In Confidence

OFFICE OF THE MINISTER
OF ENERGY AND RESOURCES

The Chair
Cabinet Economic Growth and Infrastructure Committee

Royalties on minerals

Proposal

1 This paper seeks approval to draft regulations with revised royalty rates for new high-value mineral developments.

Executive Summary

2 A central purpose of the proposed amendments to the Crown Minerals Act 1991 is to ensure that the Crown receives a fair financial return for the development of its minerals for the benefit of New Zealand. The term "fair" is interpreted as referring to the need to balance the interests of the Crown (as the owner of Crown-owned minerals for the benefit of New Zealand) and those of mineral prospectors, explorers and miners. At present there is a view that royalties for some minerals are too low, and there is no transparency about the applicable rate for some minerals.

3 The nominal Crown take (royalties plus taxes) from mineral development in New Zealand is approximately 33 percent of accounting profits. This compares to a nominal Crown take in overseas jurisdictions which typically ranges from 37 percent to 59 percent of accounting profits, depending on the commodity and the jurisdiction.

4 On 20 February 2012, Cabinet agreed to the release of a discussion paper titled *Review of the Crown Minerals Act 1991 Regime* [CAB Min (12) 5/7]. One of the proposals in the discussion paper was a formal review of the royalty rates that apply to Tier 1[1] minerals against criteria for fairness and international competitiveness.

5 A discussion paper titled *Review of the royalty regime for minerals* was released for public consultation in October 2012.[2] This review complements the focus on natural resources through the Business Growth Agenda by ensuring that the Crown benefits from further growth of the mining sector.

6 The review of mineral royalty rates also complements separate work being led by Inland Revenue and the Treasury to remove tax concessions for specified mineral miners.[3] The tax proposals, if implemented, would tax specified mineral mining in a similar manner to other parts of the New Zealand economy. This is consistent with the broad aim of the Government's Business Growth Agenda, as making tax rules as neutral as possible promotes economic efficiency by better ensuring that scarce capital and labour is allocated to the most productive areas of the economy.

7 The review of mineral royalty rates concluded that there was scope to increase the royalty rates that apply to new high-value mineral permits.

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[1] Tier 1 minerals broadly relate to metallic minerals, coal, ironsand and all offshore minerals.
[2] http://www.med.govt.nz/sectors-industries/natural-resources/pdf-docs-library/oil-and-gas/crown-minerals-act-review/consultation-on-the-royalty-regime-for-minerals/discussion-paper.pdf.
[3] "Specified minerals" cover over fifty minerals and include gold, silver, ironsand and phosphates.

8 An estimate of the implications of the proposed changes for future royalty take can be calculated using mid-range assumptions for future mine developments. The NPV of additional royalty revenue to the Crown relative to the status quo is $194 million, or an increase of around 50%. Aggregating the more conservative P90[4] and more optimistic P10[5] outputs across each of the base case scenarios modelled results in an additional net present value to the Crown relative to the status quo of $105 million and $419 million respectively.

9 No changes are proposed for existing permit and licence holders for whom the existing royalty rates will be grandfathered. The grandfathering proposals would extend to all mining permits awarded as subsequent permits to existing exploration and prospecting permits. Any royalty changes to existing permit holders would adversely impact international perceptions of New Zealand's sovereign risk.

10 No changes are proposed for low-value mineral operations.

Background

Objectives

11 The review of mineral royalty rates has been undertaken against four objectives. These are the same as those used in the royalty review for petroleum. [6] Namely, New Zealand's royalty and fiscal regime for minerals should:

a. provide a fair return to the Crown as owner of the resource

b. be neutral and non-distortionary

c. provide appropriate risk-sharing between private investment and the Crown, and

d. be simple to administer for both the Crown and industry.

Royalty options reviewed

12 There are three broad types of royalty regimes that apply to minerals. These are:

a. **Unit-based royalty**: a unit-based royalty is a specified price applied to each unit produced. Units are typically measured in tonnes or cubic metres, depending on the commodity.

b. **Ad valorem royalty** (AVR): a value-based – or "ad valorem" - royalty is levied on the value of the mineral sold

c. **Profit-based royalty**: profit-based royalties take into account both output prices and input costs. There are two main types:

   i. **Accounting profits royalty** (APR): an accounting profit royalty assesses profit for royalty purposes primarily in financial terms, using defined accounting conventions relating to the treatment of profits, operating and capital expenditures.

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[4] P90 means there is a probability of 90 percent that the value will be met or exceeded.
[5] P10 means there is a probability of 10 percent that the value will be met or exceeded.
[6] A paper reviewing the royalty regime for petroleum was released in March 2012 (*Review of the royalty regime for petroleum: Background to the regime and options for change)*. This paper concluded that the current royalty regime for petroleum is internationally competitive and meets the objectives for an appropriate royalty regime.

ii. **Resource rent royalty**: under a resource rent approach, a project is effectively granted a royalty holiday in anticipation of relatively high governmental returns later in mine life. The payment of the resource rent is deferred until all expenditures have been recovered and the project has yielded a predefined target return expressed as an uplift rate or rate of return. A high marginal royalty is then applied to all subsequent operating revenue.

13 Unit-based royalties are not favoured because they are economically inefficient. Unit-based royalties do not take account of either the market value of the mineral resource or the costs of extraction and production.

14 Resource rent royalties are not favoured on the basis that it fails to provide a guaranteed return to the Crown at the outset of production (and therefore it fails to meet the fair financial return objective). It is also administratively complex, both for miners and the Crown.

15 This has led to value-based, profit-based or a hybrid of value and profit-based royalty options being reviewed. The following five royalty options were used in the review:

a. **AVR 1**: a one percent ad valorem royalty

b. **AVR 2**: a two percent ad valorem royalty

c. **APR**: a 10 percent accounting profit royalty. A five percent accounting profit royalty results in outcomes that are very similar to a one percent AVR.

d. **Hybrid 1**: a hybrid of a one percent AVR and a 10 percent APR

e. **Hybrid 2**: a hybrid of a two percent AVR and a 10 percent APR.

16 Higher royalty rates were not evaluated as it was judged that this would undermine New Zealand's international competitiveness, particularly when combined with potential changes to the tax rules that applied to specified mineral miners.

17 In the case of coal and gold, a materiality threshold was added. For coal, the 10 percent APR would only be payable by those coal mines with annual accounting profits of more than $5 million, while for gold the 10 percent APR would apply to those mines with annual accounting profits of more than $2 million. The purpose here is to tailor the royalty regime to a scenario where the range of future mines to which this royalty might apply is similar to the current range of producing and royalty paying coal and gold mines. Both the coal and gold sectors are characterised by a few highly profitable and productive mines and then a long tail of much smaller, less profitable mines. The materiality threshold is designed to distinguish between these two types of operations.

18 In the case of platinum group elements (PGE), ironsands, phosphates, and Seafloor Massive Sulphides (SMS), any future mine developments would have to be very large operations. Accordingly, no materiality threshold has been added.

Models used to benchmark royalty options

19 Modelling work for the review was undertaken by the Ministry of Business, Innovation and Employment, supplemented by advice from KPMG, Transfield Worley, internal data and input from industry participants.

20 The commercial viability of mining various mineral deposits was assessed using a set of discounted cash flow models that include all the relevant income and costs a mining company would expect in the course of exploring, developing and producing from a mineral deposit.

21 Models were built to test revenue shares for the Crown, the operator and the landowner across a range of royalty regimes. "Commercial viability" for a mining operation has been defined as where the operation has a positive net present value (NPV), using a discount rate of 10 percent.

22 Separate models were developed for each mineral type, because the approaches to mining each mineral and the relevant market characteristics are so different. The exceptions were gold and silver: these were modelled together because silver is a by-product of gold production.

23 The financial models are driven by a set of general assumptions (for example, exchange rates and discount rates) and a set of mineral and mine-specific assumptions (for example, commodity prices, capital and operating expenses, tax rules, and freight and decommissioning costs).

Modelling results

24 The results of the modelling included some consistent themes:

a. The **hybrid options performed best under the fair financial return objective** as they provide both a guaranteed minimum return at the outset of production and upside to the Crown in cases where the mine is highly profitable. In contrast, the pure APR option performed poorly against this objective, mainly because it fails to deliver a guaranteed minimum return to the Crown at the outset of production. Given the high capital requirements of mine development, the modelling indicated it could take several years before a pure APR royalty regime would result in a royalty payment to the Crown in some mine development scenarios.

b. The **pure APR royalty performs best against the “neutral/non-distortionary” and “appropriate risk-sharing” objectives**. However, the modelling highlighted the overwhelming importance of commodity prices, development costs and exchange rates to the overall economics of the mine. The number of additional mines under the pure APR option relative to the other royalty options was negligible across all the commodities modelled. For this reason, the “neutral/non-distortionary” objective was given a relatively low weighting.

c. The **pure AVR royalty options are simple to administer**, but they take no account of the profitability of different mining operations. While pure AVR royalties provide a guaranteed minimum return to the Crown, they provide little upside to the Crown in the case of highly profitable developments. The AVR options therefore performed relatively poorly against both the “fair financial return” and “appropriate risk-sharing” objectives.

Current rates and proposed changes

25 The "fair financial return" objective has been deemed to be more important than the other objectives. This leads to favouring a hybrid of a low ad-valorem royalty, which ensures that the Crown (for the benefit of New Zealand) always receives some return from the mining of its minerals, and an accounting profits royalty, so that the Crown shares in the benefits if a mining development proves to be particularly profitable. The Hybrid 2 royalty option performed better than the Hybrid 1 royalty option against the "fair financial return" objective and is what is being recommended.

26 The modelling work concluded that:

a. the proposed royalty rates would be internationally competitive

b. geological prospectivity, commodity prices, exchange rates and development costs are far more material to the project economics of mining than royalty rates at the proposed levels

c. the proposed royalty rates will have a negligible impact on future mine developments.

27 The current and proposed royalty rates applying to the minerals under review are set out in Annex 1. The proposed rates are:

a. 2 percent of net revenues ('ad valorem royalty' or AVR), which would be paid by the vast majority of future mines (mainly small alluvial gold mines), and which is broadly similar to current rates, or

b. 10 percent of accounting profits (APR) for larger, more profitable mines, with a materiality threshold for most minerals.

28 The vast majority of future mines would be subject to a royalty rate which is broadly similar to current rates (i.e. a revenue-based royalty of two percent of net revenues (AVR)). The largest and most profitable future mines would be subject to a 10 percent accounting profits royalty (APR).

29 In the case of underground coal gasification (UCG), there was insufficient information to undertake financial modelling. A holding royalty of a hybrid of the higher of a one percent AVR and a 10 percent APR is proposed. This royalty rate will be reviewed once the project economics of developing these minerals become clearer.

30 The proposed new royalty rates would apply to new permits only. For existing permits, licences and privileges, the current royalty rates would continue to apply.

31 The proposed hybrid royalty would mirror the hybrid royalty regime used in the 1996 *Minerals Programme for Minerals* and the 1996 *Minerals Programme for Coal*.

32 No change is proposed to the royalty regime and rates that apply to low-value minerals. The specified royalty rates in the 2008 *Minerals Programme for Minerals*, adjusted by changes in the Producer Price Index, will continue. For those low-value minerals to which no specified royalty rate has been stipulated, a catch-all royalty of one percent AVR is proposed. The threshold of $200,000 of annual net sales revenues at which point royalties are payable would continue. This is a continuation of current practice.

Consultation

33 Nine submissions were received from industry representatives, lobby groups and iwi on the discussion paper. There was a mixture of support and disagreement over the proposed royalty rates.

34 Straterra, the West Coast Commercial Gold Miner's Association (WCCGMA) and the Chatham Islands Enterprise Trust supported the proposed rates, with some caveats expressed around the modelling assumptions used.

35 Solid Energy, OceanaGold and New Zealand Coal & Carbon disagreed with the proposed rates and argued that:

a. the broader economic benefits of mining should have been a factor in determining what was a fair financial return

b. the proposed rates would reduce New Zealand's international competitiveness

c. the modelling assumptions used were not realistic as it related to their operations

d. the distortionary impact of the AVR would result in high-grading of the resource and a less than optimal extraction of the resource.

36 Follow up consultation has been undertaken with selected industry participants (Straterra, Solid Energy, New Zealand Coal & Carbon, OceanaGold, WCCGMA) to work through the modelling assumptions. The discussions clarified the reasons behind choosing particular mine development scenarios, the source of input assumptions and, in a few instances, correcting the royalty and/or tax rates used in the international comparisons where this was shown to be incorrect. These discussions did not require the Ministry to rerun the models using different input assumptions and did not alter the conclusions drawn from the modelling.

37 No submissions were received from Newmont Waihi Gold, Trans-Tasman Resources, Chatham Rock Phosphate Ltd and Bathurst Resources. Each of these companies was consulted extensively during the course of the review to test the input assumptions used in the financial modelling. Each of these companies expressed their comfort with the proposed royalty rates to officials.

38 Other issues raised in submissions included:

a. regional distribution and/or distribution of royalties to iwi

b. the ongoing application of the Energy Resources Levy to opencast coal mining and South Island lignite development

c. the extension of the proposed grandfathering provisions to include the amalgamation of permits.

39 Each of these issues are outside the scope of the review and are not addressed here.

40 Given the technical nature of the proposed changes, I propose a further round of consultation once draft regulations are ready.

41 The Treasury and Inland Revenue have been consulted on this Cabinet paper and the Department of Prime Minister and Cabinet (DPMC) has been informed. The Treasury is happy with the royalty model structure proposed. No comments were provided by Inland Revenue or DPMC.

Financial Implications

42 The proposed changes to mineral royalty rates would only apply to future mines. Existing permit holders would continue to see the royalty rates that applied to them at the time of their initial permit grandfathered through subsequent permits. This provides the investment certainty explorers require throughout a project's life.

43 An estimate of the implications of the proposed changes for future royalty take can be calculated using mid-range assumptions for future mine developments. The NPV of additional royalty revenue to the Crown relative to the status quo is $194 million[7], or an increase of around 50%. This additional royalty take, expressed as a net present value is split as follows:

a. $36 million for a one million tonne per annum high coking coal mine (similar in size to a new Stockton mine);

b. $18 million for a one million tonne per annum hard rock gold mine (similar in size to a new Waihi mine);

c. $17 million for a one million tonne per annum PGE mine;

d. $43 million for a ten million tonne per annum ironsand development (approximately five times current production levels and similar in size to what Trans-Tasman Resources is proposing);

e. $34 million for a 1.5 million tonne per annum phosphate development (a development modelled on Chatham Rock Phophate Ltd's plans); and

f. $47 million for a 1.5 million tonne per annum seafloor massive sulphide development (a development modelled on plans by Neptune and Nautilus in the Kermadecs).

44 Aggregating the more conservative P90[8] and more optimistic P10[9] outputs across each of the base case scenarios modelled results in an additional net present value to the Crown relative to the status quo of $105 million and $419 million respectively.

Human Rights

45 There are no human rights implications with the proposals in this paper.

Legislative Implications

46 On 3 September 2012 Cabinet agreed that royalty provisions for petroleum and minerals should be made into regulations (currently they are in minerals programmes) [CBC Min (12) 6/7)]. Accordingly, the new royalty regime for minerals will be incorporated into regulations to come into effect at the same time as the Crown Minerals (Permitting and Crown Land) Bill.

Regulatory Impact Analysis

47 The Regulatory Impact Analysis (RIA) requirements apply to the proposal in this paper and a Regulatory Impact Statement (RIS) has been prepared and is attached.

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[7] Using P50 base case scenarios, a discount rate of 10 percent and a time horizon through to 2040. P50 means there is a probability of 50 percent that the value will be met or exceeded.
[8] P90 means there is a probability of 90 percent that the value will be met or exceeded.
[9] P10 means there is a probability of 10 percent that the value will be met or exceeded.

Quality of the Impact Analysis

48 The General Manager, Strategic Policy Branch and the Ministry of Business, Innovation and Employment Regulatory Impact Analysis Review Panel have reviewed the Regulatory Impact Statement (RIS) prepared by the Ministry of Business, Innovation and Employment, and consider that the information and analysis summarised in the RIS meet the criteria necessary for ministers to fairly compare the available policy options and take informed decisions on the proposals in this paper.

Consistency with Government Statement on Regulation

49 I have considered the analysis and advice of my officials, as summarised in the attached Regulatory Impact Statement and I am satisfied that, aside from the risks, uncertainties and caveats already noted in this Cabinet paper, the regulatory proposals recommended in this paper:

- Are required in the public interest
- Will deliver the highest net benefits of the practical options available, and
- Are consistent with our commitments in the Government Statement on Regulation.

Publicity

50 There will be a high level of interest, particularly from the mining industry, to these proposals. I therefore recommend that the draft regulations be released for a short period of consultation.

Recommendations

It is recommended that the Committee.

1 **Note** that Cabinet agreed to a review of the royalty regime that applies to high-value minerals as part of the release of a discussion paper titled *Review of the Crown Minerals Act 1991 Regime* [CAB Min (12) 5/7].

2 **Note** that a discussion document titled *Review of the royalty regime for minerals* was released in October 2012

3 **Agree** to direct Parliamentary Council Office to draft regulations that incorporate recommendations 3.1 to 3.6:

3.1 For new coal, offshore and metallic minerals, a hybrid royalty of the higher of a two percent ad valorem royalty or a 10 percent accounting profits royalty. Coal and gold would be subject to the following materiality thresholds before the 10 percent APR would apply:

3.1.1 For coal – annual accounting profits of $5 million

3.1.2 For gold – annual accounting profits of $2 million.

3.2 For underground coal gasification, a hybrid of the higher of a one percent AVR or a 10 percent APR.

3.3 The hybrid royalty that applies to high-value minerals will follow the same method as that set out in the 1996 Minerals Programme for Minerals.

3.4 For low-value minerals, the royalty rates payable according to the table below:

Mineral	Rate per tonne sold (unless otherwise stated)($)
Aggregate and construction materials (including rock, sand, and gravel for roading, building, fill reclamation, and protection purposes)	0.11
Bentonite	0.92
Clay for brick and tiles	0.11
Clay for pottery	0.34
Decorative/dimension building stone	1.72
Decorative pebbles	0.34
Diatomite	1.72
Dolomite	0.23
Limestone for agriculture, cement, and industry	0.23
Marl	0.11
Peat	0.34 per cubic metre sold
Perlite	0.34
Pumice	0.11
Serpentinite	0.34
Silica sand for industry	0.34
Zeolite	1.72

3.5 For all other minerals, the royalty rate payable is an ad valorem royalty of one percent.

3.6 Royalties are payable on those permits or production units where the annual net sales revenues exceed $200,000.

4 **Note** that the proposed new royalty rates would apply to new permits only. For existing permits, licences and privileges, the current royalty rates would continue to apply.

5 **Note** that the specified royalty rates for low-value minerals will need to be updated annually to reflect changes to the Producers Price Index.

Hon Simon Bridges
Minister of Energy and Resources

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Annex 1: Current royalty rates and proposed changes

	Current regime			Proposed royalty regime		
Mineral	**Royalty type**	**Rates**	**Thresholds**	**Royalty type**	**Rates**	**Thresholds**
Coal	Unit-based (per tonne)	$1.40 hard and semi-hard coking $0.80 thermal and semi-soft coking $0.30 lignite	-	Hybrid AVR/APR	Higher of • 2% AVR • 10% APR	APR applies to >$5m accounting profit
Gold and silver	Tiered AVR	1% or 2% AVR	2% AVR applies to annual net sales revenue >$1.5m	Hybrid AVR/APR	Higher of • 2% AVR • 10% APR	APR applies to >$2m accounting profit
Platinum group elements	Tiered AVR	1% or 2% AVR	2% AVR applies to annual net sales revenue >$1.5m	Hybrid AVR/APR	Higher of • 2% AVR • 10% APR	-
Ironsands	Ministerial discretion		-	Hybrid AVR/APR	Higher of • 2% AVR • 10% APR	-
Phosphate	Ministerial discretion		-	Hybrid AVR/APR	Higher of • 2% AVR • 10% APR	-
Seafloor massive sulphides	Ministerial discretion		-	Hybrid AVR/APR	Higher of • 2% AVR • 10% APR	-