal in concentrate produced</p>	<ul style="list-style-type: none"> <li>• 3.2% (2004)</li> <li>• 3.0% (2004)</li> <li>• 1.0% (2004)</li> <li>• 6.6% (2004)</li> </ul>
<b>Mongolia</b>	5%	Total sales values where exported – referenced to international market prices	<ul style="list-style-type: none"> <li>• Royalty surtax (2011) – progressive price brackets; ore, concentrate and product dependent royalty. High rates to encourage local beneficiation</li> </ul>
<b>Zambia</b>	6%	Norm value = avg. monthly LME cash price per metric tonne x quantity of metal sold	<ul style="list-style-type: none"> <li>• 3% in 2011</li> </ul>



<i>Country</i>	<i>Royalty rate</i>	<i>Royalty base</i>	<i>Amendments (last 10 years) / Comments</i>
<b>Profit-based tax royalty / Additional Profit Tax</b>			
<b>Australia – Northern Territory</b>	20%	<p>“Net value”= GR less (OC + CRD + EEE + AD) where:</p> <ul style="list-style-type: none"> <li>• GR is the gross realised revenue;</li> <li>• OC is operating costs;</li> <li>• CRD is a Capital Recognition Deduction;</li> <li>• EEE is eligible exploration expenditure; and</li> <li>• AD is other deductions approved by the Minister</li> </ul>	<ul style="list-style-type: none"> <li>• Ring-fenced by project</li> <li>• First A\$50 000 is not liable to tax</li> <li>• Detailed guidelines</li> <li>• Net value losses may be carried forward with approval</li> <li>• OC must be reasonable &amp; directly attributable. Includes rehabilitation &amp; pre-production</li> <li>• No interest / depreciation expense but CRD = LTBR + 2%</li> </ul>
<b>Canada – Ontario</b>	10%	Taxable profits > \$500k (5% remote locations)	<ul style="list-style-type: none"> <li>• For 3 years, 1st \$10m of profits is exempt</li> <li>• Detailed taxable profit definition</li> <li>• Increased from 18% in 2010</li> </ul>
<b>Canada – Quebec (current)</b>	16%	Gross revenue less operating expenses and allowances directly related to the mine, including exploration & development expenses	<ul style="list-style-type: none"> <li>• Ring fenced</li> <li>• A new mining tax regime is being proposed</li> </ul>
<b>Chile</b>	5%-14%	<p>Taxable mining income</p> <p>Rate depends on operating profit margin ratio</p>	<ul style="list-style-type: none"> <li>• Adopted 2006</li> <li>• Rates apply to operators &gt; 50,000 MTFC</li> <li>• 7-page long look up table created</li> </ul>
<b>Mexico</b>	7.5% 0.5%	<p>Mining royalty on EBITDA</p> <p>Environmental erosion fee on gross revenues (precious metals only)</p>	<ul style="list-style-type: none"> <li>• Deductible for CIT</li> </ul>

<i>Country</i>	<i>Royalty rate</i>	<i>Royalty base</i>	<i>Amendments (last 10 years) / Comments</i>
<b>Peru</b>	1.00-12.0% (mineral royalty)  2.00%-8.4% (special mining tax)	Operating income – based on operating margin; minimum 1% revenue Operating income	
<b>Hybrid mineral royalty / tax</b>			
<b>Canada – British Columbia</b>	2% - net current proceeds (Min) 13% - net revenue tax	Revenue less certain operating costs Net current proceeds less capital costs, exploration costs, pre-production development costs and an investment allowance	<ul style="list-style-type: none"> <li>• Ring-fenced</li> <li>• 1<sup>st</sup> tier creditable against 2<sup>nd</sup> tier</li> <li>• A minerals tax rather than a royalty</li> </ul>
<b>Canada – Alberta</b>	1% then after payout: 12%	Mine mouth revenue = Gross revenue less transportation Net revenue deduct exploration, development, recovery, processing, and transportation costs or allowances, as well as any carry forward deductions	<ul style="list-style-type: none"> <li>• Pay greater of the two after “payout”</li> <li>• Payout: gross revenue from 1<sup>st</sup> month of sale = total of exploration &amp; development costs</li> </ul>
<b>Canada – Quebec</b> <b>(proposed)</b>	1% 4% Or 16% 22% 28%	1 <sup>st</sup> C\$80m output value mine head Output value in excess C\$80m  0% - 35% profit margin 35%-50% profit margin 50% - 100% profit margin	<ul style="list-style-type: none"> <li>• Minimum mining tax (1% or 4%) available for carry forward against Mining Tax on profit</li> <li>• Output value = gross value less operating / admin expenses, depreciation and processing allowance</li> <li>• Profit margin = <math>\frac{\text{Operators mining profit}}{\text{Total of the gross value of annual output for}}</math></li> </ul>

			all mines
			<ul style="list-style-type: none"> <li>Effective rate (incl. federal) 38.6% to 42.4% (75% margin)</li> </ul>
<i>Country</i>	<i>Rate</i>	<i>Calculation base</i>	<i>Amendments (last 10 years) / Comments</i>
<b>Rent Resource Type Taxes</b>			
<b>Australia</b>	22.5%	Resource rent	<ul style="list-style-type: none"> <li>Only applies to coal and iron ore</li> <li>Repeal in 2014?</li> </ul>
<b>Cook Islands</b>	3% royalty + 25%	Export value FOB (if CIF, deduct marine transport & insurance)  On positive cash balance. Positive taxable income less capex, CIT paid, negative cash balance b/fwd plus depreciation, finance charges, CIT loss c/fwd. Any negative cash balance b/fwd uplifted by 120%	<ul style="list-style-type: none"> <li>Seabed Minerals (Royalties) Regulations 2013</li> </ul>
<b>Kazakhstan</b>	2.5%-7.0% royalty  0%-60%	Based on average exchange price of extracted minerals  Progressive rates based on the R-factor model	
<b>Liberia (surtax)</b>	20% (+3% ad valorem royalty)	On positive net cash flow Revenues less costs; where negative uplift by 1.225 each year; c/fwd until positive net cash flow	<ul style="list-style-type: none"> <li>Kicks in where a projects pre-tax rate of return &gt; 22.5%</li> <li>Capex &amp; exploration spend 100% deduction</li> <li>Surtax deductible for CIT</li> </ul>



<sup>127</sup> Source: KPMG Corporate Tax Rates 2005-2013 <http://www.kpmg.com/global/en/services/tax/tax-tools-and-resources/pages/corporate-tax-rates-table.aspx> [31 0114].

## ***11. Environmental considerations & financial terms***

As all LTC members will appreciate, this is a highly sensitive area which is gaining exponential exposure and comment. Consequently, it merits dedicated time, discussion and development of specific regulations including the implications for Contractor financial terms.

## 1. Introduction

This section considers the relationship between environmental considerations and the financial terms applicable to the DSM regime.

Its purpose is to provide some “food for thought” for further discussion in considering the interaction between environmental considerations and ISA financial terms. Any financial aspects of the Mining Code which are related to the environment should both encourage and support good environmental behaviour while penalising poor environmental practices.

Furthermore, and from an investor perspective, sponsored Contractors (and Sponsoring States) will need to understand their environmental obligations as these will need to be quantified (or at least best estimates made) and factored into any project investment appraisal model.

Equally, some direction needs to be given as to how the environment per se / humankind will be compensated for any irreversible harm or damage – or perhaps to use the terminology contained in the PN Exploration Regulations “any

significant adverse change”.<sup>128</sup> This is a developing area in international law and something the LTC / ISA can make a major contribution toward.

## 2. Legal matters

Though this section is neither intended to provide a detailed legal analysis of the current exploration regime, nor that relating to an exploitation regime, clearly legal obligations will have a financial impact.

The ISA as a matter of policy and law (through its Mining Code) places a great emphasis on marine environmental protection (MEP). However, this is against the background of relatively poor data (save at a high level qualitative analysis) and, as yet little, in the way of identifiable environmental baselines.

Under the PN Exploration Regulations and the LOSC<sup>129</sup>, there are a number of points to highlight:

- the ISA “must ensure effective protection for the marine environment from harmful effects” of the activities in the Area and is obliged to develop rules, regulations and procedures inter alia to protect the natural resources and prevent damage to the fauna and flora;<sup>130</sup>

<sup>128</sup> Regulation 1(3)(f). That said, Annex IV, Section 16 holds a contractor “liable for the actual amount of any damage, including damage to the marine environment” arising from wrongful acts or omissions. There is no liability threshold.

<sup>129</sup> See also ISA, *Recommendations for the guidance of contractors for the assessment of the possible environmental impacts arising from exploration for polymetallic nodules in the Area*, ISBA/16/LTC/7, 2 November 2010; International Seabed Authority, Environmental Management Plan for the Clarion-Clipperton Zone, ISBA/17/LTC/7, 13 July 2011.

<sup>130</sup> Article 145(b) LOSC.

- the application of the precautionary approach by all parties;<sup>131</sup> and the application of best environmental practices / adaptive management;<sup>132</sup>
- the development of procedures by the LTC for assessing whether “activities in the Area would have serious harmful effects on vulnerable marine ecosystems;”<sup>133</sup>
- contractors to take “necessary measures” to prevent & control pollution;<sup>134</sup>
- cooperation on establishing and implementing monitoring programmes;<sup>135</sup>
- establishing environmental baselines;<sup>136</sup>
- procedures connected with emergency orders;<sup>137</sup>
- environmental impact assessments and environmental management plans (environmental monitoring);<sup>138</sup>
- [the development of APEIs];
- liability: a contractor is to be held “liable for the actual amount of *any* damage, including damage to the marine

<sup>131</sup> The SDC Advisory Opinion highlighted a number of direct obligations imposed on States including the application of the precautionary approach, the requirement for EIAs and BEPs and the need to co-operate with the ISA. The issue of due diligence is a legal one and the SDC has established an initial benchmark as to the expected standards level of marine environmental protection, albeit of a general nature which requires expanding into specific guidelines.

<sup>132</sup> These points were considered at the Fiji workshop in 2011 but further work is required to operationalise them.

<sup>133</sup> Regulation 31(4).

<sup>134</sup> Regulation 31(5).

<sup>135</sup> Regulation 31(6).

<sup>136</sup> Regulation 32(1); Annex IV, section 5

<sup>137</sup> Regulation 33.

<sup>138</sup> See ISA Technical Study: No. 10 outlining an environmental impact statement.

environment” arising from wrongful acts or omissions.<sup>139</sup> There is no liability threshold (serious, irreversible damage etc.).<sup>140</sup> It is a basic principle of international environmental law that the “polluter pays”. The polluter, being a sponsored contractor, is responsible for any remedial or restoration costs.<sup>141</sup> Equally, States may be held responsible if they have failed in their due diligence obligations. This issue was considered in much detail by the Seabed Disputes Chamber in 2010/2011 for sponsoring States “to deploy adequate means, to exercise best possible efforts, to do the utmost” to fulfil their due diligence obligations.<sup>142</sup>

There are a number of unknowns here which require further discussion. Some of them are Catch 22 given a lack of knowledge and environmental baseline data. Given this, some of the discussions may be somewhat abstract in nature at this point.

For example, what is *serious harm* or *significant adverse change*. The law provides very little guidance on this. Indeed,

<sup>139</sup> Annex IV, Section 16.

<sup>140</sup> The development of an international environmental liability regime is, at best, embryonic.

<sup>141</sup> See Principle 16 Rio Declaration on Environment and Development that “the polluter should, in principle bear the cost of pollution...”. See also Article 1 European Directive on Environmental Liability which seeks “to establish a framework of environmental liability based on the ‘polluter-pays’ principle, to prevent and remedy environmental damage”.

<sup>142</sup> Seabed Disputes Chamber of the International Tribunal for the Law of the Sea, *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area*, Advisory Opinion, List of cases: No. 17, 1 February 2011 at para 110.

aside from any legal and scientific guidance, there are also a number of ethical issues here which require input from the international community and thus require incorporating into any public consultation document.<sup>143</sup>

What are the detailed standards applicable to a due diligence approach that must be taken by all parties, particularly sponsored contractors?

And what should be preserved? International stakeholders have yet to determine the exact nature of a preservation obligation and the extent to which all or specific species of organisms should be preserved. The current legal framework favours a maximum rather than an absolute protection approach.<sup>144</sup> What are the trade-offs?

In connection with marine diamond mining and its associated environmental impact, a De Beers Report to Society states *inter alia* that “[i]n the marine environment active rehabilitation is not possible, so activities need to focus on monitoring the direct

(sediment removal) and indirect (plume) impacts of mining”.<sup>145</sup> Is this acceptable to international society?

*As a minimum, a full-blown precautionary risk management framework needs to be developed and implemented.*

Naturally, the nature of such a framework has financial implications.

### 3. *The environment and financial terms*

There are six elements that require consideration here:

1. How can the financial terms be structured to provide an incentive to encourage investment (R&D) in environmental technologies and marine scientific research?
2. The imposition of a general environmental charge or levy: its basis, calculation and subsequent application of funds?

**The Seabed Disputes Chamber recommended a trust fund be established to cover situations where environmental damage were there is no recourse to any person.**

3. The imposition of a “user fee” for the use of other natural resources?
4. What are the restorative / rehabilitative obligations of Contractors? Can these be quantified?
5. What are the specific procedural obligations of Contractors during day-to-day operations under the precautionary

<sup>143</sup> A qualitative assessment of DSM impacts is presented in ISA Technical Study No. 9.

<sup>144</sup> The strategic goal remains the conservation, being management and maintenance (or preservation), of the marine environment such that the maximum amount of genetic material, species populations and ecosystem diversity is delivered. Provided there is such representative diversity and the structure and functioning of an ecosystem is not impaired on a long term basis, the primary obligation to protect and preserve the marine environment under article 192 LOSC would appear to be fulfilled.

<sup>145</sup> De Beers, Living Up To Diamonds, Report to Society 2010 at 90, available at [http://www.debeersgroup.com/ImageVaultFiles/id\\_1000/cf\\_5/RTS\\_10\\_Full.PDF](http://www.debeersgroup.com/ImageVaultFiles/id_1000/cf_5/RTS_10_Full.PDF).



approach and best environmental practice? How are these to be operationalised? How are these to be enforced? What level of fines & penalties are appropriate for a breach of these obligations?

6. Marine environmental damage and liability: ultimately what will the liability / redress mechanism be for any “significant adverse change” or any damage?

The financial terms should reflect the legal obligations of Contractors under the exploitation regulations and contemporary environmental justice.

The table overleaf considers some of the above elements and concerns, together with some initial thoughts to stimulate further discussion.

Ultimately, a number of these points will need to be addressed in a public consultation document.

## Environmental considerations and proposed financially-related response mechanisms

Environmental consideration	Considered response / approach
<b>1. General: What are the specific environmental obligations for DSM exploitation? What will be expected (contractual) obligations of Contractors (and / or Sponsoring States)<sup>146</sup> in connection with the environment?</b>	<p>The Exploration Regulations contain a number of environmental-related obligations, not least the protection and preservation of the marine environment and the application of the precautionary approach.</p> <p>However, in respect of an exploitation code, there does not appear, as yet, to be any substantive obligations as regards the rehabilitation or restoration of the deep sea mining area.<sup>147</sup> Equally, what of infrastructure removal obligations (perhaps minimal given the mobile nature of the mining equipment – collector, riser, surface ships)?</p> <p>Whatever the specific obligations, these will have an impact on financial rates of return which will need to be factored into any economic model.</p>
<b>2. Insurance</b>	<p>Under Annex IV, Section 16.5 of the PN Exploration Regulations, contractors are required to maintain “appropriate insurance policies...in accordance with generally accepted international maritime practice”. While the environmental impacts for exploration are deemed minimal (save for any testing of equipment / small-scale mining), what will the requirements be of insurance policies for environmental damage? Again, insurance costs have financial implications. Perhaps this will be captured by general wording.</p>
<b>3. Environmental guarantee / Environmental Fund</b>	<p>What will the nature (obligation) and quantum of any environmental guarantee be? What will it need to cover – liability for damage, obligation to restore?</p> <p>Or will Contractors be expected to make a cash contribution to an Environmental Fund in place or in addition to a guarantee – cash is better. Consideration will need to be given to the fiscal treatment of any such payment. How will any fund be invested? How will income on the fund be returned / distributed? For example, the Mineral Law of Mongolia (Article 38) requires a mining licence holder to deposit 50% of its environmental protection budget (as approved from the environmental plan) into a “special” bank account.</p> <p>For / over what duration (years) will a guarantee / contribution be required? If a typical DSM operation has a life cycle of 20 years, would say a guarantee be sufficient for a further 10, 20 or 30 years post de-</p>

<sup>146</sup> Subject to their “responsibility to ensure” obligations under UNCLOS as set out in the ITLOS Advisory Opinion.

<sup>147</sup> Though the International Marine Minerals Society’s Code for Environmental Management of Marine Mining calls for suitable closure plans leaving sites and ecosystems, where possible, in a “rehabilitated condition”.

commissioning of a mining site?

What about the situation where a Contractor goes into liquidation / defaults on guarantee? If there are any restoration obligations how will these be funded?

**Any bond / guarantee needs to indexed (inflationary adjustments).**

Western Australia, for example, has implemented a Mining Rehabilitation Fund where an operator fails in their obligation to rehabilitate. The Fund is currently voluntary but from 1 July 2014 is mandatory. The Fund Contribution Rate is proposed at 1% of the Rehabilitation Liability Estimate.

#### **4. Environmental Levy / Charge**

It is considered appropriate that a general environmental levy or charge is reflected in the financial terms for DSM exploitation? The basis of such a charge, its calculation and the subsequent use of the pool of monies requires careful consideration.

Some countries do have specific environmental levies in the mining sector. For example, the Congo (Republic) has a pollution tax of 0.2% of turnover.

Use of monies?

- Trust fund;
- Cash grants for environmental R&D projects;
- Marine scientific research programmes;
- Capacity building;
- Default by mining contractors on restoration.

#### **5. User fees**

In the terrestrial environment, mining companies are heavy users of other natural resources such as groundwater. In the DSM environment the discharge of water at the initial processing stage is seen as particularly hazardous with its consequential on the water column. Though there may be a "freedom of the high seas" debate, consideration could be given to the levy of a "water fee" being measured in say X dollars per cubic metre of water discharged. Such a fee could be a progressive one and linked to a pre-determined level of water quality. Consequently, it would both act as "negative" charge on profits but by its progressive nature stimulates positive behaviour in delivering beneficial filtration techniques.

#### **6. Overlapping obligations / claims**

Is there potential for overlapping environmental obligations and possible claims on "adjacent" Is there potential for overlapping environmental obligations and possible claims on "adjacent" mining areas? Given the potential for, say sediment dispersal, how will specific environmental liabilities and / or obligations be dealt with?

**7. What if destruction of the seafloor, active SMS or fishing ground around a seamount is inevitable / unavoidable?**

Firstly, this will require assessment under an EIA / precautionary risk management process as to the probability of and level of any impact. The UNCLOS makes specific reference to “serious harm” and vulnerable marine ecosystems.....serious adverse change. But these terms have yet to be adequately defined.<sup>148</sup>

However, where harm (say irreversible) has been caused, how will this be valued and compensated for?<sup>149</sup> Could consideration be given to a biodiversity offset programme?<sup>150</sup>

**8. Penalty mechanisms<sup>151</sup>**

Give consideration to fixed penalty mechanisms for violations of procedural obligations – Contractor and / or Sponsoring State?

For example:

- Failure to follow / enforce an agreed Environmental Management Plan;
- Failure to train staff in environmental procedures;
- Failure to notify S-G under emergency orders regulation;
- Failure to develop / maintain a Precautionary Risk Management plan and process;
- Failure to comply with an order of the Council;
- Toxicity levels of water discharges above agreed levels – measurable impacts would be preferable rather than “simple” breach of procedural obligations.
- Noise pollution above agreed levels;

Penalties can be classified depending on the perceived seriousness of the DSM Regulations violation (Class I, II, III etc)

Quantum?

- Range, say US\$10 000 – 50 000 – dependent on the seriousness of the offence (its nature, the level of impact or threat to the environment, the duration of the offence and number of previous violations);
- Similar to the US’s EPA programme, a levy equal to the financial benefit or gain derived from the violation.

Would need to be an appeals process.

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<sup>148</sup> See ISA Technical Study No. 9 for qualitative analysis of impacts.

<sup>149</sup> See Barbier EB “Protect the deep sea” 505 *Nature* (2014) 475-477 at 476: US\$75m estimate to restore one hectare of trawled seabed located at the Darwin Mounds.

<sup>150</sup> See generally ICMN *Independent report on biodiversity offsets* January 2013.

<sup>151</sup> Specific to the DSM regime. Contractors and other operators will be subject to specific domestic legislation (e.g. flag State international obligations in connection with shipping pollution - MARPOL 73/78) including any additional requirements imposed by a Sponsoring State on a sponsored Contractor.

Use of fines & penalties – environmental fund / inspector regime?

Remote enforcement an issue – except where a system of inspectors is deployed.

**9. Emergency orders**

Prior to the equipment testing phase, a sponsored contractor must provide the Council with a guarantee of its financial and technical capability to comply with the emergency orders (PN Regulation 33(8)). What is the nature of this “guarantee”?

The issue of emergency orders is a complex area. Suspending or stopping mining operations will have financial repercussions for the contractor. When / at what point is there a requirement to notify?

**10. CHM / ISA obligations / responsibilities**

Aside from the possibility of a general environmental levy on operators (including the Enterprise and any joint venture arrangements), consideration should be given to retaining a proportion of the financial payments (the production or extraction charges) received by the ISA for contribution to a general environmental fund (a trust fund). It should be noted that the ISA / Enterprise on behalf of the CHM could be held liable for environmental (fault-based) damage.

**11. Implementation of international standards**

Environmental management systems implementation: ISO 14001 by Contractors?

**12. Environmental taxation**

It is recommended that a study be undertaken into the area of environmental taxation to determine current thinking, trends and best practice – and what could be appropriate / adopted in a DSM environment.

## ***12. Contractor incentives & risk mitigation***

## Incentives & risk mitigation

### Overview

As highlighted under Policy Objectives, the ISA is to attract investments and technology, to provide incentives to undertake JVs with Enterprise and developing States / stimulate technology transfer & training. Additionally, in considering *rates of payment*, countries do provide special incentives to mining companies to stimulate investment, which, by their nature reduce headline rates of payment.

The issue of environmental protection being a core element of the CHM principle also requires special consideration.

Consequently, incentives merit consideration as part of financial terms. The purpose of this section is to provide an overview of possible incentives to stimulate further discussion in this area.

*Note: Financial incentives, under the LOSC, must not subsidise Contractors leading to any artificial competitive advantage.* That said, most land-based mining regimes offer a wide variety of incentives thus reducing headline tax rates.

Some of the incentives outlined below will depend of the system of payments adopted. A profit-related system is more suited to developing incentive mechanisms than a pure royalty mechanism.

A number of mining-specific incentives have been created by countries to attract mobile investment capital; their impact on fiscal take can be dramatic.

**It should be remembered that incentives, while contemplated by the LOSC, need very careful consideration. Specific targeting is needed. Overly generous incentives will undermine the objective of optimal revenues for the ISA and the economics of DSM.<sup>152</sup> Equally, they can result in a profit shift – fiscal leakage to a home country taxing State, create distortions, add a layer of administrative complexity and support wasteful and inefficient mining practices.**

- |  |  |
|--|--|
| <p><b>1. Should any special privileges or incentives be afforded during and / or to encourage a pilot mining operation? That</b></p> | <p>Many unknowns and uncertainties in the DSM environment stem from a lack of knowledge. Conducting pilot or test mining operations would enhance stakeholder knowledge.</p> <p>Consider, in addition to enhanced deductions, perhaps a “fiscal holiday” type mechanism where for an agreed number of contractors / operators, financial obligations are reduced or eliminated for a specific period of time</p> |
|--|--|

<sup>152</sup> A review in 2010 of Australia’s natural resource taxation lead to a number of recommendations. “Recommendation 46: The resource rent tax should not provide concessions to encourage exploration or production activity at a faster rate than the commercial rate or in particular geographical areas, and should not allow deductions above acquisition costs to stimulate investment”.

is a transitional arrangement prior to commercial production?

post commercial production.

Would this be discriminatory? On the face of it perhaps. But it would support other policy objectives. Once the unknowns are better understood and costed, this could increase investments in the Area. Equally, those who have borne the initial risk of test mining should be rewarded.

## 2. Royalty relief

In periods of low commodity pricing, a royalty, in particular can have an impact on a mining operation, particularly a marginal one. Consideration could be given to granting the Council discretionary powers to defer or suspend any royalty obligation imposed under the ISA financial regime.

Clear and concise criteria would need to be developed for such a deferral or suspension which must, as a minimum not be applied in a discriminatory fashion nor give any artificial advantage to DSM miners.

Though not specifically mentioned as a mechanism, the LOSC (Annex III, Article 19) does provide for negotiations with the parties where a circumstances arise / likely arise making the contract "inequitable, impracticable or impossible to achieve objectives"; until the DSM regime "settles" and uncertainties are narrowed, it is not unrealistic that some relief may need to be granted, particularly given the cyclical nature of commodity pricing.

Clearly, such relief is more appropriate for a regressive royalty system (i.e. one based on sales) than a progressive one (linked to profitability). The latter will, to a large extent have an in-built relief mechanism.

Zambia, for example, provides (discretionary) for a deferral of royalties where the cash operating margin falls below zero.

## 3. Exploration expenditure (Incentive – contractors)

There are a number of elements which could encourage exploration expenditure under a financial regime – depending on the final terms adopted.

Accelerated<sup>153</sup> or enhanced<sup>154</sup> deduction for exploration expenditure. Argentina, for example, provides for a double (200%) tax deduction on exploration expenditure to encourage investment. This may be appropriate during the early years of DSM activities in order to encourage and promote further exploration but it needs very careful consideration, not least given the impact of any brought forward (and potentially "old") exploration costs.

Any enhanced deduction (see also R&D below) could be restricted to specific categories of expenditure, e.g.

<sup>153</sup> Accelerated depreciation allows persons to claim a larger amount of depreciation in earlier years. E.g. 60% in year 1, 20% in year 2 and 20% in year 3. This compares favourably to say a 10-year straight-line depreciation rate being 10% each year for 10 years.

<sup>154</sup> An enhanced deduction generally increases an immediate expense by a percentage uplift.



marine scientific research. But there would need to be say clear and targeted guidelines which deliver a benefit. Indeed, whether enhanced deductions over and above original investment should be available is questionable. It shifts risk – and ultimately profit.

As to accelerated depreciation, this simply defers tax cash flows to later years. It provides a benefit to a Contractor in improving cash flow in the early years.

#### 4. Exploration expenditure (risk mitigation –ISA)

Conversely, from the viewpoint of the ISA and optimal revenues, exploration costs need to be managed and “contained” with the financial regime. The following points should be noted:

- Many regimes provide for the immediate expensing of exploration costs or expensing at the point of commercial production;
- The “quality” of exploration costs varies particularly with time – remoteness from mining operations; their quantum may be significant and impact early rents;
- How will brought forward exploration be treated / apportioned in any rent mechanism?
- Operation of section 10.2(c) PN Regulations: it creates expectation of set-off but it's also restrictive....actual and direct and as part of development costs, not exploration costs per se. Also requires a certified annual statement.
- Risk mitigation:
  - “actual and direct”;
  - Time limit - Ireland has a time limit of 25 years under O&G rules on prior exploration costs;
  - Ring fencing – no offset against other contract areas;
  - In the US, taxpayers may either 1. deduct 70% (30% amortized over 5 years) or 2. capitalize 100% and amortise over 10 years (for foreign exploration costs only the latter). For 1., any amounts expensed are recaptured in gross income or deducted against depletion allowance at the production stage. Adds a layer of complexity;
  - Restricting deduction where commercial production has not commenced by an agreed date?

#### 5. Research & development

Consideration to provide “tax credits” or accelerated allowances / enhanced deductions / cash grants for specific research and development expenditure. Many countries provide R&D tax incentives to stimulate technology improvements. For the DSM regime, this could be targeted at marine engineering technology or environmental protection preservation technology.

What constitutes “R&D” would need clearly defining. And needs a prior approval mechanism from ISA LTC.

Mechanism? E.g. tax offset (deduction) – US\$100 on qualifying R&D, tax relief (deduction) is, say, US\$130 – an uplift of 30%.

Specific regimes:<sup>155</sup>

- Australia: allows a 40-45% offset (specific rules);
- China: 150% super deduction eligible expenses (specific rules: eligible expenditure e.g. site testing expenses for exploration activities & eligible industries e.g. marine engineering technology, new environmental preservation technology;
- Brazil: 160-200% super deduction on eligible expenses / 100% accelerated depreciation on R&D assets;
- India: 200% super-deduction of scientific research expenditure;
- Russian Federation: 150% super-deduction on eligible expenses (eligibility requirements);
- South Africa: 150% super-deduction of eligible expenses (pre-approval process) / accelerated depreciation on assets.

**6. Training – Capacity Development**

Tax credit mechanism or royalty rate reduction for specific training and / or capacity building initiatives.

**7. JV arrangements with the Enterprise / developing States**

Aside from other incentives outlined in this section, some form of "royalty" relief or tax holiday may be appropriate here?

**8. Stimulate technology transfer**

This area presents a challenge given the impact of the IA 1994 requiring that DSM technology shall be acquired "on fair and reasonable commercial terms and conditions on the open market".<sup>156</sup> Indeed, the whole area of technology transfer should be the subject of an independent study. Ultimately, technology dispersal will facilitate economies of scale within the DSM environment. But this is subject to intellectual property rights.

**9. Different minerals**

Though not strictly an incentive per se and very much dependent on rates of payment, there may be argument to support different minerals should be subject to differing royalty rates owing to different extraction costs & value (social and financial)? However, this adds to administrative complexity. Most multi-mineral regimes have

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<sup>155</sup> See EY 2013 *Asia-Pacific R&D incentives*

<sup>156</sup> IA 1994 Annex, Section 5.

- now reduced the number of mineral royalty categories.
- 10. Small versus large scale operations** A number of territories do provide incentives for small / junior mining companies e.g. under profit-related mechanisms a de minimis profit threshold. Should any distinction be made in a DSM context?
- 11. Stability agreements** Some territories offer fiscal stability agreements. These are not at this time considered appropriate for the DSM regime. Any amendments to financial terms, upwards or downwards, should be applied on a non-discriminatory basis.
- 12. High grading** Perhaps not particularly relevant to incentives per se, but financial terms as a whole. But are there any specific mechanisms that discourage this behaviour? Is it a particular concern under the DSM regime?

## ***Annexure – Glossary of Terms***

## Glossary of Terms – Financial & Mining<sup>157</sup>

<b>Accelerated Depreciation</b>	Method of depreciation under which taxpayers may allocate larger depreciation deductions to the first year or first few years of useful business assets, such as plant and machinery.
<b>Accounting Basis</b>	Method of calculating amounts subject to income tax and VAT. In respect of VAT, tax would be computed as a percentage levy on the excess of sales over purchases. This is a theoretical concept and no country uses it
<b>Accounting Period</b>	A period of time used by a taxpayer for the determination of tax liability.
<b>Accounting Records</b>	All documents and books used in the preparation of the tax return and all financial statements, including general ledger, subsidiary ledgers, sales slips, and invoices.
<b>Accrual Basis (Accrual Method)</b>	An accounting method whereby income and expense items are included in taxable income or expense as they are earned or incurred, rather than when they are received or paid.
<b>Ad Valorem Tax</b>	A tax on goods or property expressed as a percentage of the sales price or assessed value.
<b>Administrative Expenses</b>	Expenses that are not as easily associated with a specific function as are the direct costs of manufacturing and selling. It typically includes expenses of the headquarters office and accounting expenses.
<b>Advance Pricing Arrangement</b>	An arrangement that determines, in advance of controlled transactions, an appropriate set of criteria (e.g. method, comparables and appropriate adjustments thereto, critical assumptions as to future events) for the determination of the transfer pricing for those transactions over a fixed period of time. An advance pricing arrangement may be unilateral involving one tax administration and a

<sup>157</sup> Sources including Allen & Overy *Guide to Extractive Industries Documents – Mining: World Bank Institute Governance for Extractive Industries Programme* January 2013; AngloGold Ashanti Glossary of Terms; The EITI Glossary (<http://eiti.org/glossary>); OECD Glossary of Tax Terms (<http://www.oecd.org/ctp/glossaryoftaxterms.htm>); European Central Bank (<http://www.ecb.europa.eu/home/glossary/html/glossa.en.html>) and various IMF sources.

<b>(APA)</b>	taxpayer or multilateral involving the agreement of two or more tax administrations.
<b>Affiliated Companies</b>	General term used to describe the relationship between two or more companies linked by a common interest
<b>Amortization</b>	Process of writing off the cost of an intangible asset over its useful life.
<b>Arm's Length Principle</b>	The international standard which states that, where conditions between related enterprises are different from those between independent enterprises, profits which have accrued by reason of those conditions may be included in the profits of that enterprise and taxed accordingly.
<b>Arms' Length Transaction:</b>	A transaction where a willing (but not anxious) seller and buyer, with no prior relationship, act independently to reach an agreement. It is important for a transaction to be at arms' length to demonstrate that price and other requirements are fair and representative of transactions of a similar type in the market and are not 'friendly' transactions to, for example, avoid tax.
<b>Assay</b>	A compositional analysis to determine the amount of metal in an ore or alloy.
<b>Avoidance</b>	Generally used to describe the arrangement of a taxpayer's affairs that is intended to reduce his tax liability and that although the arrangement could be strictly legal it is usually in contradiction with the intent or objective of the law it purports to follow. Contrasted with evasion (generally illegal).
<b>Balance Sheet</b>	Statement of the financial position of a business as of a particular date. The statement will show the business's assets in one column and its liabilities and owner's equity in another column.
<b>Base Cost</b>	Term used in capital gains tax legislation to denote the cost of an asset to an owner.
<b>Base Metals</b>	In mining, base metals refer to industrial non-ferrous metals excluding precious metals. These include copper, lead, nickel and zinc.
<b>Book Value</b>	The value of individual asset as recorded in the accounting records of a taxpayer, calculated as actual cost less allowances for any depreciation.
<b>Bonus</b>	Lump sum payment made in connection with mineral rights.

<b>Capital Assets</b>	All property held for investment by a taxpayer.
<b>Capital Expenditure:</b>	The amount of money required to purchase the right to mine a deposit, to purchase the plant and equipment required to operate it, for preliminary development and for working capital. Expenditure on improvement rather than repair.
<b>Capital Gain</b>	A gain on the sale of capital asset.
<b>Capital Loss</b>	The loss from the sale of a capital asset.
<b>Capitalise</b>	To record capital outlays as additions to asset accounts, not as expenses.
<b>Carried interest</b>	Typically a State may have a carried interest in a project. It does not pay a commercial price for the interest and other parties pay for the obligations.
<b>Carryover</b>	A process by which the deductions or credits of one taxable year that cannot be used to reduce tax liability in that year are applied against a tax liability in subsequent years (carry forward) or previous years (carry back).
<b>Cash Basis (Cash Method)</b>	The accounting method which recognizes income and deductions when money is received or paid.
<b>CIF Price:</b>	The cost, insurance and freight price. The CIF Price is the price of a good delivered at the frontier of the importing country, including any insurance and freight charges incurred to that point, before the payment of any import duties or other taxes on imports or trade and transport margins within that country.
<b>Comparability Analysis</b>	Comparison of controlled transaction conditions with conditions prevailing in transactions between independent enterprises (uncontrolled transactions). Controlled and uncontrolled transactions are comparable if none of the differences between the transactions could materially affect the factor being examined in the methodology (e.g. price or margin), or if reasonably accurate adjustments can be made to eliminate the material effects of any such differences.
<b>Comparable Profit Method</b>	Under US regulations CPM is a method to determine an arm's length consideration for transfers of intangible property. If the reported operating income of the tested party is not within a certain range, an adjustment will be made. In effect this method requires a

	comparison of the operating income that results from the consideration actually charged in a controlled transfer with the operating income of similar taxpayers that are uncontrolled.
<b>Comparable Uncontrolled Price Method (CUP)</b>	A transfer pricing method that compares the price for property or services transferred in a controlled transaction to the price charged for property or services transferred in a comparable uncontrolled transaction in comparable circumstances.
<b>Comparable Uncontrolled Transaction Method (CUT)</b>	A transfer pricing methodology used in the US, which determines an arm's length royalty rate for an intangible by reference to uncontrolled transfers of comparable intangible property under comparable circumstances.
<b>Concentrate</b>	The fine, powdery output from the milling process, containing a high percentage of valuable metals.
<b>Concession:</b>	The grant of exclusive privileges by the state or a controlling authority. In the context of mining contracts, it specifically refers to a grant of land or a grant of rights to the mineral resources themselves, with the right to enter land to do so, on which the mining company carries out a commercial undertaking and pays rent and usually a royalty to the granting authority. Also known as a tenement, licence or an authority to mine.
<b>Corporate Income Tax</b>	An income tax on the income of companies.
<b>Credit, Tax</b>	Allowance of deduction from or a direct offset against the amount of tax due as opposed to an offset against income.
<b>Credit, Underlying Tax Paid</b>	In relation to a dividend, credit for underlying tax is credit for the tax levied on the profits of the company out of which the dividends have been paid. Such relief may be given either under a tax treaty or in accordance with unilateral provisions.
<b>Credit, Withholding</b>	Various kinds of income (such as dividends, interest, royalties) are taxed at source by requiring the payer to deduct tax and account for it to the tax authorities (abroad). The taxpayer recipient is entitled to credit the tax withheld at source against his final tax



<b>Tax</b>	liabilities determined by (domestic) tax law of the country in which he is resident.
<b>Customs Duties</b>	Taxes on goods imported into a country.
<b>Cut-off Grade</b>	The grade or concentration of mineral in rock where the value of the metal equals the costs of mining, processing and marketing the contained commodity. The breakeven grade.
<b>Dead Rent:</b>	Rent that must be paid on a mining lease, regardless of whether minerals are extracted.
<b>Debt / Equity Ratio</b>	Relationship of total debt of a company to its ordinary share capital. If a corporate debt is disproportionately high in comparison with its equity, the debt may be recharacterised as equity, resulting in a disallowance of the interest deduction and taxation of the funds as dividends.
<b>Deemed Interest</b>	If a member of a multinational enterprise (MNE) receives an interest-free loan from an affiliated company, the tax authorities of the lender's country may readjust the lender's profits by adding an amount equal to the interest which would have been payable on the loan had it been made at arm's length.
<b>Delivery Point:</b>	The location where the commodity will be delivered. Due to transportation costs, the chosen location will have an effect on the net cost. Thus, in order to specify a single contractual price, the delivery point is an essential detail.
<b>Depreciation</b>	An accounting technique in which the cost of an asset is allocated over its useful life.
<b>Direct Cost</b>	Cost identified with a particular transaction, such as raw materials, components and goods, wages and other processing expenses.
<b>Direct Method of Allocation of Costs</b>	Allocation method where the parent company or group service centre of a multinational enterprise providing central management and other services charges each member of the group directly for individual services rendered.
<b>Direct Taxes</b>	Direct taxes are taxes imposed on income, capital gains and net worth.
<b>Distribution</b>	A payout of cash or property from a corporation to a shareholder.

<b>Dividend</b>	A payment by a corporation to shareholders, which is taxable income of shareholders. Most corporations receive no deduction for it.
<b>Double Taxation</b>	Double taxation arises when comparable taxes are imposed in two or more states on the same taxpayer in respect of the same taxable income or capital, e.g. where income is taxable in the source country and in the country of residence of the recipient of such income.
<b>Downstream</b>	The activities in the mining industry taking place after production. E.g. transportation, refining, and marketing.
<b>Earnings Before Taxes (EBT)</b>	Profit before taxes have been paid. Sales revenue less cost of sales, operating expenses, depreciation / amortization and interest.
<b>Earnings Before Interest Tax, Depreciation and Amortisation (EBITDA)</b>	Profit before taxation, net interest, amortisation of tangible and intangible assets and impairment of tangible assets.
<b>Effective Tax Rate</b>	The rate at which a taxpayer would be taxed if his tax liability were taxed at a constant rate rather than progressively. This rate is computed by determining what percentage the taxpayer's tax liability is of his total taxable income.
<b>Environmental Tax</b>	Tax imposed for environmental reasons, e.g. to provide an incentive to reduce certain emissions to an optimal level or taxes on environmentally harmful products.
<b>Equal Treatment</b>	General principle of taxation that requires that taxpayers pay an equal amount of tax if their circumstances are equal.
<b>Estimated Assessment</b>	For income tax purposes, where the records kept, particularly by small traders, are inadequate for a precise calculation of tax due, it may be necessary for the taxable income or profits to be calculated by the tax authorities on the basis of an estimate.
<b>Exchange of</b>	Most tax treaties contain a provision under which the tax authorities of one country may request the tax authorities of the other

<b>Information</b>	country to supply information on a taxpayer. Information may only be used for tax purposes in the receiving country and it must be kept confidential, i.e. it can only be disclosed to the persons or authorities concerned with the assessment or collection of taxes covered by the treaty.
<b>Export duties</b>	Duty tax applied to the export of products.
<b>Expenses</b>	Costs that are currently deductible, as opposed to capital expenditures, which may not be currently deducted but must be depreciated or amortized over the useful life of the property.
<b>Exploration</b>	The search to identify areas that may warrant examination of areas for mineral discoveries, including geological, geophysical and topographical surveys and drilling prospecting wells. The aim of exploration is the discovery of commercial deposits.
<b>Fair Market Value</b>	The price a willing buyer would pay a willing seller in a transaction on the open market.
<b>Federal Tax</b>	In federal states, taxation may exist on two levels: taxation by the federation or confederation, and taxation by the state or provinces.
<b>Fiscal year</b>	The period which a country calculates its financial year. This may differ from the calendar year.
<b>Fixed Assets</b>	Assets that are held by an enterprise either continuously or for a comparatively long period of time, generally more than one year.
<b>FOB Price or Value</b>	The free on board price. The FOB Price means the costs associated with delivery, inspection and loading involved in putting minerals on a tanker at a seller's facilities which are included in the agreed price. The buyer pays all additional costs to transport and unload the cargo. Roughly speaking, it's the domestic price in the country of origin.
<b>Foreign Tax Relief</b>	Relief from domestic tax on income from abroad which has already suffered foreign tax. Generally speaking, two approaches are taken to foreign tax relief, i.e. the credit method or the exemption method.
<b>GAAP</b>	Generally Accepted Accounting Principles are the rules and practices required to be followed in keeping financial records and books of account.
<b>Goods &amp; Sales</b>	VAT – style multi-stage sales tax levied on purchases (and lessees). Sellers (and lessors) are generally responsible for collection.

<b>Tax</b>	
<b>Grade</b>	The amount of metal in each ton or tonne of ore, expressed as troy ounces per ton or grams per tonne for precious metals and as a percentage for other metals. A term such as cut-off grade refers to the minimum metal grade at which an ore body can be economically mined.
<b>Grandfather Clause</b>	Clause temporarily preserving legislation which exists at the time a law is modified or a (tax) treaty is concluded (or modified).
<b>Gross domestic product (GDP)</b>	A measure of economic activity, namely the value of an economy's total output of goods and services, less intermediate consumption, plus net taxes on products and imports, in a specified period. GDP can be broken down by output, expenditure or income components. The main expenditure aggregates that make up GDP are household final consumption, government final consumption, gross fixed capital formation, changes in inventories, and imports and exports of goods and services.
<b>Gross Income</b>	Gross receipts of the taxpayer derived from a trade, business or services, including interest, dividends, royalties, rentals, fees or otherwise.
<b>Gross Income, Taxes on</b>	In some countries income taxes are levied on gross income (usually at low rates) without deduction for expenses.
<b>Gross Margin</b>	Ratio of gross profits to gross revenue.
<b>Gross Profits</b>	The gross profits from a business transaction are the amount computed by deducting from the gross receipts of the transaction the allocable purchases or production costs of sales, with due adjustment for increases or decreases in inventory or stock-in-trade, but without taking account of other expenses.
<b>Gross Profit Ratio</b>	Ratio of gross profit to the sales of a business or, alternatively, to the adjusted purchases or "goods consumed" during the accounting period.
<b>Gross Profit Tax</b>	Tax imposed usually at low rates on the gross receipts of a business.

<b>Guarantee</b>	A written promise to pay another party's debt or perform their contractual obligations if that party fails to pay or perform.
<b>Head Office Expenses</b>	Where an enterprise with its head office in one country operates through an entity in another country, some expenses incurred by the head office, e.g. for general management and administrative expenses or the cost of specific services provided to the entity, may be deducted in computing the taxable profits of that entity.
<b>Hedging Transaction</b>	Transaction where a person tries to protect himself against price, interest rate or foreign exchange rate fluctuations, for example, by buying or selling commodities or currencies using derivative contracts such as forwards, futures, options and swaps.
<b>High value minerals<sup>158</sup></b>	Generally, semi-precious stones (agate, gem garnet), corundum, copper, lead, zinc, asbestos (chrysotile variety) and mica.
<b>Import duties</b>	Duty tax applied to the import of products.
<b>Imputed Interest</b>	Implied interest. In a mortgage that states an insufficient interest rate, tax law will impute a higher rate and a lower principal, which will increase taxes on the receipt of payment.
<b>Income Statement</b>	Statement showing the results of a business operation for a particular period of time. The statement will show the business's revenues and expenses.
<b>Indirect Cost</b>	Costs that cannot be identified in relation to a particular activity but that, nevertheless, are related to the direct costs (e.g. overhead expenses, costs of supporting departments, and a proper share of research and development (R&D) costs).
<b>Indirect Tax</b>	Tax imposed on certain transactions, goods or events. Examples include VAT, sales tax, excise duties, stamp duty, services tax, registration duty and transaction t
<b>Internal rate of return (IRR)</b>	A rate at which the accounting value of a security is equal to the present value of the future cash flow.

<sup>158</sup> Government of India, Ministry of Mines, Press Release, No. 3/1/2005-MVI, 17 August 2009.

<b>Instrument</b>	A legal document that records an act or agreement and provides the evidence of that act or agreement. Instruments include contracts, notes, and leases (e.g. a debt instrument).
<b>Intangible Property</b>	Property which has no physical existence but which has a value based on a legal right of the owner, e.g. goodwill, patent, trade mark, copyright, software, inventions, designs, i.e. all manner of intellectual property. Intangible property is usually transferred by way of a licensing agreement, and payments for the intangible are made in the form of royalties
<b>Intercompany Transactions</b>	Transactions between members of an affiliated group filing a consolidated return; gain or loss is deferred until a property is disposed of outside the group.
<b>Intra-Group Services</b>	Services provided by a group company to another affiliated company. The cost of general services such as management, administrative and similar services may be often allocated among the various members of the group without any profit mark-up, whereas services performed in the ordinary course of business are subject to arm's length conditions.
<b>Investment Allowance</b>	Allowance with respect to a qualifying depreciable asset. It adds a certain percentage of the asset's initial cost to the full depreciation write-off and is usually given in the year of acquisition or as soon as possible thereafter.
<b>Lien</b>	A charge against property, making it security for the payment of a debt, judgment, mortgage, or taxes.
<b>Life-of-mine (LOM)</b>	Number of years that the operation is planning to mine and treat ore, and is taken from the current mine plan.
<b>Long-term interest rates</b>	The rates of interest or the yield on interest-bearing financial assets with a relatively long period to maturity, for which the yield on government bonds with a maturity of ten years, are often used as a benchmark.
<b>Losses</b>	The term may broadly be defined as the excess of expenses over revenues for a period, or the excess of the cost of assets over the proceeds when the assets are sold or otherwise disposed of, or abandoned or destroyed.
<b>Loss Relief</b>	Most income tax laws provide some form of relief for losses incurred, either by carrying over the loss to offset it against profits in previous years (carry-back) or in future years (carry-forward) or by setting off the loss against other income of the same taxpayer in the year in which the loss was incurred.

<b>Management Fee</b>	Broadly, a fee or charge imposed for management and/or administrative services of a parent company or head office.
<b>MEDA</b>	Mining Exploration and Development Agreements. MEDAs are widely used arrangements for mineral exploration and production.
<b>Medium value minerals<sup>159</sup></b>	Generally, chromite, manganese ore, kyanite, sillimanite, vermiculite, magnesite, wollastonite, perlite, diaspore, apatite and rock phosphate, fluorite (fluorspar) and barytes.
<b>Mine-head value</b>	The value of the ore at the first point at which the ore could be stockpiled once extracted from the mine.
<b>Mine mouth</b>	The place at which minerals leave a mine.
<b>Mineral Royalties</b>	Regular payments, usually based on the volume or price of minerals extracted, made by mining enterprises to national states or other owners of mineral resources as consideration for the right to exploit particular mineral resources.
<b>Minimum tax</b>	In certain countries corporations are always liable to a certain amount of annual tax, regardless of whether they have realized a profit.
<b>MMDA</b>	The Model Mining Development Agreement. The MMDA was developed in 2010 by the International Bar Association and is intended to be a form of model mining agreement. It provides representative language for the provisions commonly found in a mining development agreement, with example clauses taken from existing agreements.
<b>Mutual Agreement Procedure</b>	A means through which tax administrations consult to resolve disputes regarding the application of double tax conventions. This procedure described and authorized by Article 25 of the OECD Model Tax Convention, can be used to eliminate double taxation that could arise from a transfer pricing adjustment.
<b>Netback royalty</b>	A royalty calculated as a percentage of a value derived by deducting from the sale value of the resource, the costs incurred between the point of sale, and a point earlier in the process.

<sup>159</sup> Government of India, Ministry of Mines, Press Release, No. 3/1/2005-MVI, 17 August 2009.

<b>Net Income</b>	Net income is gross income less deductible income-related expenses. Many countries levy income tax on this basis.
<b>Net Operating Loss</b>	Amounts by which business expenses exceed income in a tax year. A trader's operating losses constitute broadly the excess of his operating expenditure over receipts from his operations.
<b>Operating Lease</b>	Lease where the lessor is regarded as the owner of the leased asset for tax purposes. Contrast with a Finance Lease.
<b>Overhead Expenses</b>	The general expenses of a business as opposed to the direct cost of producing a good or service.
<b>Ore</b>	Rock, generally containing metallic or non-metallic minerals that can be mined and processed at a profit.
<b>Penalties</b>	Administrative penalties are imposed for tax offences, such as failure to make a timely return or payment, negligence, and making a false return or statement. They take the form of additions to the tax and are assessed as part of the tax.
<b>Pool Basis</b>	Collective basis for the purpose of depreciation of business assets falling within the same category. For example, all depreciable assets of a similar kind are effectively treated as a single asset for depreciation purposes.
<b>Precious metals and stones</b>	Includes gold, silver, diamond, ruby, sapphire and emerald.
<b>Production</b>	The commercial exploitation of minerals found in an authorised contract area, specifically the operation that brings minerals to the surface and prepares them for processing, but more generally may be considered to include all incidental activities, including the design, construction, installation, operation and maintenance of any plant and infrastructure and the mining, processing, stockpiling, transportation, export and sale of products. This phase may also be referred to as exploitation or development
<b>Production sharing</b>	Typically found in the petroleum industry where production at the surface is shared between a State and a private contractor.



<b>Progression</b>	Where the rates of income tax are usually progressive, i.e. an increasing proportion of income must be paid in tax as the income increases and at potentially higher rates.
<b>Provision (Accounting)</b>	This is amount that is calculated and deducted from accounting profits or reserves for an enterprise. Provisions are measured at the best estimate (including risks and uncertainties) of the expenditure required to settle the present obligation, and reflects the present value of expenditures required to settle the obligation where the time value of money is material.
<b>Rare earth metals</b>	A set of 17 chemical elements that are typically dispersed and not often found in concentrated and economically exploitable deposits: scandium (Sc), yttrium (Y), lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), promethium (Pm), samarium (Sm), europium (Eu), gadolinium (Gd), terbium (Tb), dysprosium (dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb), and lutetium (Lu).
<b>Recovery</b>	The percentage of valuable metal that is recovered from the ore.
<b>Refining</b>	The final stage of metal production in which impurities are removed from molten metal.
<b>Rehabilitation</b>	The process of restoring mined land to allow an appropriate post mining use.
<b>Return on investment</b>	The income that an investment produces for each unit (e.g. dollar) of capital invested. For example, if \$1 million invested produces \$100,000 the next year that is a 10 per cent return on investment.
<b>Ring Fence</b>	Theoretical enclosure established by tax legislation around certain profits, losses, transactions or groups of transactions in order to isolate them for tax purposes.
<b>Royalty</b>	a payment by the mining company to the state, representing the landowner's share of the value of minerals produced on a property. It is commonly a fractional share of the net market value.
<b>Sales Tax</b>	Tax imposed as a percentage of the price of goods (and sometimes services). The tax is generally paid by the buyer but the seller is responsible for collecting and remitting the tax to the tax authorities.
<b>Sovereign</b>	The legal doctrine that a state cannot be sued without its consent. The extent a state is immune within its own jurisdiction varies according to country, while principles of international law exempt states from legal proceedings in another country. However, if states

<b>Immunity</b>	are acting as contracting bodies, sovereign immunity may not be available in an international or foreign court. In addition, a state may elect to waive this immunity when negotiating a contract.
<b>Stabilisation</b>	In the context of mining contracts, a stabilisation clause seeks to address a party's concerns that the state may, in future, reverse policies upon which the agreement was entered into; for example, the taxation regime. The clause attempts to maintain the original contract equilibrium.
<b>Surface Rent</b>	An amount payable for use of land, based on a flat rate per unit of measurement.
<b>Tangible Property</b>	Property with a physical form, e.g. personal property, real property as distinguished from intangible property.
<b>Taxable Base</b>	The thing or amount on which the tax rate is applied, e.g. corporate income, personal income, real property.
<b>Taxable Event</b>	Term used to define an occurrence which affects the liability of a person to tax.
<b>Tax Holiday</b>	A government incentive programme that offers a tax reduction or elimination to businesses for a certain period of time. Tax holidays are commonly used by governments in developing countries to help stimulate foreign investment.
<b>Thin Capitalisation</b>	A company is said to be "thinly capitalised" when its equity capital is small in comparison to its debt capital.
<b>Transaction Taxes</b>	Tax that uses a specific type of transaction as its object, e.g. sales tax, immovable property transfer tax, etc.
<b>Transfer Pricing</b>	A transfer price is the price charged by a company for goods, services or intangible property to a subsidiary or other related company. Abusive transfer pricing occurs when income and expenses are improperly allocated for the purpose of reducing taxable income.
<b>Transfer Pricing Adjustment</b>	Adjustment made by the tax authorities after making a determination that a transfer price in a controlled transaction between associated enterprises is incorrect or where an allocation of profits fails to conform to the arm's length principle.

<b>Uplift</b>	An addition to a tax deduction for the cost of an asset or an addition to the amount of a loss carried forward.
<b>Upstream</b>	The exploration and production phases of the mining industry.
<b>Valuation point</b>	A point in the downstream process used for the purposes of assessing and calculating a value base for royalty purposes or taxing point for profit purposes.
<b>Value added tax</b>	Specific type of turnover tax levied at each stage in the production and distribution process. Although VAT ultimately bears on individual consumption of goods or services, liability for VAT is on the supplier of goods or services. VAT normally utilizes a system of tax credits to place the ultimate and real burden of the tax on the final consumer and to relieve the intermediaries of any final tax cost.
<b>Withholding Tax</b>	Tax on income imposed at source, i.e. a third party is charged with the task of deducting the tax from certain kinds of payments and remitting that amount to the government. Withholding taxes are found in practically all tax systems and are widely used in respect of dividends, interest, royalties and similar tax payments. The rates of withholding tax are frequently reduced by tax treaties.
<b>World-wide Income</b>	Criterion for the income tax liability of a resident company or individual of a certain country. In many countries a resident company or individual is subject to corporate/individual income tax on its worldwide income, subject to double taxation relief.
<b>Working Capital</b>	Funds invested in a company's cash, accounts receivable, inventory, and other current assets (gross working capital). The term usually refers to net working capital, that is, current asset minus current liabilities.
<b>Written-down Value</b>	The value of an asset which is depreciable for income tax purposes, determined by deducting from the total cost, including installation, etc. the deduction that have been made for wear and tear or depreciation in previous tax years.

## ***Annexure – useful information***

***1. International reference pricing***

***2. Types of additional, rent-style taxes***

***3. Selected recommendations from the AFTS Final Report***

***International reference pricing:***<sup>160</sup>

*“Copper:*

World copper markets are London Metal Exchange (LME) and New York Merchantile Exchange (NYMEX). The more quoted spot reference price comes from LME: the cash seller and settlement spot price for copper grade A.

*Copper Concentrate:*

The value of copper concentrate can be obtained by subtracting the treatment and refining charges (TC and RC) from the (refined) copper price. There are spot and annual TC/RC markets in Japan and a spot market in Shanghai. The annual market includes a price participation (PP) element by which smelters share part of increases in copper prices. There can be sizable differences between the prices quoted in the annual and spot markets, which suggests that the impact of imposing a uniform reference tax price to all transactions would be significant. The equilibrium in the refined copper market is the one that drives both products. The netback

from copper prices is traditionally determined in negotiations between copper concentrate producers and smelters. Transportation costs might also have to be deducted to get the price of copper concentrate. There seem to be several distortions in world markets.

*Zinc Concentrate:*

The main world reference spot price for zinc is the LME, high grade 98 percent pure zinc price, cif, UK ports. As in the case of copper, the spot cash seller and settlement price can be specifically used as the reference price of zinc. It is not easy to find references to markets for zinc TC/RC. A 2005 report on zinc markets in Asia-Pacific suggested that zinc smelters and zinc mines negotiate base TC/RC once a year, with actual TC/RC being determined by the base TC/RC plus/minus 15% of zinc-price changes from the base zinc price.

*Lead:*

LME has a 99.97 percent minimum purity lead spot price, cif for European ports. Cash seller and settlement price.

*Nickel:*

LME, primary nickel of 99.8 percent minimum purity, spot price. Cash seller and settlement price”.

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<sup>160</sup> Extracted from Sunley EM, Gottschalk J & Watson A, International Monetary Fund, Fiscal Affairs Department *Mongolia: The Fiscal Regime for Mining – A Way Forward* 22 June 2010 at Appendix 2.

**Types of additional, rent-style taxes<sup>161</sup>*****“Resource rent tax***

The RRT is a proportional tax on discounted cash flow returns to total project outlays, in excess of a predetermined percentage rate. The predetermined rate is intended to represent a “minimum” required rate of return on a new project in the mining sector. For tax calculation purposes the rate is sometimes called an “accumulation rate.” The RRT is designed as a way for the government to capture “resource rent,” meaning the surplus over all necessary capital and current costs of production including a reasonable return to the capital invested in the project. The RRT can be applied after the CIT (in which case CIT paid is treated as a cash outflow) or before (in which case RRT paid is a deductible in calculating the CIT). A RRT was recently introduced in Liberia for mining, and is also used in petroleum elsewhere (e.g., Angola, Australia and other countries).

Some suggest that the RRT is difficult to administer. However, all the numbers required for the RRT are required for the regular CIT calculation. The RRT calculations are straight

forward. A drawback of the RRT is that it does not produce revenue until the required rate of return has been earned and therefore may not produce revenue for the government if mineral prices spike and companies report high profits to their shareholders, but the project has not yet reached the threshold rate of return. However, such a price spike would bring forward the point at which the threshold would be reached and RRT would be paid.

***Resource Super Profits Tax***

Australia has recently proposed a RSPT for mining and petroleum. The RSPT has some similarities to the RRT, but with important differences. Instead of cash flow accounting (i.e., expensing of capital), the base of the RSPT would be similar to the income tax base—capital assets would be depreciated. In addition to allowing a deduction for depreciation and other costs, there would be an allowance equal to the government bond rate (around 6 percent) for undepreciated capital and any unutilized losses. Only the return in excess of the bond rate would be taxed under the RSPT. The RSPT is economically equivalent to the RRT, except it would be more likely to generate tax payments when a project earns a high rate of return in the current year even though the project has not earned the pre-determined internal rate of return.

An important additional feature of the Australian RSPT proposal is that the government would guarantee that the investor would receive the tax benefit (in effect a tax deduction) for all expenditure. This would mean for a project which failed to reach the bond rate of return, the government would make a payment to the investor equal to the accumulated balance of any losses plus bond rate interest. The government is therefore taking a significant amount of risk in the project alongside the investor, even though it does not pay its share up front. This approach, and the appropriateness of the bond rate as the accumulation rate, depends very much on the credibility of the government guarantee for the payout, and is unlikely to be workable in environments where investors perceive any material political risk; indeed it remains highly controversial in Australia and is by no means certain of being adopted without modification.

***Excess profit tax based on Payback Ratio or “R Factor”***

The tax base for an excess profit tax would be taxable income for purposes of the CIT less the income tax liability. The rate of the excess profit tax would depend on the R-Factor or Payback Ratio; namely the ratio of the company’s cumulative gross receipts to the company’s cumulative gross outlays, which will include payments of the CIT if the calculation is

<sup>161</sup> Extracted from Sunley EM, Gottschalk J & Watson A, International Monetary Fund, Fiscal Affairs Department *Mongolia: The Fiscal Regime for Mining – A Way Forward* 22 June 2010 at Appendix 3.

to be made on an after-tax basis. When the ratio is less than one, payback has not been reached; as it grows to a greater multiple of one, the excess profit tax rate increases.

The R Factor differs from the rate of return method in that it does not take explicit account of the time value of money. Whether the ratio increases quickly or slowly does not matter in the calculation, the same excess profit tax rate is still triggered.

#### *Variable income tax*

The gold mining tax regime in South Africa for many years incorporated a formula that determined the tax rate each year and was designed to impose a lower-than-average rate of tax in years of poor relative profitability offset by a higher-than-average rate of tax in years of high relative profitability. The variable income tax retains all the other features of the regular income tax, including the special capital recovery rules for investments in the mining sector; it only adjusts the tax rate. The South African system was also adapted for use in the mining tax legislation of Namibia for non-diamond mines. The variable rate in Namibia was repealed in 2002 and replaced with a flat rate of 37.5 percent (compared to the standard rate of 35 percent). A variable income tax was introduced in Botswana in 1998.

The variable income tax was initially designed to encourage the mining of low grade ores which would otherwise be uneconomic. It also has the property that a mine which proves to have a relatively low ratio of profit to revenue will bear a lower tax burden; for some investors this possibility could reduce perceived risk and thus encourage investment. If required, the formula can be designed so that, on average across the mining sector, the effect of the tax is the same as the standard rate of income tax.

#### *Bougainville additional profit tax*

The “Bougainville” additional profit tax is similar to a variable income tax, as the effective tax rate varies with the level of profitability. The level of profitability is a snap shot taken each year. It does not require measuring the internal rate of return earned on the project.

Earnings up to a threshold value are taxed at the normal rate ( $t$ ). Earnings in excess of the threshold are taxed at a higher rate ( $k$ ). The threshold is determined by multiplying the unrecovered capital cost ( $C$ ) by a required rate of return ( $x$ ). As the required rate of return is assumed to be an after-tax rate of return, the threshold is grossed up by a factor  $(1 - t)$ .<sup>52</sup> The total tax comprises two pieces, assuming pre-tax income ( $P$ ) exceeds the grossed up threshold, as follows:

$$\text{Total tax} = tCx/(1-t) + k(P - Cx/(1-t)).$$

Thus a portion of pre-tax income ( $P$ ) is taxed at the rate  $t$  and a portion is taxed at the higher rate  $k$ . Once a company has recovered all its capital costs, all pre-tax profits would be taxed at the higher rate,  $k$ . The average tax rate would increase through the life of a project, or if commodity prices rose”.

**Selected recommendations from the AFTS Final Report<sup>162</sup>**

Recommendation 45:

The current resource charging arrangements imposed on non-renewable resources by the Australian and State governments should be replaced by a uniform resource rent tax imposed and administered by the Australian government that:

(a) is levied at a rate of 40 per cent, with that rate adjusted to offset any future change in the company income tax rate from 25 per cent, to achieve a combined statutory tax rate of 55 per cent;

(b) applies to non-renewable resource (oil, gas and minerals) projects, except for lower value minerals for which it can be expected to generate no net benefits. Excepted minerals could continue to be subject to existing arrangements if appropriate;

(c) measures rents as net income less an allowance for corporate capital, with the allowance rate set at the long-term Australian government bond rate;

(d) requires a rent calculation for projects;

(e) allows losses to be carried forward with interest or transferred to other commonly owned projects, with the tax value of residual losses refunded when a project is closed; and

(f) is allowed as a deductible expense in the calculation of income tax, with loss refunds treated as assessable income.

Recommendation 46:

The resource rent tax should not provide concessions to encourage exploration or production activity at a faster rate than the commercial rate or in particular geographical areas, and should not allow deductions above acquisition costs to stimulate investment.

Recommendation 49:

The Australian and State governments should consider using a cash bidding system to allocate exploration permits. For small exploration areas, where there are unlikely to be net benefits from a cash bidding system, a first-come first-served system could be used.

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<sup>162</sup> Commonwealth of Australia *Australia's Future Tax System, Report to the Treasurer* (2010).



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## ***Annexure - Miscellaneous data***

1. Mine production – 2012
2. GDPs - 2012

## 1. Mine Production - 2012<sup>163</sup>

Copper	Country	Rank	Metric tons		
			000s	%	Cum %
	Chile	1	5,370	32.3%	32.3%
	China	2	1,500	9.0%	41.3%
	Peru	3	1,240	7.5%	48.8%
	USA	4	1,150	6.9%	55.7%
	Australia	5	970	5.8%	61.6%
	Russia	6	720	4.3%	65.9%
	Zambia	7	675	4.1%	70.0%
	Congo, DR	8	580	3.5%	73.5%
	Canada	9	530	3.2%	76.6%
	Mexico	10	500	3.0%	79.7%
	Indonesia	11	430	2.6%	82.2%
	Poland	12	430	2.6%	84.8%
	Kazakhstan	13	420	2.5%	87.4%
	Other		2,100	12.6%	100.0%
	World Total		16,615	100.0%	

<sup>163</sup> Source: U.S. Geological Survey, Mineral Commodity Summaries, January 2013



## 1. Mine Production - 2012

Manganese	Country	Rank	Metric tons		
			000s	%	Cum %
	South Africa	1	3,500	20.8%	20.8%
	Australia	2	3,400	20.2%	41.0%
	China	3	3,000	17.8%	58.8%
	Gabon	4	2,000	11.9%	70.7%
	Brazil	5	1,100	6.5%	77.2%
	India	6	810	4.8%	82.0%
	Kazakhstan	7	390	2.3%	84.3%
	Ukraine	8	310	1.8%	86.2%
	Myanmar	9	230	1.4%	87.5%
	Malaysia	10	230	1.4%	88.9%
	Mexico	11	170	1.0%	89.9%
	Other		1,700	10.1%	100.0%
	World Total		16,840	100.0%	

## 1. Mine Production - 2012

### Cobalt

Country	Rank	Metric tons	%	Cum %
Congo	1	60,000	55.0%	55.0%
China	2	7,000	6.4%	61.4%
Canada	3	6,700	6.1%	67.6%
Russia	4	6,200	5.7%	73.2%
Australia	5	4,500	4.1%	77.4%
Brazil	6	3,700	3.4%	80.8%
Cuba	7	3,700	3.4%	84.1%
New Caledonia	8	3,500	3.2%	87.4%
Zambia	9	3,000	2.7%	90.1%
Morocco	10	1,800	1.6%	91.8%
Other		9,000	8.2%	100.0%
World Total		109,100	100.0%	

*Note:* identified world cobalt resources: 15 million tons. USGS estimates 1 billion tons on the ocean floor (hypothetical / speculative).

## 1. Mine Production - 2012

Nickel	Country	Rank	Metric tons	%	Cum %
	Philippines	1	330,000	15.5%	15.5%
	Indonesia	2	320,000	15.0%	30.6%
	Russia	3	270,000	12.7%	43.3%
	Australia	4	230,000	10.8%	54.1%
	Canada	5	220,000	10.3%	64.4%
	Brazil	6	140,000	6.6%	71.0%
	New Caledonia	7	140,000	6.6%	77.6%
	China	8	91,000	4.3%	81.9%
	Colombia	9	80,000	3.8%	85.6%
	Cuba	10	72,000	3.4%	89.0%
	South Africa	11	42,000	2.0%	91.0%
	Botswana	12	26,000	1.2%	92.2%
	Dominican Republic	13	24,000	1.1%	93.3%
	Madagascar	14	22,000	1.0%	94.4%
	Other		120,000	5.6%	100.0%
	World Total		2,127,000	100.0%	

*Note:* identified land-based resources: 130 million tons (1% or greater nickel content).

## 1. Mine Production - 2012

Zinc	Country	Rank	Metric tons	%	Cum %
	China	1	4,600	35.3%	35.3%
	Australia	2	1,490	11.4%	46.7%
	Peru	3	1,270	9.7%	56.5%
	USA	4	748	5.7%	62.2%
	India	5	690	5.3%	67.5%
	Canada	6	640	4.9%	72.4%
	Mexico	7	630	4.8%	77.3%
	Bolivia	8	430	3.3%	80.5%
	Kazakhstan	9	420	3.2%	83.8%
	Ireland	10	345	2.6%	86.4%
	Other		1,770	13.6%	100.0%
	World Total		13,033	100.0%	

## 1. Mine Production - 2012

Silver	Country	Rank	Metric tons	%	Cum %
	Mexico	1	4,250	17.7%	17.7%
	China	2	3,800	15.8%	33.6%
	Peru	3	3,450	14.4%	48.0%
	Australia	4	1,900	7.9%	55.9%
	Russia	5	1,500	6.3%	62.1%
	Bolivia	6	1,300	5.4%	67.6%
	Poland	7	1,170	4.9%	72.4%
	Chile	8	1,130	4.7%	77.1%
	USA	9	1,050	4.4%	81.5%
	Canada	10	530	2.2%	83.7%
	Other		3,900	16.3%	100.0%
	World Total		23,980	100.0%	

## 2. Gross domestic product - 2012<sup>164</sup>

Country	GDP – US\$m
Australia	1,532,408
Bolivia	27,035
Botswana	14,504
Brazil	2,252,664
Canada	1,821,424
Chile	269,869
China	8,227,103
Colombia	369,606
Congo DR	17,204
Dominican Republic	59,047
Gabon	18,377
India	1,841,710
Indonesia	878,043
Ireland	210,771
Kazakhstan	203,521
Malaysia	305,033
Myanmar	N/A
Mexico	1,178,126
Morocco	95,982
New Caledonia	N/A

Country	GDP – US\$m
Peru	203,790
Philippines	250,182
Poland	489,795
Russian Federation	2,014,775
South Africa	384,313
Ukraine	176,309
USA	16,244,600
Zambia	20,678

<sup>164</sup> Source: World Bank *Gross Domestic Product 2012*