Regulatory Impact Statement

Proposed amendment to the Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2019 to remove the exemption for gold from royalties

VICTORIA State Government

Jobs, Precincts and Regions

TABLE OF CONTENTS

FIGURES & TABLES

Regulatory Impact Statement

Proposed amendment to the Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2019 to remove the exemption for gold from royalties.

The *Subordinate Legislation Act 1994* governs the preparation and making of statutory rules and legislative instruments in Victoria. The SLA imposes obligations on responsible Ministers to comply with SLA Guidelines in matters such as consultation and in the preparation of regulatory impact statements.

As outlined in the *Victorian Guide to Regulation*, the primary objectives of a RIS are to ensure:

- regulation is only implemented where there is a justified need;
- only the most efficient forms of regulation are adopted; and
- there is an adequate level of public consultation in the development of subordinate legislation.

An amendment to the Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2019 is proposed to remove the exemption for gold from royalties, announced as part of the *Victorian Budget 2019/20*. A copy of the proposed amendment to the Regulations is published with this RIS.

Public comment is invited on the proposed Regulation amendment and RIS. Please note that all comments and submissions received will be treated as public documents.

The Department of Jobs, Precincts and Regions should receive comments and submissions no later than **5.00 pm, 21 October 2019**.

The Engage Victoria website is the preferred method for receiving submissions. Submissions can also be received by post, marked 'Proposed amendment to the Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2019' and addressed to:

Director, Policy and Legislation
Earth Resources Policy and Programs
Department of Jobs, Precincts and Regions
GPO Box 4509
Melbourne VIC 3001

Copies of the RIS and proposed amendment to the Regulations can be obtained from the Engage Victoria website at https://engage.vic.gov.au/goldroyalty

Abbreviations

'the Act' – *Mineral Resources (Sustainable Development) Act 1990*

'the department' – Department of Jobs, Precincts and Regions (prior to 1 January 2019 known as the Department of Economic Development, Jobs, Transport and Resources)

'ounces' – for the purposes of this RIS, ounces refer to *troy ounces* unless otherwise stated.[1]

'the Regulations' – Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2019

'the Strategy' – *State of Discovery: Mineral Resources Strategy 2018–2023*

ABS – Australian Bureau of Statistics

ASX – Australian Securities Exchange

ACIL Allen – ACIL Allen Consulting

AISC – All-in sustaining costs

ERC – Cabinet's Expenditure Review Committee

ERR – Earth Resources Regulation

DJPR – Department of Jobs, Precincts and Regions

DTF – Department of Treasury and Finance

MCA – Multi-criteria Analysis

METS – Mining Equipment, Technology and Services

OCBR – Office of the Commissioner for Better Regulation

RIA – regulatory impact assessment

RIS – regulatory impact statement

RRAM – Resource Rights Allocation Management System

r. – regulation

s. – section

SARC – Scrutiny of Acts and Regulations Committee

SLA – *Subordinate Legislation Act 1994*

VGR – *Victorian Guide to Regulation*

[1] The troy weight system is widely used in the context of precious metals.
For reference, one troy ounce is equal to 1.097 ounces (avoirdupois), about 10 per cent greater. In metric terms, one troy ounce is equal to 31.1035 grams and one avoirdupois ounce is equal to 28.3495 grams.

Executive summary

Gold holds a special position in the history of Victoria. Much of the state's early economic development was founded on the discovery of the precious metal in the 1850s. Now, almost 170 years later, Victoria's gold sector is undergoing a renaissance.

Royalties exist to fairly distribute the economic benefits from the development of non-renewable Crown assets to the broader community. Under current regulations, gold is the only mineral resource exempt from the state's royalty regime. Victoria is the only major gold producing jurisdiction in the world that does not collect a royalty, or some form of resource rent tax, on gold production.

In *Victorian Budget 19/20*, the government announced the exemption for gold will be removed from 1 January 2020, with a forecast royalty revenue of $56 million over the forward estimates. The proposed amendment to the *Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2019* implements this decision.

Removing the exemption will set the royalty rate at 2.75 per cent, consistent with the general rate for minerals (excluding brown coal). The royalty will only apply to gold produced under a mining licence. To reduce administrative burden and impacts on small producers, the royalty will not apply to the first 2,500 ounces of gold produced under a mining licence each year.

This regulatory impact statement considers the status quo (base case), and the amendment option in an impact assessment, using a hybrid of a quantitative model of producer profitability, and a qualitative assessment based on criteria that reflect the government's regulatory objectives.

The quantitative assessment demonstrates that the gold royalty is unlikely to impact on the viability of gold production in Victoria, based on anticipated market conditions, i.e. gold price forecasts, and publicly known information about Victorian production costs.

The estimates in this report are based on more recent market data, reflecting gold price movements, production increases and two gold producers entering voluntary administration earlier in 2019.

The qualitative assessment criteria include that all Victorians are adequately compensated for the gold resources that belong to them, and the economic activity and job creation resulting from gold resource development in Victoria is maintained.

The proposed Regulation amendment is the preferred option for meeting the policy objectives of the government. The impact analysis demonstrates the proposed Regulation amendment ensures:

- the broader community receives a return on the resources it owns, and
- gold producers will remain profitable under forecast gold prices.

Victoria's gold producers, along with other gold producers around the world, face dynamic market conditions, with their profitability largely dependent on fluctuations in world gold prices and exchange rates rather than royalty or resource rent tax payments. The two main factors that determine a Victorian gold mine's profitability are all-in sustaining costs (AISC) and the Australian dollar denominated gold price.

A small percentage change in producer profitability brought about by a 2.75 per cent royalty is highly unlikely to cause any current producer to exit the market.

Table 1: Gold producer profitability under both policy settings, based on a long-term average gold price of $1,866 (AUD) per ounce

	Operating margin without royalty (%)	Operating margin with royalty (%)	Difference (percentage points)
Fosterville	74.7	72.3	2.4
Ballarat	15.4	13.3	2.1
Costerfield	18.1	16.0	2.1

Table 2: Qualitative comparison of policy settings

	Base case (pre-royalty)	Amendment option (with royalty)
The economic activity and job creation resulting from gold resource development in Victoria continues.	✓	✓
All Victorians are adequately compensated for the private development of gold resources in the state.	✗	✓
Victorian gold producers are likely to remain profitable, i.e. the gold price exceeds a producer's operating costs, under forecast gold prices.	✓	✓
Resources sector activity in Victoria is consistent with the purpose of the Act, as gold production is encouraged in a way that is compatible with the economic, social and environmental objectives of the state.	✗	✓

The public benefits from the royalty outweigh the costs to industry because the revenue will increase the government's public investment capacity. Therefore, the proposed Regulation amendment represents a net benefit to Victoria.

This RIS will not review the current level of fees, rents, other royalties, the broader royalty regime, or levies. The Department of Jobs, Precincts and Regions is scheduled to undertake a full review of royalties, fees and charges in 2020.

1 Background

1.1 Regulatory impact statement process

The Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2019 are made under the *Mineral Resources (Sustainable Development) Act 1990*. In accordance with the *Subordinate Legislation Act 1994* the responsible Minister must ensure that a regulatory impact statement is prepared for any proposed statutory rule.[2]

On 27 May 2019, the Victorian Government delivered *Victorian Budget 19/20* and announced the removal of the exemption for gold from royalties, effective 1 January 2020.[3] Following the government's announcement, the department initiated a process to amend the Regulations to implement the government's decision.

Before amending regulations, the SLA requires:

To assist parties to review and comment on the proposed Regulation amendment, the SLA requires the preparation of a RIS for any regulations that impose a significant economic or social burden on a sector of the public, to be made available with the proposed Regulation amendment.

As required by the SLA, the assessment framework of this RIS:

- examines the nature and extent of the problem to be addressed;
- states the objectives of the proposed Regulation amendment;
- explains the effects on various stakeholders; and
- assesses the costs and benefits of the proposed Regulation amendment and compares impacts with a scenario where the Regulations are not amended.

The Commissioner for Better Regulation provides an independent assessment of RISs, which are assessed against the Victorian Guide to Regulation (VGR). The Commissioner has determined that this RIS meets the requirements of the Subordinate Legislation Act.

The department has prepared the RIS on the proposed Regulation amendment to inform interested parties. Interested parties may make written submissions to the department about the proposed Regulation amendment before a final decision is made on whether to formally amend them, and whether any further amendments are needed.

Following consideration of all submissions received in response to the proposed Regulation amendment, a notice of decision and statement of reasons will be published. Once the Regulations are amended, copies of all submissions are provided to the Parliament's Scrutiny of Acts and Regulations Committee (SARC). SARC examines these submissions to ensure that the department has considered the views of all stakeholders.

The scope of the RIS includes an assessment of a proposed Regulation amendment to give effect to the government's announcement to remove the exemption for gold from royalties. It does not include an assessment of fees, other royalties or levies in the current Regulations—these will be assessed separately and not sooner than 1 July 2020 (see Section 1.7).

---

[2] SLA, s. 7

[3] The royalty will not apply to the first 2,500 ounces of gold production per annum.

1.2 Authorising provision

The Act establishes the authority for the Governor in Council to make regulations with respect to royalties.[4]

1.3 Victoria's mineral resources

Victoria owes much of its early economic development to the gold rushes of the 1850s. Almost 170 years later, the government continues to support ongoing development of the state's world-class mineral resources to deliver continuing prosperity for Victoria.

In 2017-18, the development of mineral resources in Victoria resulted in:

- $73.7 million in mineral exploration expenditure[5]
- $468 million in private new capital expenditure[6]
- $825.9 million mineral production value[7]

The sustainable and responsible development of Victoria's mineral resources is regulated by the state through the *Mineral Resources (Sustainable Development) Act 1990*. The minerals sector comprises the exploration, mining and processing of gold and other precious metals, base metals, heavy mineral sands, antimony and coal.

The minerals sector plays an important role in Victoria's economy, exploring for and developing the community's mineral resource assets and contributing to regional employment. About half of the 16,300 persons employed in the Victorian earth resources sector are based outside of Melbourne.[8]

While the minerals sector in Victoria is small relative to other Australian states, recent successes of operations like the Fosterville Gold Mine near Bendigo have once again seen the world's mining community turn its attention to Victoria.

---

[4] Act, s. 124(1)(a)

[5] ABS, 8412.0, Mineral and Petroleum Exploration, released 4/03/2019.
Note: Mineral and Petroleum Exploration (8412.0) is based on a Census of onshore and offshore operations, however, the petroleum exploration number for Victoria has been suppressed for confidentiality reasons.

[6] ABS, 5625.0, Private New Capital Expenditure and Expected Expenditure, released 28/02/2019.
Note: Private New Capital Expenditure and Expected Expenditure (5625.0) reports on mining in its entirety, therefore the data is inclusive of exploration expenditure.

[7] Earth Resources Regulation, 2017-18 Statistical Report, p. 11

[8] ABS, 6291.0.55.003 - Labour Force, Australia, Detailed, Quarterly, May 2019
Sector defined as the "Mining Division" by the Australian and New Zealand Standard Industrial Classification, 2006 (Revision 2.0)

1.3.1 Resurgence of Victoria's gold industry

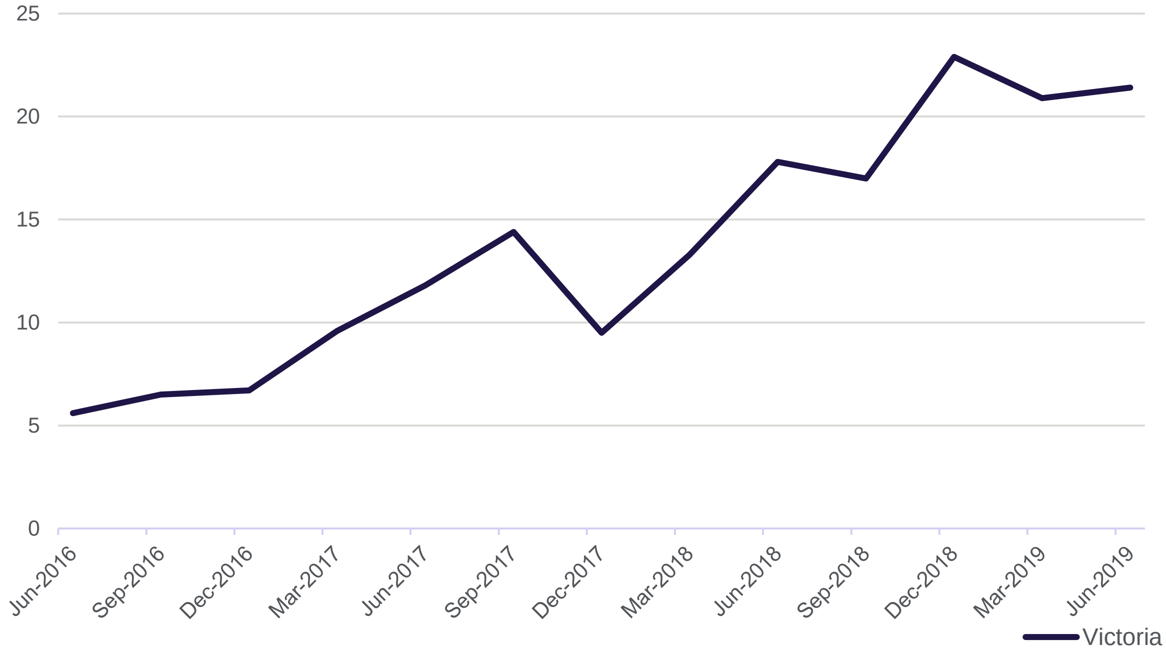
Victoria's gold sub-sector is booming – with increased employment, gold production at record levels, and increased exploration investment in regional Victoria.

Significant increases in gold exploration expenditure over the past few years provides clear evidence that industry sentiment around Victoria's prospectivity is surging (see Table 3 and Figure 1).

Table 3: Gold exploration expenditure (annual total)[9]

	2016-17	2017-18	2018-19
Annual gold exploration expenditure ($ million)	34.6	55.0	82.2
Year-on-year change (%)	+518	+59	+49

Figure 1: Gold exploration expenditure (quarterly, $ million)[10]



Rejuvenated interest in gold exploration increases the likelihood of new minerals discoveries. The discovery of new prospects may result in significant increases of private new capital expenditure and job creation in the coming years, most likely in Victoria's regional areas.

[9] ABS, 8412.0 - Mineral and Petroleum Exploration, Australia, June 2019

[10] ibid

1.3.2 Victorian gold, like other minerals, belongs to all Victorians

All minerals in the State of Victoria are the property of the Crown and therefore belong to the people of Victoria, unless subject to exemption.[11] This includes mineral resources located beneath private land to which access may be required for the purposes of exploration and/or mining.

While the Crown owns all minerals in Victoria, the private sector has greater expertise in exploration and mining compared with the government. Mineral exploration is also inherently risky, economic mineral deposits are very rare, and the private sector is better placed to manage this risk. For example, the conversion rate is one in 300, at best, from first exploration to a mine development. From 1993–2017, it has taken 440,000 metres of exploration drilling in Victoria, on average, to make a discovery.[12]

Royalty payments are collected by the state to ensure Victorians receive benefits from the private sector development of state-owned non-renewable resources. Gold is the only state-owned mineral where the community does not derive the same benefit because it is exempt from royalty.

Most of the state revenue derived from royalty payments is attributable to coal production, which accounts for more than 80 per cent of total royalty revenue in 2017-18 (see Table 4 and Figure 2).

Table 4: Mineral, extractive and petroleum royalties ($ million)[13]

	2015-16	2016-17	2017-18
Coal	36.6	66.9	84.0
Minerals (excluding gold)	5.7	6.1	5.6
Extractives	6.2	5.9	6.2
Petroleum	0.1	4.2	3.2
Total[14]	**47.7**	**83.1**	**99.1**

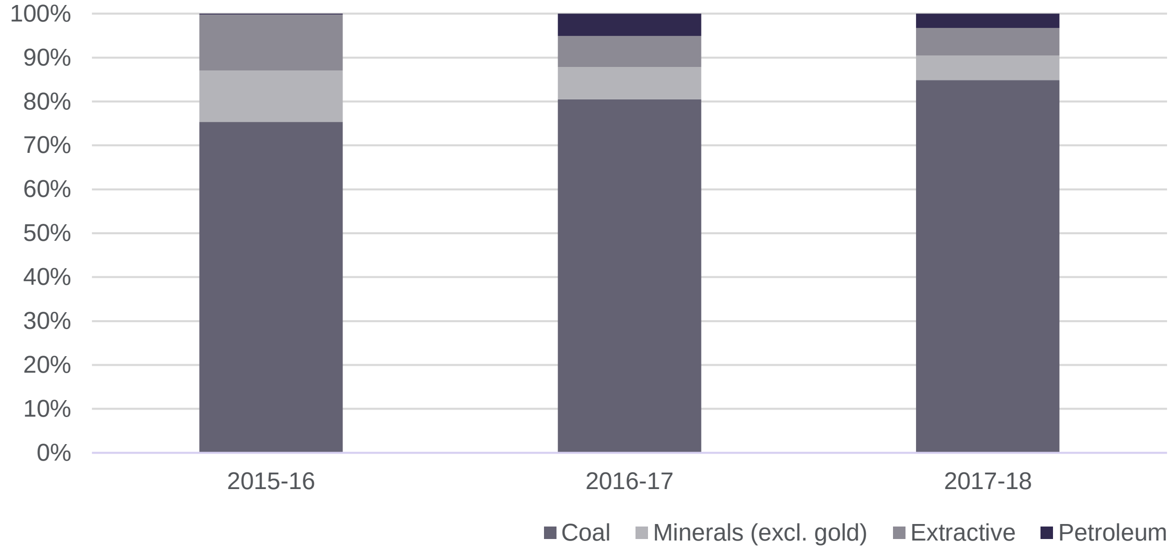
[11] Act, s. 9

[12] DEDJTR, *State of Discovery: Mineral Resources Strategy 2018–2023*, 2018

[13] ERR, *2017-18 Statistical Report*, p. 17

[14] Because of rounding numbers may not add.

Figure 2: Breakdown of royalty payments[15]

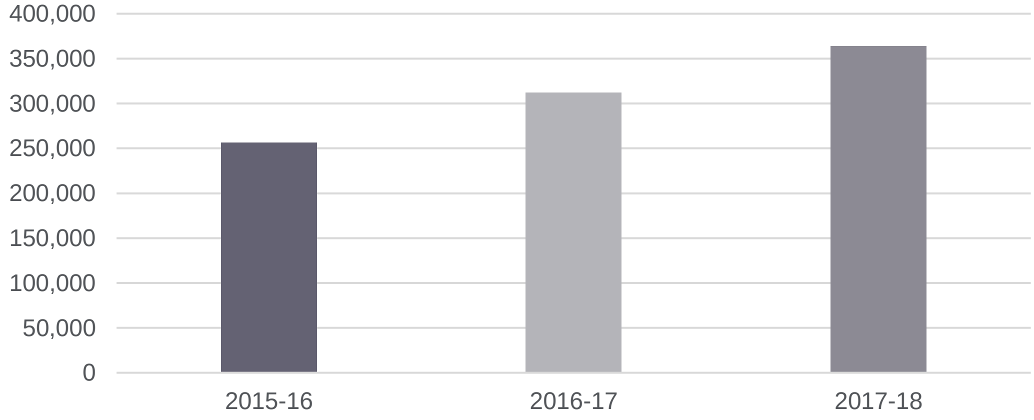


1.3.3 Gold sub-sector

Victoria has historically been a globally significant gold province. Since the precious metal was first discovered in Victoria in 1850, over 80 million ounces of gold has been mined from fields across the state.

In 2018-19, Victoria's gold endowment was a source of economic development, particularly in regional areas, with the expansion of Fosterville Gold Mine creating new jobs and opportunities for the Greater Bendigo community (see case study below). Fosterville Gold Mine's facility expansion and upgraded reserve estimates are likely to place Fosterville as one of the top five gold producing operations in the country in 2019-20.

Figure 3: Victorian gold production is increasing (ounces)[16]



Exploration licences, mining, prospecting and retention licences permit gold related activities in Victoria. Currently, there are 18 mining licences that relate to gold production.

---

[15] DJPR analysis

[16]ERR, *2017-18 Statistical Report*, p. 17

By production volume, the largest three gold mines are the Fosterville Gold Mine, owned and operated by Kirkland Lake Gold; Ballarat Gold Mine, owned and operated by Castlemaine Goldfields Limited (CGT)[17]; and the Costerfield gold and antimony mine, owned and operated by Mandalay Resource Corporation.

Table 5: Victoria's major gold producers

Operator	Mine	2017-18 production volume (ounces)	2017-18 production value ($ million)	2017-18 share of total Victorian production (%)
Kirkland Lake Gold[18]	Fosterville	281,997	474.5	77.5
Castlemaine Goldfields[19]	Ballarat	38,858	68.1	10.7
Mandalay Resource Corporation[20]	Costerfield	26,905	45.1	7.4

Note: Gold production from the three major producers listed in Table 5 *accounted for 95.5 per cent of all gold produced in Victoria in the 2017-18 financial year.*

There is increased interest in the Victorian gold sub-sector in recent years following the discovery of new reserves worth an estimated $1.1 billion at the Fosterville Gold Mine, and the recent acquisition and reopening of the Stawell Gold Mine by Arete Capital in 2017. In January 2019, the Stawell Gold Mine poured its first gold bar since closing in December 2016.

The gold sub-sector employs around 1250 persons in Victoria, about half of those jobs originate at the Fosterville Gold Mine, located 20 kilometres from the city of Bendigo.

Figure 4 shows known resource estimates and the regions across Victoria that have historically produced high volumes of gold. Geoscientists estimate that only half the gold that exists across the state has been discovered to date.

[17] Castlemaine Goldfields Limited is a wholly-owned subsidiary of LionGold Corp

[18] Kirkland Lake Gold, Financial reporting, accessed online at https://www.klgold.com/investors/financial-reporting/default.aspx

[19] LionGold Corp, Financial reporting, accessed online at http://www.liongoldcorp.com/IM/EN/financials.html

[20] Mandalay Resources, Financial reporting, access online at https://www.mandalayresources.com/report-type/financial/

Case study: Fosterville Gold Mine

The Fosterville operation is a high-grade, low-cost modern underground gold mine near Bendigo. It is currently Victoria's largest gold producer. Recent mineral exploration and development success at the Fosterville operation exemplify Victoria's gold potential.

The impact of pre-competitive geoscience data, knowledge and models

Advanced geoscience work by GSV has identified that the area around Bendigo and Fosterville could hold up to 32 million ounces of gold out there yet to be found.

> The availability of pre-competitive geoscience data and access to knowledge in the form of geological models has been critical for our geological understanding and gold exploration programs.

Ian Holland, Vice President Australian Operations, Kirkland Lake Gold.

Kirkland Lake Gold discoveries and production

The Fosterville operation produced 281,997 ounces of gold in 2017-18[21] and is expected to produce between 550,000 to 610,000 ounces in 2019[22].

As at 31 December 2018, the mine owner – Fosterville Gold Mine Pty Ltd (a wholly owned company of Canadian mid-tier gold producer Kirkland Lake Gold) – reported gold reserves 2.7 million ounces worth approximately $6.3 billion at current prices.

The Fosterville operation had the world's best mineralised gold equivalent drill intersection for the first half of the 2017 calendar year – a further three intersections were included in the total ten gold equivalent drill intersections reported worldwide in the same period.[23] As at June 2019, year to date, the Fosterville operation has produced 269,145 ounces of gold at an average grade of 33.8 grams per tonne and an average operating cost of $316 per ounce. Fosterville is one of the world's most profitable underground gold deposits right now.

The discovery of additional (high-grade) reserves has resulted in a significant increase in mineral exploration spend by the company in Victoria. The gold reserve upgrade and record production will see an expansion that will create more jobs and boost the local economy.

The processing path for the ore mined at the Fosterville operation involves crushing and grinding followed by flotation, bacterial oxidation and carbon-in-leach circuits. The modern sulphide treatment plant is one of the world's leading BIOX systems and has achieved record gold recoveries. In addition, a gravity gold circuit was installed at Fosterville in 2016. The final product is bars of gold doré, a semi-pure alloy of gold and silver.

Responsible mining

Kirkland Lake Gold is a member of the Minerals Council of Australia and is signatory to Enduring Value – the Australian Mining Industry Framework for Sustainable Development. As a signatory to Enduring Value, the Company is committed to continuous improvement in sustainable development performance through progressive implementation of the International Council on Mining and Metals' 10 Principles of Sustainable Development principles and elements.

---

[21] Kirkland Lake Gold, http://www.klgold.com/assets/operations-and-projects/australia/operations/fosterville-mine/default.aspx, 2017.

[22] http://www.klgold.com/news-and-media/news-releases/press-release-details/2018/Kirkland-Lake-Gold-Reports-Strong-Earnings-and-Cash-Flow-in-Q2-2018-Improves-2018-Production-and-Cost-Guidance/default.aspx

[23] Drill intersections are used in the resources sector to provide an evidence base to measure and contrast the prospectivity of various mining operations.

Regional impacts

The Fosterville operation supports 570 highly-skilled jobs (420 employees and 150 contractors); eight out of ten employees live in the Greater Bendigo region. In the 2017 calendar year the Fosterville operation directly contributed $164 million in goods, services and wages to the local economy.

Minerals exploration and production success at the Fosterville operation has led to a significant recent uptake in minerals exploration licences in north central Victoria. And in turn, an overall increase in year-on-year exploration activity spend in Victoria. Victoria is currently recognised on the domestic and international stage as a destination of choice for modern gold exploration investment, with Kirkland Lake Gold the best performing stock on the Toronto Stock Exchange in 2017[24].

[24] http://www.melbourneminingclub.com/events/luncheons/tony-makuch-president-chief-executive-officer-kirkland-lake-gold/ (35 minutes, 10 seconds)

1.3.4 Rights to explore for and mine gold

The Act permits gold activities in Victoria subject to the conditions of a relevant licence (see Section 1.5).[25] The Act prescribes four types of licence: exploration, retention, mining and prospecting licences. Prospecting rights are established through miner's rights and tourist fossicking authorities. There are currently 18 mining licences that relate to gold production. Table 5 shows the output of the top three gold producers.

There are also currently 12 gold related prospecting licences in Victoria, 11 of which produced a combined total of 250 ounces and one that reported zero production in 2017-18.

The announced gold royalty will only apply to mining licences.

1.3.4.1 Recreational prospecting and fossicking

Recreational prospecting or fossicking for gold is a popular activity in Victoria. The Act permits these activities providing they occur under a valid miner's right or tourist fossicking authority, subject to the respective conditions.[26]

Part 5 of the Act sets out the nature and extent of activities that are permitted under miner's rights and tourist fossicking authorities, and the process for granting these authorities. Miner's rights must be granted to an applicant if the application is made in accordance with the regulations.[27] The Department Head has the power to grant tourist fossicking authorities to any person who applies in accordance with the regulations.[28] The Department Head may grant a tourist fossicking authority subject to any terms and conditions specified in the authority.

Economic activity associated with prospecting or fossicking helps contribute to regional and visitor economies across the state. In 2017-18 5,431 miner's rights were issued by ERR.

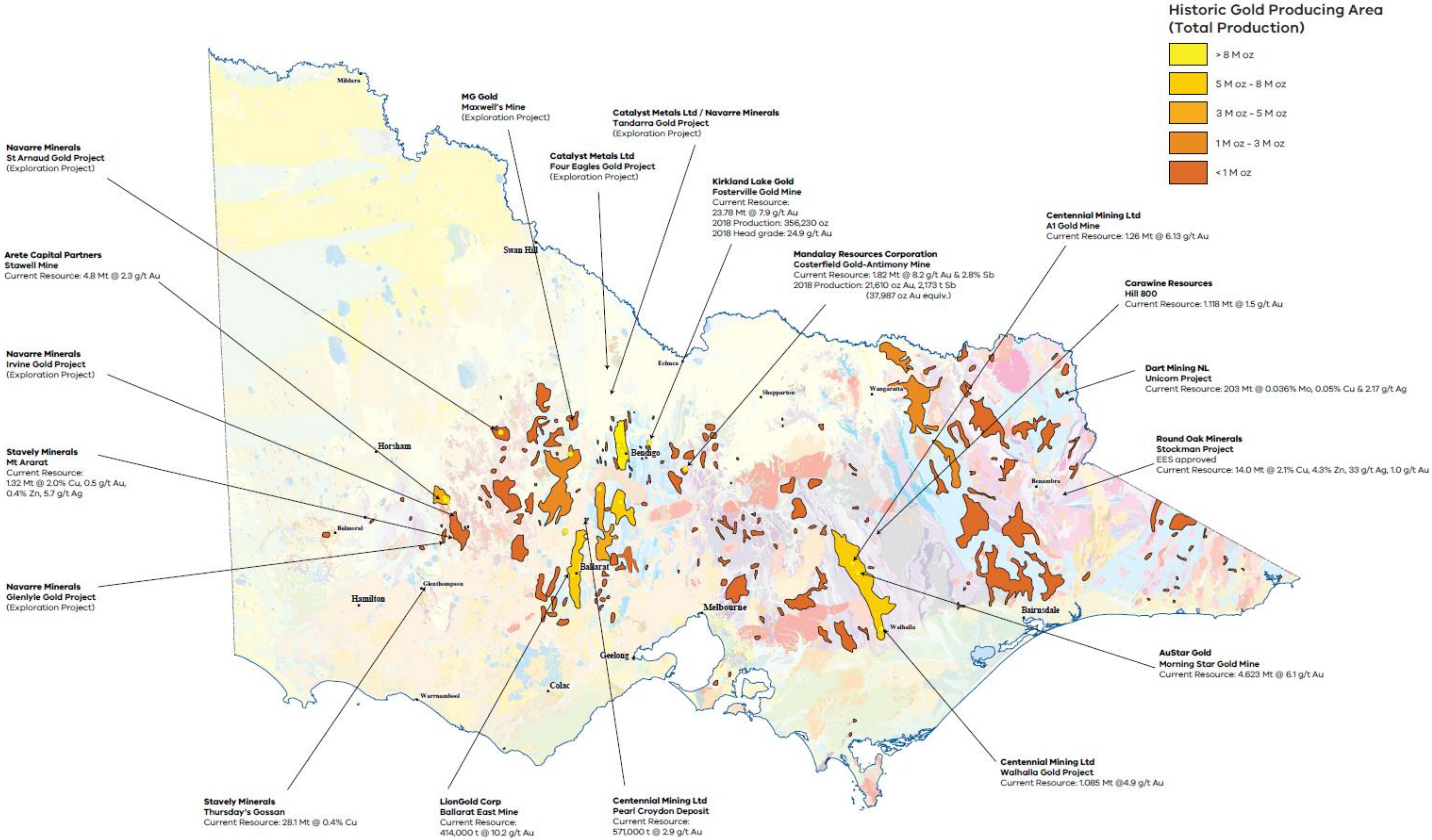
[25] Act, Part 2

[26] ibid, Part 5

[27] ibid, s. 57

[28] Ibid, s. 60

Figure 4: Distribution of gold resources in Victoria



1.3.5 Victoria's Royalty regime

A royalty is a payment made to the government to compensate for the private development of a non-renewable resource owned by the community. Royalties also provide a relatively simple mechanism to fairly distribute the economic benefits of resource activities across the state. Currently, royalties for any mineral, other than gold or brown coal (lignite),[29] are payable by the holder of a mining licence or the holder of a prospecting licence at the rate of 2.75 per cent of the net market value of the mineral produced.[30]

With respect to the exemption on gold, on 27 May 2019, the government announced they would:

> … broaden the royalties regime by removing the exemption for gold on 1 January 2020. The royalty rate will be set at 2.75 per cent of the net market value of gold production, consistent with the general royalty rate for minerals.[31]

The royalty will not apply to the first 2,500 ounces of gold production per annum, to reduce impacts on small producers and reduce administrative and regulatory burden.

The government announced the change to Victoria's royalty regime to bring parity and consistency, by ensuring the Victorian community receives a similar return from the mining of resources in the state, to those in other parts of Australia, and across the globe. In the absence of this change, Victoria would remain an outlier among major gold producing jurisdictions because it would be the only jurisdiction that does not collect a gold royalty or resource rent tax. See **Appendix 3** for a comparison of regulatory arrangements in Australian and international jurisdictions.

Exploration and mining are globally competitive industries regulated under a strong legal framework that seeks to encourage industry in a way that is compatible with the economic, social and environmental objectives of the state.

---

[29] The Act legislates a royalty rate for lignite, calculated based on the per gigajoule unit, i.e. energy content, of the coal produced. The unique treatment of lignite reflects the high volume of production and that lignite is currently uneconomic for any use other than in situ fuel supply for power generation, i.e. the characteristics of Victorian coal prevent it from being openly traded to reveal any efficient price information.

[30] Regulations, s. 6
Net market value, of a mineral, means the market value of the mineral at the time it is first sold, transferred or disposed of, less any costs reasonably, necessarily and directly incurred by the licensee in connection with the sale, transfer or disposal (including insurance, freight and marketing expenses). A royalty based on market value is known as an ad valorem royalty.
Ad valorem: Latin for "based on value."

[31] DTF, *Victorian Budget 19/20*, Service Delivery, Budget Paper No. 3, p. 125

1.4 Global market outlook for gold

Each quarter, the Department of Industry Innovation and Science's Office of the Chief Economist publishes *Resources and Energy Quarterly*, which contains forecasts for the value, volume and price of Australia's major resources and energy commodity exports.[32] This section of the RIS draws extensively on the Office of the Chief Economist's June 2019 analysis on the outlook for gold.

1.4.1 Prices

Gold is expected to perform well over the next few years, driven by trade and geopolitical uncertainties. Trade tensions between the US and China are expected to continue and have the potential to derail global economic growth, with flow-on impacts to consumer and business confidence. Geopolitical tensions on the Korean peninsula and the Middle East are sources of upside risk for the gold price. At times of uncertainty, the demand for safe-haven assets such as gold typically rises. The gold price is expected to rise at an average annual rate of 4.2 per cent between 2019 and 2021, averaging US$1,440 per ounce in 2021 (AUD$2,095 per ounce at current exchange rates).

1.4.2 Consumption

World gold demand increased by 7.0 per cent year-on-year in the March quarter 2019, to 1,053 tonnes, driven by central bank buying and inflows into gold-backed exchange traded funds. Gold jewellery demand increased by just 0.6 per cent year-on-year in the March quarter 2019, to 530 tonnes, driven by a 5.2 per cent year-on-year rise in demand from India. Gold used in the technology sector dropped by 3.1 per cent year-on-year in the March quarter 2019, to 79 tonnes, due to a weaker electronics sector in the US and the trade tensions between the US and China.

World gold consumption is forecast to grow at an average annual rate of 3.7 per cent in 2019 and 2020 — reaching a peak of 4,728 tonnes in 2020—and then decrease by 4.9 per cent in 2021, to 4,497 tonnes. Retail investment is expected to drive up global gold consumption, as the demand for gold bars and coins rises in 2019 and 2020.

1.4.3 Production

World gold supply fell by 0.3 per cent year-on-year in the March quarter 2019, to 1,150 tonnes, due to a decline in net hedging, which decreased by 72 per cent year-on-year, to 10 tonnes, as gold producers took advantage of rising gold prices to sell their future gold production.

The Australian dollar gold price hit a record high during the March 2019quarter, averaging AUD$1,811 a troy ounce. As a result, some Australian gold producers opted to secure cash flow for portions of their output. The ramp-up of Mount Morgans and increased output at Cadia Valley boosted Australia's gold output by 6.2 per cent year-on-year in the March 2019 quarter. The upward trending gold price continued through August with the Australia dollar gold price reaching a new peak price of over $2,300 per ounce.[33]

Australia's gold production rose by 6.2 per cent year-on-year in the March quarter 2019 to reach 77 tonnes. Output was driven by improved output from several large gold mines in New South Wales and Western Australia. Australian gold production is estimated to have grown by 4.7 per cent in 2018–19, to 317 tonnes. Production is forecast to peak at 339 tonnes in 2019–20, but then fall to 332 tonnes in 2020–21.

---

[32] Office of the Chief Economist, Resources and Energy Quarterly, June 2019

[33] Mining Journal, *Australian gold price through $2,300/oz*, accessed online at https://www.mining-journal.com/research/news/1370171/australian-gold-price-through-usd2-300-oz on 9 September 2019

1.5 Legislative framework

The Minister for Resources is responsible for administering the *Mineral Resources (Sustainable Development) Act 1990*. The purpose of the Act is to encourage economically viable mining and extractive industries that make the best use of resources, compatible with the economic, social, and environmental objectives of the State. The Act seeks to do this by encouraging and facilitating minerals exploration and fostering the establishment and continuation of mining operations by providing for an efficient and effective system for the granting of licences and other approvals, as well as a process for co-ordinating applications for related approvals. It also seeks to establish an economically efficient system of royalties, rentals, fees and charges.

The Act is the primary legislative instrument that regulates the mineral resources sector. It does this by establishing a legal framework aimed at, among other things, ensuring:

- Mineral and stone resources are developed in ways that minimise adverse impacts on the environment and the community.
- Consultation mechanisms are effective and appropriate access to information is provided.
- Land which has been mined is rehabilitated.
- Conditions in licences and approvals are enforced.

The Act defines what a mineral is and makes minerals the property of the Crown. It is an offence to explore for or mine minerals without an authorisation to do so.[34] The centrepiece of the Act is the licensing regime, which allows the Crown to assign its rights to explore for and develop minerals to private parties.[35] There are four main types of mineral licence prescribed under the Act.

- exploration licences
  - The holder may carry out mineral exploration activities on the land covered by the licence. These licences may be granted for a period up to 5-years, with up to 2 renewals permitted.
- mining licences
  - The holder may carry out mining, exploration, construction and any other activities incidental to mining on the land covered by the licence. These licences may be granted for up to 20-years, unless otherwise determined by the Minister.
- retention licences
  - The holder may retain the rights to a mineral resource that is not currently economically viable to mine, but may be in the future, and to explore and carry out other work to establish the economic viability of mining. Retention licences may be granted for up to 10 years and may be renewed twice.
- prospecting licences
  - The holder may prospect or explore for minerals, carry out mining activities and other activities that are incidental to mining. Prospecting licences may be granted for up to five years, cannot be renewed and apply to an area of no more than five hectares[36].

Section 124 of the Act establishes the authority to make regulations. The Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2019 operationalise key elements of the Act. For example, the head of power to apply for a licence is contained in the Act and the Act requires that an application must be submitted in accordance with the information prescribed in the regulations. Other provisions of the Act require that information be prescribed in the regulations to:

- Prescribe various procedures, details, royalties, fees, forms, rents, information required in documents and other matters authorised by the Act.
- Set out requirements relating to survey of licence areas.
- Prescribe certain offences as infringement offences.
- Set out requirements relating to declared mines.

---

[34] Act, s. 8

[35] ibid, s. 11

[36] Legislative amendments recently passed by the Legislative Council on 10 September 2019 extend this term to seven years.

The Act and regulations together establish powers and processes to assign rights in an economically efficient manner that provides the maximum benefit to the public, and ensures those rights are used effectively. This is chiefly regulated through licensing and reporting.

1.6 Earth Resources Regulation

The Minister and Department Head have powers under legislation to administer the Act. Earth Resources Regulation (ERR) is their operational delegate and is responsible for regulating Victoria's resources sector. ERR is a unit within the Department of Jobs, Precincts and Regions.

ERR has an annual recurrent budget of approximately $7 million and its roles include licensing, work plan approvals, risk management, enforcing compliance and stakeholder engagement. ERR's focus over the past few years has been on implementing a risk-based approach to regulation, particularly through approvals processes.

ERR operates under several Acts and regulatory instruments and has the following responsibilities:

- Allocating rights to explore and mine for minerals through licensing and tenders.
- Authorising mining exploration, production and other activities.
- Assessing and approving licensee operations works.
- Compliance and enforcement activities.
- Other functions such as stakeholder engagement and education.

1.7 Fees, rents, other royalties and levies are out of scope

This RIS is focused on analysing the government's decision to remove the exemption from royalties on gold. Therefore, this RIS does not review the current level of fees, rents, other royalties or levies; the level of fee units will continue at current rates (subject to annual indexation).[37] This is in line with the recommendation from the Commissioner for Better Regulation in the *Getting the Groundwork Right* report, which recommended that the department begin to increase cost recovery for ERR's regulatory activities no earlier than 1 July 2020. This will allow the department to:

- Embed improvements to the regulatory system currently being implemented.
- Consult with industry and other stakeholders on the right model for cost recovery.
- Establish a clear baseline on the efficient cost base for ERR.[38]

Once these actions are completed, the department intends to make further amending regulations to implement the preferred model for cost recovery, including a comprehensive assessment of the royalty methodology, and establish fees that reflect the efficient cost base.

1.8 Building community confidence in mineral exploration and development

Every three years, CSIRO conducts a national survey to understand citizen attitudes toward the mining industry.[39] The most recent survey was conducted during 2016-17. In May 2018, the department engaged CSIRO to focus its analysis on Victorian respondent data and provide a report isolating Victorians' perspectives.

---

[37] Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2019

[38] OCBR, *Getting the Groundwork Right: Better Regulation of Mines and Quarries*, p. 65

[39] CSIRO, *Australian attitudes toward mining: Citizen Survey*, 2017.

CSIRO analysed data from 1,612 Victorians to examine a broad range of issues related to mining including perceptions of benefits and negative impacts related to the industry, levels of trust in the industry, government and other relevant industry stakeholders, and acceptance of the industry overall.

CSIRO found improved trust and confidence in the resources sector is driven primarily by fair distribution of the economic benefits of mining to citizens. Gaining and maintaining community confidence in the social, environmental, and economic performance of mineral exploration and development is critical for the sector. Royalty payments are one way to ensure that the economic benefits of mining are distributed throughout the community fairly.

1.9 Securing enduring community benefit from mining activity

Securing long-term benefits for communities that host minerals industry activity can provide a catalyst for broader regional economic development and can offset impacts from mining development on local infrastructure and amenities.

In August 2018, the Victorian Government release its mineral resources strategy, *State of Discovery: Mineral Resources Strategy 2018–2023*. Action area 1 of the Strategy stated that the department would examine options for a scheme to share benefits from resource operations to deliver measurable, enduring benefits within an accountable, transparent scheme.

A key pre-condition of ensuring a long-term enduring benefit from mining activities is to involve communities in rehabilitation planning, to provide greater confidence about long-term land forms, and management arrangements after mining ceases. The government is piloting community involvement in rehabilitation planning for coal mines as part of the response to the Hazelwood Mine Fire Inquiry. Regulations and guidelines will set out requirements and expectations for the Declared Mine Rehabilitation Plan, which will also include a community and stakeholder engagement plan.

In the 2019-20 State Budget, the government committed $1 million to the establishment of a community benefit scheme to support community-based projects in communities hosting minerals sector activity, including the Goldfields region of Victoria, e.g. Ballarat and Bendigo. Design elements of the scheme will be agreed over the next 18 months. This initiative demonstrates the Victorian Government's commitment to adopting innovative funding programs to support community-based projects in areas that host mining activities.

1.10 New revenue initiatives that may benefit gold producers

Aside from changes to the state's royalty regime, *Victorian Budget 19/20* outlined several other revenue measures that may have positive impacts on gold producers and would therefore partly offset the impost of the gold royalty. As budget measures are decided as part of one annual process, decisions are, to some extent interdependent.

In *Victorian Budget 19/20* the government announced it would:[40]

- encourage regional employment
  - The regional payroll tax rate paid by eligible businesses will be reduced to 1.2125 per cent, or 25 per cent of the metropolitan rate, by 2022-23. The reduction will be phased in over three years with reductions of around 0.4 percentage points each year in 2020-21, 2021-22 and 2022-23. Around 3,500 businesses that qualify as regional employers will pay the reduced rate on all their wages.
  - From 1 July 2019, the eligibility rules for the regional rate will be simplified by removing the 'business location test' that required an employer to have their registered business address in regional Victoria.
- increase the payroll tax free threshold encourage regional employment
  - The current payroll tax-free threshold of $650,000 will be increased to $700,000 by 2022-23, with increases of $25,000 from 1 July 2021 and a further $25,000 from 1 July 2022. This will reduce the number of businesses paying payroll tax from the current 38,000 by around 700 in 2021-22 and a further 700 in 2022-23. It will reduce the payroll tax for all businesses.

[40] DTF, *Victorian Budget 19/20*, Budget Paper no. 3, *Service Delivery*, pp. 124-125

- provide support to regional businesses and encourage businesses to locate in regional areas to encourage regional employment
  - A land transfer duty concession will be provided to commercial and industrial property transactions in regional Victoria. A 10 per cent concession will be provided for contracts signed from 1 July 2019, increasing by 10 percentage points each year to provide a full 50 per cent discount from 1 July 2023.

2 The nature and extent of the problem

For non-renewable resources owned by the Crown, the Victorian Government plays an important economic role in ensuring the Victorian community receives an adequate return from Crown asset development by:

- Setting and evaluating the state's royalty regime so the government, on behalf of the community, collects a return from the production of the community's mineral resources.
- Collecting revenue from minerals royalties to increase the government's capacity to provide services and infrastructure to all Victorians.

Victoria's current royalty regime fails to deliver an adequate return to the broader community from the development of minerals because of a royalty exemption that applies to gold production. Unlike other minerals in the state, Victorians are currently not receiving a return from the production and sale of gold that belongs to them. Foregone revenue resulting from the exemption reduces the government's capacity to invest in the infrastructure, skills and training that support continued growth across Victoria, and represents a direct wealth transfer from the State of Victoria to mining companies.

3 Objectives of the regulations

3.1 Legislative purpose and objectives

The purpose of the *Mineral Resources (Sustainable Development) Act 1990* is to encourage mineral exploration and economically viable mining and extractive industries which make the best use of, and extract the value from, earth resources in a way that is compatible with the economic, social and environmental objectives of the state.[41] The Act came into force in 1990 and has undergone incremental amendment over the years to reflect changes in the expectations of society, such as the inclusion of the principles of sustainable development and community consultation in 2006 and risk-based work plans in 2015. The Act establishes a regulatory framework that provides for:

- An efficient and effective process for licensing and approvals; co-ordinating applications; rights allocation decision-making for mineral resources; and economically efficient royalties, rental, fees and charges.
- A legal framework that ensures:
  - Risks to the public, environment and infrastructure are identified and eliminated or minimised as far as reasonably practicable.
  - Consultation mechanisms are effective.
  - Mined land is rehabilitated.
  - Appropriate compensation is paid for the use of private land for exploration or mining.
  - Conditions in licences and approvals are enforced.
  - Dispute resolution procedures are effective.

3.2 Objectives of the proposed Regulation amendment

The objectives of the proposed Regulation amendment are to:

- Adequately compensate Victorians for the development of gold resources in the state, and
- Maintain the economic activity and job creation resulting from gold resource development in Victoria.

These objectives balance the incentives for new and ongoing investment in the gold sub-sector with the need to return value to the broader community from the development of Crown assets.

The proposed amendment also brings parity and consistency to ensure that Victorians receive a similar return from the development of Crown resources, to those communities in other parts of Australia and across the globe.

The royalty revenue raised by this proposed amendment will contribute to the state's consolidated revenue and help deliver a range of Victorian Government investments and initiatives, such as new infrastructure, hospitals and schools.

[41] Act, s. 1

4 Options

Three characteristics of the proposed Regulation amendment have determined how this RIS has been developed:

1. The public announcement of the government's policy decision on 27 May 2019.
2. The proposal being a removal of an existing exemption, which limits consideration of design options for the gold royalty that are inconsistent with Victoria's current royalty regime for all minerals (excluding lignite).
3. Decisions on revenue matters, like royalties, are considered by government through the Budget process. The budget process is an annual decision-making process with the purpose of allocating public resources to the Victorian Government's policy priorities. The budget process shares many similarities with the RIS process, in that budget proposals outline the problem that needs to be addressed, describe shortlisted options, provide analysis on the costs and benefits of options and recommend a funding and implementation approach. As budget deliberations are Cabinet-in-confidence, specific details relating to deliberations are not published with this RIS. Only the final decisions are published in the budget papers.

Victorian Budget 19/20, Budget Paper no. 3, *Service Delivery*, Chapter 1 provides the details of the government's revenue initiative that removes the exemption for gold from royalties on 1 January 2020. Accordingly, the impact analysis outlined in Section 5 is focused on assessing an amendment option (mirroring the government's budget decision) with a base case where status quo is maintained, i.e. the situation where gold remains exempt from royalties.

4.1 Base case – Gold remains exempt from royalties

The base case describes the situation where the Regulations are not amended to give effect to the government's decision to remove the exemption for gold in Victoria's royalty regime, i.e. status quo is maintained. The base case will be used as the reference point for comparing the amendment option, to establish the net effect after accounting for all the likely benefits and costs.

4.2 Amendment option – The exemption for gold is removed

The amendment option describes the situation where the Regulations are amended to give effect to the government's decision to remove the exemption for gold from royalties.

Effective from:	**1 January 2020**
Royalty rate:	**2.75 per cent** of the net market value of gold production.[42]
Conditions:	The royalty **will only apply to gold produced under a mining licence**. The royalty **will not apply to the first 2,500 ounces** of gold produced under a mining licence each financial year.

[42] The market value of the gold at the time it is first sold, transferred or disposed of, less any costs reasonably, necessarily and directly incurred by the licensee in connection with the sale, transfer or disposal (including insurance, freight and marketing expenses).

4.2.1 Low production threshold

For small volume producers, the administrative compliance cost associated with royalty payments is likely to be greater than the revenue collected. As such, under the proposed amendment scenario, the gold royalty will not apply to the first 2,500 ounces of production per annum for all production. A low volume producer exemption threshold also assists industry in the exploration and appraisal phase, as adding a royalty cost to gold extracted during appraisal adds to the cost of mine development and may reduce the prospect of bringing a mine to full production. Most other Australian States have some form of low volume production exemption threshold in place.

The review of practice in other jurisdictions (**Appendix 3**) demonstrates that while approaches to setting the gold royalty vary, it is common to include a low production threshold in the royalty regime.

5 Assessment of impacts

The regulatory impact assessment process seeks to ensure that proposed regulations are well-targeted, effective and appropriate, and impose the lowest possible burden on businesses and the community. The keystone of this process is to compare scenarios to see which has the highest net-benefit, thereby identifying a preferred option.

RISs are required to use decision-making tools, such as cost-benefit analysis or multi-criteria analysis, to identify a preferred option. The decision-making tool used in this RIS is a hybrid of a quantitative model of producer profitability, and a qualitative assessment based on criteria that reflect the government's regulatory objectives.

The quantitative assessment clearly shows that the gold royalty is unlikely to impact on the viability of gold production in Victoria because all the assessed tenements are expected to remain profitable, based on anticipated market conditions, i.e. gold price forecasts, and publicly known information about the costs faced by Victorian gold producers.

The qualitative criteria include that all Victorians are adequately compensated for the development of the state's mineral resources, and that mining is encouraged in a way that is compatible with the state's economic, social and environmental objectives.

The analysis leads to a conclusion that the presence of the gold royalty is unlikely to affect the viability of gold production in Victoria, hence the proposed Regulation amendment is the preferred option for meeting the policy objectives of the government.

5.1 Quantitative assessment

5.1.1 Modelling methodology

An independent analysis from ACIL Allen modelled the potential impact of a gold royalty on the state's revenue and gold producers. In this report, unless otherwise specified, 'modelling' refers to the general framework used by both the department and ACIL Allen.

The model estimated the operating position of gold producers without a gold royalty, and under a 2.75 per cent ad valorem royalty policy setting. ACIL Allen sourced publicly available information from annual and quarterly reports from the operators of the state's gold mines to populate the model.

Modelling of the royalty was done at an individual tenement level,[43] with analysis based on the estimated cost profile of each tenement's production (pre-royalty—base case, and post-royalty—amendment option). A material impact on a tenement would be highlighted by a post-royalty operating margin that was less than zero and would likely result in the operation ceasing production. Operating margins are largely a product of interactions between a producer's all-in sustaining costs[44] and the Australian dollar denominated gold price.

Since the modelling was first undertaken, several changes have occurred in the gold sub-sector including; significant increases in Australian dollar denominated gold price, significant production increases at Fosterville Gold Mine, and Centennial Mining (owners of the A1 Gold Mine and the Union Hill Mine) entering voluntary administration.

The department presents the Victorian Government's revenue estimates (based on 2017-18 production data and ACIL Allen modelling) alongside the department's impact assessment modelling based on the most current

[43] A mining tenement is a licence, permit or lease providing rights to explore for and/or extract minerals under the surface of an area of land.

[44] AISC is a standard measure of the cost of production in the mining industry. It refers to the total cost of production (including any processing costs), plus ancillary costs (such as a portion of company overheads), as well as the costs associated with ongoing mine development activities to sustain production (such as exploration expenditure at the existing mine). The AISC measure of gold production provides a more comprehensive look at costs than the traditional cash cost approach. The World Gold Council strongly supports the use of ASIC and it been widely adopted by industry in its reporting.

publicly available information to ensure that this RIS best represents current market conditions and contextualises prior decision-making.[45]

ACIL Allen's modelling was based on the best available information at the time it was produced and was used to inform both budget decision-making and the revenue forward estimates included in the 2019-20 State Budget. The model includes tenements which reported production of more than 2,500 ounces in 2017-18 and assumes that rate of production through to the end of their measured resources[46] or the end of the modelling period (whichever came first). This scenario represents a base-line and conservative estimate of royalty revenue.

The department's impact assessment modelling uses the framework developed by ACIL Allen and updates key inputs, e.g. production information, exchange rates, to provide a more reflective account of the gold sub-sector at the time the RIS is published. As with ACIL Allen's modelling, producers are assumed to carry forward their most recent production levels through to the end of the tenement's proven reserves.[47] Where this information is not available, production is ceased, as lack of information regarding proven reserves suggests a mine is nearing the end of its economic life.

---

[45] Impact assessment modelling was performed by the department, it was based on the same framework developed by ACIL Allen in its analysis.

[46] Measured resources include all minerals which have been judged by a competent person as being in situ within a deposit, which includes an assessment of the grade, tonnage, density and other physical characteristics. This is the level of confidence in the resource immediately prior to consideration of market circumstance and economic viability. This is the level of mineral resource classification that is the conservative assessment of the extent of the mineral in situ.

[47] Proven reserves are minerals in situ which have been judged to have a greater than 90 per cent chance of being able to be extracted profitably at a given market price (usually using the average price of multiple prior years). This is the highest level of confidence in mineral resource estimation.

Table 6: Tenements assessed – Impact assessment modelling inputs

<table>
<tr><th></th><th>Fosterville</th><th>Ballarat</th><th>Costerfield</th><th>A1 Gold Mine</th><th>Union Hill Mine</th></tr>
<tr><td>Tenement number</td><td>MIN5404</td><td>MIN5396</td><td>MIN4644</td><td>MIN5294</td><td>MIN5146</td></tr>
<tr><td>Owner / ultimate parent</td><td>Fosterville Gold Mine Pty Ltd / Kirkland Lake Gold Ltd (Canada)</td><td>Balmaine Gold Pty Ltd / LionGold Corp (Singapore)</td><td>Mandalay Resources Costerfield Operations Pty Ltd / Mandalay Resources Ltd (Canada)</td><td>Centennial Mining Ltd / Centennial Mining Ltd (Australia)</td><td>Maldon Resources Pty Ltd / Centennial Mining Ltd (Australia)</td></tr>
<tr><td>Production estimate (ounces)</td><td>570,000[48]
(2019 expected)</td><td>42,000[49]
(FY 2019)</td><td>27,600[50]
(2018 production)</td><td rowspan="3" colspan="2">On 21 March 2019, Centennial Mining went into voluntary administration. Mining and processing facilities are operating on a limited basis while administrators undertake further investigations. Accordingly, A1 Gold Mine and Union Hill Mine have been omitted from the impact assessment modelling.</td></tr>
<tr><td>AISC
($ per ounce)</td><td>$471.64[51]
(Year to date average June 2019)</td><td>$1,578.00[52]
(FY 2019)</td><td>$1,493.00[53]
(31 March 2019)</td></tr>
<tr><td>Proven and probable reserves (ounces)</td><td>2,720,000
(31 December 2018)</td><td>128,900
(31 March 2019)</td><td>180,000
(1 December 2018)</td></tr>
</table>

Note: Stawell Gold Mine production and reserve data has not been included in this table or impact assessment modelling as the information is not publicly available.

5.1.2 Critical assumptions

ACIL Allen's modelling framework was developed with several assumptions, discussed briefly below.

5.1.2.1 Gold price (US dollar denominated)

A gold price of US$1,250 per ounce over the forecast period was used as a reference price. This is based on two sources, the trading range of spot gold over the past three years (see Figure 5), and the long-range gold price forecast produced by the World Bank.

[48] Kirkland Lake Gold, *Management's Discussion & Analysis: For the years ended December 31, 2018 and 2017*, accessed online at https://s21.q4cdn.com/967674075/files/doc_financials/2018/Quarterly/q4/MDA-Q4-2018-FINAL.pdf

[49] LionGold Corp, *Financial statement and dividend announcement for the financial year ended 31 March 2019*, accessed online at http://www.liongoldcorp.com/IM/EN/financials.html

[50] Mandalay Resources, *Management's Discussion and Analysis: For the Quarter and Year ended December 31, 2018*, accessed online at https://www.mandalayresources.com/wp-content/uploads/2018/05/MND_MDA_Q4-2018.pdf

[51] Kirkland Lake Gold, *Management's Discussion & Analysis: For the three and six months ended June 30, 2019 and 2018*, accessed online at https://s21.q4cdn.com/967674075/files/doc_financials/2019/q2/MDA-Q2-2019-FINAL-JULY-30-2019.pdf

[52] LionGold Corp, *Independent Qualified Persons Report for the Ballarat Gold Mine, Australia Effective 31 March 2019*, accessed online at http://liongoldcorp.listedcompany.com/newsroom/20190705_073416_A78_XMWSPF73U735A321.2.pdf

[53] Mandalay Resources, *Management's Discussion and Analysis: For the three months ended March 31, 2019*, accessed online at https://www.mandalayresources.com/wp-content/uploads/2019/05/MND_MDA_Q1-2019.pdf

Australia's Chief Economist expects the gold price to rise at an average annual rate of 4.2 per cent between 2019 and 2021, averaging US$1,440 an ounce in 2021.[54] At today's exchange rate that would represent an average Australian dollar gold price of around $2,100 per ounce—placing the price in between the high and very high gold price scenarios outlined below.[55]

5.1.2.2 Price scenarios

The Australian dollar denominated gold price is determined by the US gold price and the AUD/US exchange rate.

The range of price scenarios in this analysis have been developed from a reference gold price of US$1,250 (based on ACIL Allen's long-term trend analysis). The impact analysis modelling uses a long-term forecast for the exchange rate of US$0.67=AUD$1.[56] For simplicity, the scenarios represented below hold the AUD/US exchange rate as fixed.

Any variance from the reference case should be interpreted as reflecting a change in the currency, the gold price, or some combination of the two which yields the ultimate Australian dollar denominated gold price.

Price scenarios are outlined in Table 7 and mapped to roughly three decades of actual gold price movements in Figure 5. As at 15 August 2019, the gold price was about US$1,500 per ounce (AUD$2,200 per ounce)—almost reaching the very high gold price scenario considered in the modelling.

Table 7: Gold price scenarios[57]

	Gold price (US$)	Gold price (AUD$)
Reference	1,250	1,866
Very low	950	1,418
Low	1,100	1,642
High	1,400	2,090
Very high	1,550	2,313

[54] Office of the Chief Economist, *Resources and Energy Quarterly*, June 2019

[55] In late August 2019, the Australian dollar gold price exceeded the very high gold price scenario. Mining Journal, Australian gold price through $2,300/oz, accessed online at https://www.mining-journal.com/research/news/1370171/australian-gold-price-through-usd2-300-oz on 9 September 2019

[56] Westpac, *Australia & New Zealand weekly*, Week beginning 5 August 2019, accessed online at https://www.westpac.com.au/docs/pdf/aw/economics-research/WestpacWeekly.pdf

[57] Source: ACIL Allen

Figure 5: Historical gold price compared with the price scenarios used in the modelling (US$ per ounce)[58]

5.1.2.3 No deductions

The modelling does not account for the transportation and marketing deduction permitted by the Act as part of the net market value calculation. The Act allows for miners to deduct costs associated with transporting the mineral from mine to processing plant and costs for "marketing" their product against the sales price of their mineral. These costs have not been deducted from the revenue figures as they are not included in publicly available information.

The department considers these costs are likely to be relatively small given the premium price of gold and the relative geographic concentration of the gold industry in the state. These costs are included as part of the AISC of each mine but are not reported publicly by producers.

5.1.2.4 Threshold for mine to turn off production

As a simplifying assumption, the model assumes a mine owner will cease production if its operating margin (revenue less AISC) drops below zero in any scenario (pre-royalty—base case, or post-royalty—amendment option), and in each of the price scenarios. In reality, there are several factors which will determine whether a producer will operate or not, which may involve an operator producing gold for what may be deemed an operating loss (for example, a mine owner may continue to operate a mine if it is losing money if it expects the price to improve in the short term).

5.1.2.5 What has changed?

Since ACIL Allen prepared revenue estimates for budget decision-making purposes, several major developments have changed the gold industry in Victoria:

- Australian dollar denominated gold price has surged

[58] Perth Mint, Precious Metal Prices, Daily Gold Prices, accessed online at https://www.perthmint.com/investment_invest_in_gold_precious_metal_prices.aspx

- Through a combination of weakening AUD/USD exchange rates and increasing demand for gold, the Australian dollar denominated gold price is almost at a 10-year high. Gold price forecasts suggest gold will continue to rally over the coming years (see Section 5.1.2.1).

- Centennial Mining entered voluntary administration
  - On 21 March 2019, Centennial Mining (owners of A1 Gold Mine and Union Hill Mine) went into voluntary administration. Their mining and processing facilities are operating on a limited basis while administrators undertake further investigations. It is understood that the decision to enter voluntary administration was motivated by the business being unable to refinance its existing debt.[59]
- Stawell Gold Mine recommences pouring gold
  - In January 2019, Stawell Gold Mine achieved its first gold pour since closing in December 2016. While the department expects the Stawell Gold Mine to significantly contribute to the state's total gold production, it has been omitted from the impact assessment modelling due to a lack of publicly available information. In 2017, private equity firm Arete Capital Partners purchased Stawell Gold Mine. The new ownership group has elected to pursue an alternate mining strategy to the previous owner and is now focussing on exploiting the Magdala basalt dome via underground mining instead of the previous strategy of targeting the Big Hill deposit via open cut mining. As a result, estimates of the mine's resources and production profile produced by previous owner Kirkland Lake Gold are not suitable to use in the analysis, as the entire mining strategy has changed. For instance, open cut mining is centred on the movement of large volumes of material of relatively low grade, whereas underground mining relies on movement of relatively less material of much higher grades.[60]

5.1.3 ACIL Allen modelling

ACIL Allen modelling projected that a 2.75 per cent gold royalty, with a 2,500 ounce low production threshold and a gold price of $1,712 per ounce, would generate average revenue of $14 million per annum (over the 2019-20 Budget forward estimates), and concluded that all existing gold mines would continue to operate over the forecast revenue period, in the presence of a gold royalty.

Table 8: ACIL Allen's annual royalty revenue estimates ($ million)[61]

	2019-20	2020-21	2021-22	2022-23
Fosterville	7	13	13	13
Ballarat	1	2	2	2
Costerfield	1	1	1	1
A1 Gold Mine	0	1	1	1
Union Hill Mine	0	0	0	0
Total	**8**	**16**	**16**	**16**

5.1.4 Impact assessment modelling

The department's impact assessment modelling projects that a 2.75 per cent gold royalty, with a 2,500 ounce low production threshold and reference gold price of $1,866 per ounce, is likely to raise an average of $27.8 million per annum in royalty revenue over the next four years, or $111.3 million total.

---

[59] Centennial Mining. ASX Announcement, *Appointment of Voluntary Administrators*, accessed online at https://www.asx.com.au/asxpdf/20190322/pdf/443q3ys9s0bcld.pdf

[60] Victorian Government. 2018. *Media Release: Stawell Mine Reopens as Minerals Sector Booms*, 28 August 2018

[61] Based on the assumptions outlined in Section 0.
Because of rounding, potential royalty payments may be represented as 0 and numbers may not add.
Source: ACIL Allen.

The potential total royalty collected under the various gold price scenarios ranges from an average of $19.4 million in the very low gold price scenario ($1,418 per ounce) and $34.5 million in the very high gold price scenario ($2,313 per ounce).

The modelling assumes that a mine will stop production when the operating margin falls to zero. In Victoria, the gold mines with the highest operating cost, Ballarat and Costerfield, will only stop production if the gold price falls below the all-in sustaining cost of production of $1,578 and $1,493 respectively. At $1,418 (i.e. the lowest gold price scenario in this RIS) these two producers would have operating margins reduced to a point that may lead to them ceasing production, even without a gold royalty. Based on current gold price forecasts (see Section 5.1.2.1) it is unlikely that price scenarios below the high price scenario ($2,090) will be realised over the coming years.

Table 9: Impact assessment royalty estimates, based on a reference gold price of $1,866 per ounce ($ million)

	2019-20	2020-21	2021-22	2022-23	Average
Fosterville	14.5	29.1	29.1	29.1	25.5
Ballarat	0.9	2.0	2.0	0.0	1.3
Costerfield	0.6	1.3	1.3	1.3	1.1
Total[a]	**16.0**	**32.4**	**32.4**	**30.4**	**27.8**

Note: At current production levels the Ballarat mine is expected to exhaust its reserves in 2022-23.
[a] Because of rounding, potential royalty payments may be represented as 0.0 and numbers may not add.

For the complete output from this modelling see **Appendix 1**.

5.2 Multiplier effect

The multiplier effect describes the situation where money spent within an economy multiplies output as it flows from one business or person to the next. The state's increased capacity to provide public investment, derived from gold royalty payments, can therefore have long-run benefits for the Victorian economy, which exceed the payments themselves. The Organisation for Economic Cooperation and Development quantify the multiplier effect of government investment as between 1.1 and 1.3.[62]

5.3 Downstream impacts on the Mining Equipment, Technology and Services (METS) sector

Modelling shows that under forecast gold price scenarios, it is unlikely that the gold royalty will have a material impact on gold production in Victoria. Given this conclusion, it is also unlikely that the gold royalty will materially impact on the gold sector's demand for auxiliary services from the METS sector, or downstream businesses.

5.4 Regulatory costs

To reduce the administration costs for the government and the compliance cost for small producers, the gold royalty includes a low production threshold. Analysis by ACIL Allen found that a low production threshold of 2,500 ounces is the optimum threshold to isolate the state's small gold producers.

Gold producers currently lodge an Annual Activity Statement once a year (by 30 June) consistent with the requirements of other mineral resources. In a 2018 study on red-tape in the Victorian resources sector, ACIL Allen found that the average regulatory cost associated with the Annual Activity Statement was around $5,000.[63]

[62] OECD, Chapter 3: The Effectiveness and Scope of Fiscal Stimulus, *OECD Economic Outlook*, Interim Report and IMF, 2019

[63] ACIL Allen Consulting, *Red Tape in the Victorian Earth Resources Sector: Analysis of Regulatory Costs as at 31 October 2018*, Final Report, 2018

The additional cost of preparing an annual royalty return for businesses that were previously exempt is estimated to be between $1,500 to $3,000 per gold producer—between $4,500 and $9,000 for the whole sector.

The regulatory cost increase resulting from the proposed Regulation amendment is negligible when compared to the total regulatory cost faced by the gold sector. The 2018 red-tape analysis also showed that gold tenements incur about $110 million in annualised regulatory cost, with a high proportion of cost being incurred in reporting and audit compliance. Most of the total cost is attributable to native vegetation and native title costs mandated through other legislative instruments and separate from the Regulations.

5.5 Producer profitability is more sensitive to gold price and exchange rates than it is to royalty payments

Victoria's gold producers, along with other gold producers around the world, face dynamic market conditions, with their profitability largely dependent on fluctuations in world gold prices and exchange rates rather than royalty payments.

The two main factors that determine a Victorian gold mine's profitability are AISC and the Australian dollar denominated gold price. Over the past five financial years, the gold price in Australia has increased from around $1,400 per ounce (30 June 2014) to over $2,000 per ounce (30 June 2019)[64]—representing an increase of around 43 per cent.

The gold mine with the highest AISC is Ballarat ($1,578 per ounce). Consistent with the modelling, Ballarat would produce at any gold price above its AISC. The current gold price of $2,200 per ounce would have to fall by almost 30 per cent before that would occur. Australia's Chief Economist expects the gold price to remain above $2,000 per ounce for at least the next few years.

The volatile nature of gold prices suggests that operations with very low margins (2-3 per cent) are unlikely to be sustainable over the long-term, with or without a royalty. A small percentage change in producer profitability brought about by a 2.75 per cent royalty is therefore highly unlikely to cause any current producer to exit the market.

5.6 Summary of quantified costs and benefits

Table 10: Summary of costs and benefits (annual average, reference gold price $1,866 per ounce)

Costs to industry			Public benefits		
Gold royalty payment ($ thousand)	Regulatory cost ($ thousand)	Total ($ thousand)	Increased public investment ($ thousand)	Multiplier effect	Total ($ thousand)
27,800	4.5–9.0	27,804.5–27,809.0	27,800	1.1–1.3	30,580–36,140

Based on the reference gold price output of the impact assessment modelling, Table 10 shows that the public benefits derived from the government's increased capacity to provide infrastructure and services outweigh the costs to industry associated with making gold royalty payments, driven by the multiplier effect. This same conclusion is true for all gold price scenarios where current levels of production are unaffected, i.e. low gold price case and above. The proposed Regulation amendment clearly provides a net benefit to Victoria.

[64] Perth Mint, *Precious Metals Prices*, accessed online at https://www.perthmint.com/investment_invest_in_gold_precious_metal_prices.aspx

5.7 Qualitative assessment

Table 11 compares the base case option with the amendment option to illustrate that the amendment option is strictly preferable to the base case because it shares all the benefits of the base case, as well as additional benefits. These benefits to the broader community come at a private cost to gold producers, i.e. through foregone profits, however, the benefits outweigh the cost because of the multiplier effect discussed in Section 5.2.

Given that the amendment option is strictly preferable to the base case, the amendment option is the preferred option.

Table 11: Options comparison

	Base case (pre-royalty)	Amendment option (post-royalty)
The economic activity and job creation resulting from gold resource development in Victoria continues.	✓	✓
All Victorians are adequately compensated for the private development of gold resources in the state.	✗	✓
Victorian gold producers are likely to remain profitable, i.e. the gold price exceeds a producer's operating costs, under forecast gold prices.	✓	✓
Resources sector activity in Victoria is consistent with the purpose of the Act, as gold production is encouraged in a way that is compatible with the economic, social and environmental objectives of the state.	✗	✓

5.8 Competition assessment

A RIS is required to examine whether a proposal will affect competition or place a disproportionate burden on small businesses. Any regulatory proposal needs to be scrutinised carefully to assess whether it is having an adverse impact on the ability of firms or individuals to enter and participate in the market. As a matter of good public policy, it is a fundamental principle in Victoria that any new legislation (both primary and subordinate) will not restrict competition unless it can be demonstrated that:

- the benefits of the restriction outweigh the costs, and
- the objectives of the legislation can only be achieved by restricting competition.

A measure is likely to have an impact on competition if any of the questions in can be answered in the affirmative.

Table 12: Competition questions

Test question	Assessment	Reason
Is the proposed measure likely to affect the market structure of the affected sector(s) – i.e. will it reduce the number of participants in the market, or increase the size of incumbent firms?	Unlikely	Under expected gold price scenarios, no current producers would choose to exit the market as a result of the gold royalty. Where gold prices are lower than expected, the volatile nature of gold prices suggests that marginal gold producers would be at risk of exiting the market anyway, with or without a royalty.
Will it be more difficult for new firms or individuals to enter the industry after the imposition of the proposed measure?	Marginally	An investor's decision to enter the market is based on expectations of profitability. Due to the dynamic and volatile market conditions, and the presence of a royalty or resource rent in all other jurisdictions, it is unlikely a new entrant would be deterred from entering the market in Victoria based on the presence of a 2.75 per cent royalty alone.
Will the costs/benefits associated with the proposed measure affect some firms or individuals substantially more than others (e.g. small firms, part-time participants in occupations etc.)?	Yes	Medium-sized gold producers are disproportionally affected by administrative burden, given their smaller administrative economies of scale.
Will the proposed measure restrict the ability of businesses to choose the price, quality, range or location of their products?	No	The presence of the royalty will not create these restrictions.
Will the proposed measure lead to higher ongoing costs for new entrants that existing firms do not have to meet?	No	The same requirements will be imposed on new entrants compared with incumbents.
Is the ability or incentive to innovate or develop new products or services likely to be affected by the proposed measure?	Yes	Royalty payments under the preferred option will reduce the operating margins of gold producers slightly and may impact investment decisions that are at the margin.

With respect to competitiveness, independent analysis undertaken by ACIL Allen concluded that there is substantial scope for Victoria to have a relatively modest royalty on gold and still be one of the most competitive gold producing jurisdictions, based on royalty rates.

5.9 Small business impacts

It is Victorian Government policy for a RIS to specifically consider the impact of proposed amendments to regulatory proposals on small businesses. None of the current gold operations that will be liable for royalty payments from 1 January 2020 are small businesses. Like the rationale behind the downstream impacts in

Section 5.3, the preferred option is also unlikely to have material second order effects. Therefore, there are no anticipated small business impacts from the Regulation amendment.

5.10 Interstate comparison

Under the preferred option Victoria would cease to be the only gold producing jurisdiction in Australia (and the world) that does not impose a royalty or resource rent tax on gold production.

The preferred option of a 2.75 per cent royalty is broadly consistent with royalty regimes of other Australian states. See **Appendix 3** for further information.

5.11 Industry commentary on impacts

Since the gold royalty was publicly announced as part of the 2019-20 State Budget, several industry participants have made statements to investors and the media related to expected impacts.

5.11.1 LionGold Corp

Singapore-based LionGold Corp wholly-owns Castlemaine Goldfields. Castlemaine Goldfields is a gold explorer and producer with five tenements in central Victoria. Underground mining and ore processing at the Ballarat tenement is currently producing approximately of 46,000 ounces of gold per annum. In the 2019 financial statement, LionGold noted:

> Although the proposed royalty, if passed as law, might affect the operations and financial performance of Castlemaine Goldfields Pty Ltd, the Company is for the moment unable to accurately assess or determine the impact such royalty may have on operations and/or financial performance.[65]

5.11.2 Kirkland Lake Gold

Canada-based Kirkland Lake Gold is a gold mining company with mines in Canada and Australia. Kirkland Lake Gold owns the Fosterville Gold Mine, located 20 kilometres from the city of Bendigo. The Fosterville Mine is the largest gold producer in Victoria, currently producing between 570,000 and 610,000 ounces per annum. Kirkland Lake CEO, Mr Tony Makuch, has said that the royalty could impact future exploration and development decisions:

> If we continue to explore at the levels of about $50 million per year and capital investments in the order of magnitude of $150 million to $200 million per year back into the area, we expect we will be able to maintain that. We have a very high-grade resource at Fosterville, but as you are exploring into other areas you don't find those sorts of grades. You may still find things that, at different cost structures, could still be profitable and you could still grow from it. It is going to affect the economics of these other areas ... it potentially sterilises parts of the resource.[66]

Mr Ian Holland, Kirkland Gold Vice President of Operations Australia also said:

> Short-term impact I want to stress that we don’t see an impact on jobs, we don’t see an impact on our immediate investment into the local region and those things will continue. The short-term message that I want to reinforce is there is no risk to the business we will continue to invest, there is no risk to jobs and we will continue to invest in the communities that we operate in and that we all live in as well.[67]

---

[65] LionGold Corp. Financial statement and dividend announcement for the financial year ended 31 March 2019, accessed online at http://www.liongoldcorp.com/IM/EN/financials.html

[66] Australian Financial Review, *Gold royalty will hit harder than Vic claims: Kirkland, June 2019*, accessed online at https://www.afr.com/companies/mining/gold-royalty-will-hit-harder-than-vic-claims-kirkland-20190603-p51tto

[67] ABC Central Victoria, *Fosterville Mine Ian Holland*, June 2019, accessed online at https://www.abc.net.au/news/2019-06-28/fosterville-mine-ian-holland-1/11258198

> We're not fundamentally opposed to a royalty as a company, but we were surprised. We're bullish about the long-term future for Victorian gold, the resurgence at Fosterville shows that this can be done in the modern era.[68]

5.11.3 Mandalay Resources

Canada-based Mandalay Resources wholly owns the Costerfield gold-antimony mine, located about 50 kilometres southeast of the city of Bendigo. Mandalay expects Costerfield to produce between 41,000 and 51,000 ounces of gold in 2019 and projects its production to more than double 2018 volumes by 2021.[69] Mandalay Resources currently makes royalty payments on antimony production, but not gold. Mr James Sorahan, Executive Director, Minerals Council of Australia – Victorian Division said:

> Mandalay is already paying a royalty on the antimony it produces. So, it's another cost that they have to manage for operating in Victoria.[70]

5.11.4 Navarre Minerals

Navarre Minerals Limited is an Australian-based resources company with a portfolio of early to advanced stage gold projects in Victoria. Managing Director, Mr Geoff McDermott said:

> You would hope your margins were greater than 2.75 per cent if you were opening a new mine. I don't think we should be waving our arms about it, it is a very small amount and at the end of the day the minerals belong to the state and we want to pull our weight like other industries.[71]
>
> I think the opportunities are quite substantial in Victoria still, to find significantly more gold deposits than are currently being found.[72]

---

[68] ABC, *Victorian gold rush revival digs in as surging price, investment in deeper mines sees production double*, July 2019, accessed online at https://www.abc.net.au/news/2019-06-28/is-victoria-experiencing-a-second-gold-rush/11245426?pfmredir=sm&section=business

[69] Mandalay Resources, *Positioning Mandalay for a renewed future*, July 2019, accessed online at https://www.mandalayresources.com/wp-content/uploads/2019/07/2019-07-03-MND_Investor_Presentation_final.pdf

[70] Bendigo Advertiser, *Bendigo region mines could be impacted by "tax-grab", peak body fears*, May 2019, accessed online at https://www.bendigoadvertiser.com.au/story/6187756/its-preposterous-miners-dont-pay-gold-royalty-treasurer/

[71] Australian Financial Review, *Gold explorer says Victoria's royalty hike is 'only fair'*, May 2019, accessed online at https://www.afr.com/politics/gold-explorer-says-victoria-s-royalty-hike-is-only-fair-20190527-p51rj3

[72] Sydney Morning Herald, 'When you see it you can't mistake it'. The comeback of Victorian gold, June 2019, accessed online at https://www.smh.com.au/business/companies/when-you-see-it-you-can-t-mistake-it-the-comeback-of-victorian-gold-20190620-p51zne.html

6 Evaluation

The proposed Regulation amendment will be evaluated as part of a broad and comprehensive review of fees, rents, other royalties and levies scheduled for 2020-21. The evaluation strategy will consider baseline data and key performance indicators, such as production, AISC and number of industry participants to determine if the royalty has had a greater than anticipated impact on the state's gold industry. Ongoing consultation with industry groups and stakeholders will also take place to inform future decision-making, particularly in relation to business impacts.

In the meantime, the department will continue to engage with stakeholders on a regular basis to discuss the effectiveness of the Regulation amendment and any suggestions for change.

7 Consultation

It was not appropriate for the government to engage in consultation with individual parties prior to a public announcement of the government's decision on royalty policy. As most businesses affected by the gold royalty are publicly traded entities, there was a material risk that disclosing sensitive information to selected parties could have an impact on the market valuation of these businesses.

Following the public announcement on 27 May 2019, the department consulted industry participants and other areas of government to inform stakeholders and further understand potential industry impacts.

Consulted parties included:

- The Department of Treasury and Finance
- Minerals Council of Australia (Victorian Division)
- Association of Mining and Exploration Companies
- Kirkland Lake Gold (Fosterville Gold Mine)
- Castlemaine Goldfields Limited / LionGold Corp (Ballarat Gold Mine)
- Mandalay Resources (Costerfield gold-antimony mine)
- Arete Capital (Stawell Gold Mine)
- Committee for Ballarat
- Dart Mining
- GHD Consulting
- Gekko Systems

Parties affected by, or interested in, the proposed Regulation amendment discussed in this RIS are invited to make a written submission on the attached draft Regulations. Details for making a submission can be found on the Engage Victoria website https://engage.vic.gov.au/.

This RIS is designed to facilitate consultation with parties, by explaining the reasons for the proposed Regulation amendment. Parties may wish to comment on the approach outlined in this RIS and its conclusions.

7.1 Implementation and compliance

From 1 January 2020, a royalty, set at 2.75 per cent of the net market value of gold produced, will come into effect. The royalty will not apply to the first 2,500 ounces of production per annum, with mining licences being the only types of licence affected by this change.

In late 2019 and early 2020, ERR will seek gold production estimates from relevant licensees for the period 1 July 2019 to 31 December 2019 and forward production estimates for the period 1 January 2020 to 30 June 2020. ERR will also provide (or update as necessary) gold royalty guidance and support materials on the Earth Resources website, and undertake a full review of 2020 returns and associated documentation.

References

ABS. (2019). *6291.0.55.003 - Labour Force, Australia, Detailed, Quarterly, May 2019.* Released at 11:30 AM (CANBERRA TIME) 20/06/2019: Australian Bureau of Statistics.

ABS. (2019). *8412.0 - Mineral and Petroleum Exploration, Australia, June 2019.* Released at 11:30 AM (CANBERRA TIME) 03/06/2019: Australian Bureau of Statistics.

DIIS. (2019). *Resources and Energy Quarterly, June.* Canberra: Department of Industry, Innovation and Science.

DTF. (2019). *Victorian Budget 19/20, Service Delivery, Budget Paper No. 3.* Department of Treasury and Finance.

Earth Resources Regulation. (2018). *2017-18 Statistical Report.* Department of Jobs, Precincts and Regions.

Mineral Resources (Sustainable Development) (Mineral Industries) Regulations 2019.

Mineral Resources (Sustainable Development) Act 1990. (Vic).

OCBR. (2016). *Victorian Guide to Regulation.* Office of the Commissioner for Better Regulation.

OCBR. (2017). *Getting the Groundwork Right: Better Regulation of Mines and Quarries.* Office of the Commissioner for Better Regulation.

Old Treasury Building Museum. (2019, July). *Gold licence*. Retrieved from https://www.oldtreasurybuilding.org.au/gold-licence/

Subordinate Legislation Act 1994. (Vic).

Appendices

Appendix 1: Quantitative modelling output tables

Table 13: Impact assessment modelling output – Reference gold price ($1,866 per ounce; all prices in AUD)

	Average annual production (ounces)	Average annual revenue ($ million)	Average annual AISC ($ million)	Potential annual average royalty payment ($ million)	Potential royalty as a percentage of current operating cost (%)	Operating margin without royalty (%)	Operating margin with royalty (%)
Fosterville	570,000	1063.4	268.8	25.5	9.5	74.7	72.3
Ballarat[a]	42,000	60.1	50.9	1.3	2.5	15.4	13.3
Costerfield	27,600	51.5	42.2	1.1	2.6	18.1	16.0
Total	639,600	1,175.0	361.8	27.8	**N/A**	**N/A**	**N/A**

Table 14: Impact assessment modelling output – Very low gold price ($1,418 per ounce)

	Average annual production (ounces)	Average annual revenue ($ million)	Average annual AISC ($ million)	Potential annual average royalty payment ($ million)	Potential royalty as a percentage of current operating cost (%)	Operating margin without royalty (%)	Operating margin with royalty (%)
Fosterville	570,000	808.2	268.8	19.4	7.2	66.7	64.3
Ballarat	0	0	0	0	N/A	N/A	N/A
Costerfield	0	0	0	0	N/A	N/A	N/A
Total	**570,000**	**808.2**	**268.8**	**19.4**	**N/A**	**N/A**	**N/A**

Table 15: Impact assessment modelling output – Low gold price ($1,642 per ounce)

	Average annual production (ounces)	Average annual revenue ($ million)	Average annual AISC ($ million)	Potential annual average royalty payment ($ million)	Potential royalty as a percentage of current operating cost (%)	Operating margin without royalty (%)	Operating margin with royalty (%)
Fosterville	570,000	935.8	268.8	22.4	8.3	71.3	68.9
Ballarat[a]	42,000	52.9	50.9	1.1	2.3	3.9	1.8
Costerfield	27,600	45.3	42.2	1.0	2.3	7.0	4.8
Total	639,600	1,034.0	361.8	24.5	**N/A**	**N/A**	**N/A**

Table 16: Impact assessment modelling output – High gold price ($2,090 per ounce)

	Average annual production (ounces)	Average annual revenue ($ million)	Average annual AISC ($ million)	Potential annual average royalty payment ($ million)	Potential royalty as a percentage of current operating cost (%)	Operating margin without royalty (%)	Operating margin with royalty (%)
Fosterville	570,000	1,191.0	268.8	28.5	10.6	77.4	75.0
Ballarat[a]	42,000	67.3	50.9	1.4	2.8	24.5	22.4
Costerfield	27,600	57.7	42.2	1.2	3.0	26.9	24.7
Total	639,600	1,316.1	361.8	31.2	**N/A**	**N/A**	**N/A**

Table 17: Impact assessment modelling output – Very high gold price ($2,313 per ounce)

	Average annual production (ounces)	Average annual revenue ($ million)	Average annual AISC ($ million)	Potential annual average royalty payment ($ million)	Potential royalty as a percentage of current operating cost (%)	Operating margin without royalty (%)	Operating margin with royalty (%)
Fosterville	570,000	1,318.7	268.8	31.6	11.7	79.6	77.2
Ballarat[a]	42,000	74.6	50.9	1.6	3.1	31.8	29.7
Costerfield	27,600	63.9	42.2	1.4	3.3	34.0	31.8
Total	639,600	1,457.1	361.8	34.5	**N/A**	**N/A**	**N/A**

[a] *The Ballarat mine exhausts its reserve estimates in 2022-23, production in this period has been reduced accordingly.*

Note: Columns may not add due to rounding.

Appendix 2: Regulatory reform programme

Since 2006, successive Victorian Governments have made sustained efforts to reduce unnecessary regulatory burdens impacting business and the Victorian community. A key consideration has been to assess whether regulatory intervention is justified and, if so, the most efficient and effective way to do it. There have been number of red tape reduction programs by governments with each program setting a target of reducing red tape by 25 per cent.

As part of this process the Government has embarked on a program to reform earth resources regulation. This reform program is in part a response to reviews that highlighted the need to update the current legislation and improve the application and administration of the current. Recent reviews include:

- *Getting the Groundwork Right* (October 2017)
- Hazelwood Mine Fire Inquiry (May 2015)
- Victorian Auditor-General's office (VAGO) audit *Effectiveness of compliance activities: Departments of Primary Industries and Sustainability and Environment* (October 2012)
- Economic Development and Infrastructure Committee of Parliament (EDIC) Inquiry into Greenfields Mineral Exploration and Project Development in Victoria (May 2012).

In July 2017, the Victorian Government commissioned the Continuous Improvement Project with ERR through the Commissioner for Better Regulation. The Commissioner's report, *Getting the Groundwork Right – Better regulation of mines and quarries*, identified areas to improve the regulation of the earth resources sector in Victoria. The main improvements identified in this report are to:

- Simplify assessment processes for proposed mines and quarries, while strengthening the regulatory focus on the most complex risks.
- Provide clearer information to industry and the community about regulatory processes and decisions.
- Improve coordination across the regulatory system, including better engagement between ERR and other regulatory authorities.
- Ensure laws and regulations governing the earth resources sector are fit for purpose, based on modern technologies and best practice regulatory and governance frameworks.
- Ensure staff receive appropriate training and development.

The Victorian Budget 2018-19 included $12.7m to support the implementation plan. The funding is delivering a program of work that will simplify regulatory procedures and provide for an upgraded online application system.

In December 2017, the department established the Regulatory Transition Taskforce to respond to and give effect to the Commissioner's recommendations and to drive further improvements to regulatory arrangements. The department has issued several reports and operational policies resulting from the Commissioner's recommendations:

- *Getting the Groundwork Right – Better regulation of mines and quarries - Implementation Plan*
- Earth Resources Regulation Statement of Operating Change (Minerals)
- Statement of Operating Change – Our New Approach to Earth Resources Regulation.

The Government released *State of Discovery*, its Mineral Resources Strategy 2018-2023, in August 2018. This strategy aims to deliver a whole-of-government approach across the mineral exploration and mining life cycle. It sets a path for improving the administration and enforcement of Victoria's regulatory framework for managing the social, environmental and economic conditions of industry. The strategy highlights the government's priorities for investment in pre-competitive geoscience, the reduction of costs and red-tape for the minerals sector and building on Victoria's world-leading business conditions, infrastructure, corporate connectedness, educational excellence and workforce preparedness.

The vision of the strategy is to grow a responsible minerals sector that is valued by the community. It aims to grow investment and jobs in Victoria's minerals sector by building community confidence in social, environmental and economic performance of mineral exploration and development, improving Victoria's attractiveness for minerals investment, and strengthening Victoria's position as a global mining and mining services centre. A key area of the strategy is to deliver a modern, fit-for-purpose regulatory regime. This will be supported by developing a flexible outcomes-based tenure framework, increasing the transparency of work plans and release of industry exploration data, strengthening rehabilitation, post-closure and engagement obligations, and reviewing regulator governance arrangements.

The government's targets under the strategy include one million metres drilled for exploration by June 2023 (cumulative total over 5 years), exploration investment of $220 million by June 2023 (cumulative total over 5 years), and one significant mineral resource discovery by 2028.

Because of this work, reforms to the *Mineral Resources (Sustainable Development) Act 1990* are planned over the next few years and these reforms may result in changes to the Regulations.[73]

The reopened 2015 Hazelwood Mine Fire Inquiry identified inadequacies in the regulatory framework for mine rehabilitation. It reported that the regulatory framework was unclear and ineffective with regards to requirements for rehabilitation planning and execution, progressive rehabilitation, financial assurance (bonds), the role of the community and managing long-term land management risks post-closure. Various recommendations were made, followed by a government commitment to develop options for, and implement, policy, administrative and legislative reforms. The first of these reforms was the establishment of the Latrobe Valley Mine Rehabilitation Commissioner through the *Mineral Resources (Sustainable Development) Amendment (Latrobe Valley Mine Rehabilitation Commissioner) Act 2017* was passed in May 2017. Professor Rae Mackay was appointed as Latrobe Valley Mine Rehabilitation Commissioner on 30 June 2017. Further amendments to fulfil the Inquiry recommendations passed the Legislative Council on 10 September 2019.

Several regulatory reform options having also been developed by the department relating to rehabilitation and post-closure management. These address the Inquiry's recommendation to define certain aspects of rehabilitation and to establish criteria against which its completion could be measured.[74] Some other options, such as defining the term 'rehabilitation' outright, were considered but not pursued as options for the regulations as they are better suited to inclusion in the primary legislation. These improvements are being progressed through changes to the Mineral Industries and Extractives Regulations.

---

[73] The Mineral Resources (Sustainable Development) Amendment Bill 2018 was introduced into the Victorian Parliament in August 2018, but lapsed owing to the November 2018 election. This legislative amendments establish a Mine Land Rehabilitation Authority, clarify rehabilitation, closure and post-closure obligations, and set up a post closure fund.

[74] For example, 'progressive rehabilitation' is defined specifically as rehabilitation *'during…. exploration or mining…. that contributes to achieving the land form set out in the licensee's work plan*'. This definition is used by the new regulations to establish accountability for genuine progressive rehabilitation towards the final land form(s), not activities that occur incidentally as part of operations, helping to reduce rehabilitation risk. Similarly, the new framework requires licensees to set out 'completion criteria' in their rehabilitation plan to underpin final rehabilitation. The criteria may be based on State Environment Protection Policies, industry standards, codes of practice, guidelines or other instruments as benchmarks against which hydrogeological and geotechnical characteristics of rehabilitation are measured. The completion criteria are used to measure a series of governing objectives relating to land and water, which collectively amount to whether rehabilitation achieves a safe, stable and sustainable final landform(s), as set out in the rehabilitation plan.

Appendix 3: Regulatory arrangements in Australian and international jurisdictions

ACIL Allen was commissioned to evaluate Victoria's royalty regime. ACIL Allen's analysis of gold royalty regimes found that Victoria and Mexico were the only two gold producing jurisdictions not to have a gold royalty or resource rent tax. On 1 January 2014, Mexico introduced a 7.5 per cent royalty on mining activities based on the net revenues of production not including depreciation. The Mexican mining royalty is tax deductible resulting in an effective tax of 5.25 per cent. In addition, a 0.5 per cent royalty was levied in Mexico on gold to finance the environmental impacts of precious metal mining.

Table 18: Gold royalties, Australian and international comparison[75]

Jurisdiction	Royalty rate and details	System
	AUSTRALIA	
Western Australia	2.5% of the royalty value of the gold metal produced. No royalty is payable in respect of the first 2 500 ounces of gold metal produced during a financial year from gold bearing material produced or obtained from the same gold royalty project.	Ad valorem
New South Wales	4% ex-mine value (value less allowable deductions).	Ad valorem
Queensland	Variable rate between 2.50% and 5.00% (varying in 0.02% increments) of value, depending on average metal prices. First $100,000 exempt.	Ad valorem
South Australia	3.5% of net market value if in a metal form, concentrates at 5%; a 2% rate for new mines for the first 5 years of production.	Ad valorem
Tasmania	Royalty is payable at the rate of 1.9% of Net Sales, plus profit. A rebate of up to 20% is available for the production of a metal within the State. Maximum royalty payable is 5.35% of net sales.	Hybrid
Northern Territory	The greater of: (a) 20 per cent of the net value, less $10 000 (b) or the percentage of the gross production revenue applying to the royalty year as follows: (i) 1 per cent for the royalty payer's first royalty year that begins on or after 1 July 2019 (ii) 2 per cent for the royalty year that follows the royalty year mentioned in subparagraph (i) (iii) 2.5 per cent for each royalty year that follows the royalty year mentioned in subparagraph (ii). To accommodate small-scale miners, for royalty years commencing on or after 1 July 2019, royalty is only payable where the annual gross production revenue of a production unit exceeds $500,000.	Profit

[75] Source: ACIL Allen

Jurisdiction	Royalty rate and details	System
	INTERNATIONAL	
China	Between 0.5% and 4%.	Ad valorem
USA	Varies by state, 2% to 5%. e.g. Nevada 2% to 5% profit royalty (sliding scale depending on profit).	Profit
Russia	6%	Ad valorem
Peru	Between 1% and 12%.	Ad valorem
South Africa	Between 0.5% and 5% depending on level of processing.	Profit
Canada	Varies by province, e.g. British Columbia 2% ad valorem, Quebec 16% profit based, Ontario 10% profit based for non-remote mines and 5% profit based for remote mines.	Mixture
Mexico	7.5% plus a 0.5% precious metals tax.	Ad valorem
Ghana	5%	Ad valorem
Uzbekistan	5%	Ad valorem
Sweden	0.2% on mining permits issued after 1 May 2005.	Ad valorem
Germany	10%	Ad valorem

In 2015 the former Western Australian Government undertook a review to evaluate the structure of the State's mineral royalty rates and make recommendations on possible reform options. Among the 18 recommendations in the final report were recommendations to increase the ad valorem rate for gold from 2.5 per cent to 3.75 per cent, and that projects producing more than 2,500 ounces of gold a year no longer be eligible for the gold royalty exemption for the first 2,500 ounces.

In its first budget after being elected in March 2017, the government sought to act on the recommendations of the review. Through the 2017-18 Budget, the government announced the introduction of a tiered royalty rate from 1 January 2018, with the current 2.5 per cent ad valorem rate to apply for each month when the gold price (averaged over the month) is A$1,200 per ounce or less, and an increased rate of 3.75 per cent) when the price is above A$1,200 per ounce. The budget measure also included the removal of the gold royalty exemption on the first 2,500 ounces of production for mines producing more than 2,500 ounces per year from 1 July 2018.

After intensive lobbying from the gold sector and the decision by the Opposition to oppose the increase, the measure was not passed in Parliament.

Authorised by the Hon. Jaclyn Symes MP
Department of Jobs, Precincts and Regions
1 Spring Street Melbourne Victoria 3000
Telephone (03) 9651 9999

This document is also available in an accessible format at engage.vic.gov.au