



# MINERALS COUNCIL OF AUSTRALIA

## SUBMISSION TO THE VICTORIAN GOVERNMENT'S REGULATORY IMPACT STATEMENT ON IMPOSING ROYALTIES ON GOLD

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OCTOBER 2019

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## EXECUTIVE SUMMARY

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The proposed gold royalty is fundamentally flawed and requires urgent reform to reduce unintended impacts on regional Victorian mines, supporting businesses and communities.

MCA Victoria does not oppose the introduction of a carefully considered gold royalty that is fit for purpose for Victoria. MCA Victoria does oppose the proposed royalty as it constitutes a large new tax on a regional industry without consultation and without warning.

The royalty must be redesigned after a proper consultation process. MCA Victoria has put forward modest reforms to the royalty. These reforms raise revenue while minimising the unintended consequences and risks posed by the proposed royalty to this regional industry.

As currently proposed, the gold royalty will not meet the government's own objective of securing a sustainable revenue source to benefit the community.

Victoria's mining industry seeks a fair and transparent consultation process. The royalty has been rushed and poorly designed. The MCA seeks a delay in the implementation of the royalty and a withdrawal of the regulation until after a comprehensive consultation process in 2020.

The policy making process is an example of very poor process leading to flawed policy which will impact regional jobs and industry. A one month consultation period as part of the RIS process is inadequate. The royalty was announced in the Budget with no consultation.

Very limited opportunity has been provided for MCA Victoria to provide comments back to the government since the Budget announcement. Detail on the information provided to the government by the industry on the impacts of the royalty and modest proposals to reform the flaws in the announced royalty are not reflected or even acknowledged in the RIS.

All states have different gold royalty regimes tailored to their gold industries. Most states tax gold at a lower rate than other commodities. This reflects the fact that gold involves more costs in mining and processing and gold is often more marginal business than other minerals.

The government's proposed royalty rate is higher than Western Australia's - the biggest gold mining state. It is a tax designed for a potentially one off gold price. It is not designed with Victoria's unique geological characteristics, operating environment or understanding of the gold market and will therefore not prove to be an enduring tax reform.

Imposing a large new tax on each of Victoria's four gold mines with little notice will have an impact. It is nonsense that the RIS's flawed modelling attempts to claim otherwise. The flaws in the RIS cast doubt on the credibility and findings of the analysis and the RIS process.

Independent analysis of the RIS finds that the 'quantitative assessment contain errors of both fact and logic', and that the 'royalty is more likely than not to have an effect on the level of activity in the sector, the total economic costs are likely to exceed benefits.' Further, the 'Imposition of a royalty in the proposed form poses a significant risk of forcing gold producers with higher production costs out of business. Exit of these companies would create adverse effects for the local economy, likely offsetting the net benefit of transfer of profits to government revenues.'

It is important to note that although smaller gold mines account for only 23 percent of overall state production, they employ about 50 percent of all gold mine workers in the State.

Reform of all fees and charges on exploration and resources projects, as proposed by the government in 2020, must go hand in hand with proper consideration of the new royalty.

Regional Victorian workers, small businesses supplying goods and services, and local communities benefit from Victoria's gold mines. Without reform of the gold royalty structure, this is put at risk. A fair and genuine consultation process is critical.

## 1. GOLD MINING'S CONTRIBUTION TO REGIONAL DEVELOPMENT

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- All Victorians benefit from Victoria's gold industry. Victoria's minerals and mine equipment, technology and services (METS) sectors make a substantial contribution to the state supporting 88,000 jobs in Victoria.
- Gold production occurs at four operations near Bendigo, Heathcote, Ballarat and Stawell employing thousands of workers in high paying jobs. A poorly designed gold royalty is a risk to the regions. The impact on local spending and wages from the closure of one gold mine would outweigh the entire revenue benefit of the Government's royalty.
- A strong minerals industry creates jobs and investment to support stronger, economically diversified regional economies. Mining generates skilled, high paying jobs outside the major cities.

### Gold mining is critical to regional development in Victoria

All Victorians benefit from gold mining through the high paying jobs and the tens of millions of dollars of goods and services purchased from supplying businesses across the state every year.

As a regional industry, mining is particularly critical to jobs and investment to support diverse regional economies. Mining projects provide economic stimulus, population growth, new infrastructure and services to regional centres.

16,000 Victorians are employed in the broader resources sector. Including the METS sector, almost 90,000 Victorian jobs rely on mining, including the engineering, technology, manufacturing and services jobs in metropolitan Melbourne and regional towns.<sup>1</sup> The average wage of Victorian gold miners is around \$120,000 per annum mostly in regional areas.

The minerals and METS sectors account for around four per cent of Victoria's Gross State Product (GSP). The combined economic contribution to the Victorian economy was estimated to be worth \$13.6 billion in 2015-16.<sup>2</sup>

Victorian mines buy local. Around three quarters of their spending stays in Victoria. The industry spent more than \$300 million in wages, goods & services and taxes in Victoria last year.

Mining pays all the state taxes and charges other businesses pay plus special mining charges. The gold royalty would constitute a tax on the regions that comes in addition to state user pays charges, other royalties, payroll tax and stamp duties already flowing to the state government. Mining paid \$101.6 million in 2017-18 in minerals license fees, land rentals and royalties.<sup>3</sup>

Gold production occurs at four operations near Bendigo, Heathcote, Ballarat and Stawell and employs thousands of workers in high paying jobs. Mandalay's gold and antimony mine employs over 200 people around Heathcote. Ballarat Gold Mine employs 161 people and 76 contractors. Kirkland Lake Gold Mine near Bendigo employs 611 people and the reopened Stawell Gold Mine employs almost 200 people.

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<sup>1</sup> Deloitte Access Economics, *Mining and METS: engines of economic growth and prosperity for Australian, Victoria in focus:* fact sheet, Prepared for the Minerals Council of Australia, 2017.

<sup>2</sup> Ibid.

<sup>3</sup> [Earth Resources Regulation, 2017-18 Statistical Report](#), p. 16.

## Box 1: Mining in Victoria

### Bendigo

The City of Greater Bendigo is 'proudly built on a gold rush legacy stretching back to the 1850s.' Today Bendigo hosts the Kirkland Lake Fosterville Gold Mine employing over 600 people and the gold-antimony mine of Mandalay Resources Costerfield Operations employing over 200 people.

### Ballarat

The Ballarat Gold Mine employs 161 people and 76 contractors in the Ballarat region. The mine spends around \$55 million in Victoria each year and 110 local Ballarat suppliers work for the mine.

Gekko Systems, a Ballarat based globally exporting METS firm, locates its graduate training ground and lab at the mine with 17 employees.

### Stawell

The Stawell Gold Mine reopened on 1 January 2019 and employs almost 200 people. The mine's local procurement policy undertakes around three quarters of its spending within Victoria.

Small and medium sized manufacturing firms and global engineering and services businesses employ thousands of Victorians across the state, including in Bendigo, Stawell and Ballarat, producing innovative products. Victoria's gold mines are a critical part of the mining and METS ecosystem in Victoria with small and medium sized Victorian firms developing and manufacturing products which go on to be exported around the world. Without Victorian mines, there would not be a vibrant METS sector and the associated value-adding activities.

To realise the benefits of mining, Victoria should look at how it can be more competitive, not impose new charges – especially on smaller mines that want to grow. Imposing new taxes which cruel a mine's chances of growing into larger and more profitable mines generating greater benefits to the community works against sharing the benefits.

Imposing a large new tax of millions of dollars a year on each of Victoria's four gold mines with only a few months' notice will have an impact. A properly designed royalty informed by consultation (see Attachment A) can minimise these impacts and meet the government's revenue aim.

### A poorly designed gold royalty is a risk to the regions

For \$16 million in revenue per annum (Budget estimate), the gold royalty compares to over \$300 million which is spent by Victoria's gold mines in Victoria alone on wages, goods & services from local businesses, taxes, existing royalties and community grants.

The actual cost of the royalty is more likely to be in the order of \$30 million per annum falling on four mines because the Treasury modelling understates forward production of gold. Still, the closure of just one mine would wipe out the entire benefit of the royalty flow.

Royalty risks		Estimated royalty revenue per annum
2018 Gold Mining Spending in Victoria		
Wages	\$122 million (average wage approx. \$120,000)	\$16 – \$30 million
Goods & Services and community grants	Approx. \$175 million	
Other state taxes and royalties	At least \$5 million	
<b>TOTAL</b>	<b>\$302 million at risk</b>	

Threats to small gold mines pose further spill-over threats to technology and METS start-ups. The retention and creation of world class innovation eco-systems in regional areas relies on vibrant gold mining operations.

### ***Unquantifiable costs to Victoria***

In addition to risking wages and local procurement, the royalty will:

- Result in future projects that don't proceed rendering them economically unviable
- Cut into exploration spending which will curtail mine life and impacts future discoveries
- Close mines earlier than they otherwise would as the royalty cuts into cash flow, the resource grades decline and costs increase as a mine gets deeper underground
- Puts at risk hundreds of local suppliers in regional Victoria providing goods and services to Victorian mines.

It is impossible to calculate these impacts but they would be significant and undermine a sustainable royalty flow over the longer term and disproportionately fall on regional Victorian communities.

### **Socio economic measures – mining regions**

Most regional areas that are prospective in gold experience higher levels of economic disadvantage than state wide averages. Developing Victoria's gold resources is critical to reduce inequality gaps with Melbourne by creating economic opportunities in regional areas.

A number of the most disadvantaged areas of regional Victoria are located close to gold mining regions and in areas of exploration activity and opportunity for mine development. This includes the Central Goldfields, Loddon, Northern Grampians, Ararat and Pyrenees local council areas (LGAs). See attachment B for a socio-economic analysis.

Parts of regional Victoria with expanding gold mines and good gold prospects have higher levels of unemployment, lower educational attainment rates and lower household income than state averages.

Mining provided high paying and mostly full time jobs. Over 90 per cent of mining jobs nationally are fulltime and many are in Science, Technology, Engineering and Maths (STEM) fields. These are just the sort of jobs regional Victoria needs.

MCA Victoria has called for genuine reform of existing mining fees and charges and supports the RIS indication that the current regime will be reviewed in 2020. Existing minerals companies pay rents for exploration, retention and mining licences. This reform process will be an opportunity to look at the overall cost competitiveness relating to fees, taxes and charges in Victoria to help improve Victoria's competitiveness and reputation among investors. The gold royalty should be delayed and considered as part of this process in 2020 with a comprehensive consideration of taxes on mining and proper and transparent consultation which has not occurred with the royalty announcement.

## 2. REFORMS TO THE PROPOSED ROYALTY

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- The royalty should be delayed by 12 months until a full and transparent policy consultation process takes place with the community, industry and local councils to design an enduring gold royalty regime tailored to Victoria.
- The proposed structure of the royalty is flawed as it does not account for Victoria's geological characteristics. Without changes, it will have unintended impacts on jobs and regional development.
- Victoria's gold royalty should be fit for purpose and designed for Victoria's unique deposit profiles, costs and challenges. A tax regime that is fair and does not distort against emerging mines developing into profitable royalty paying mines is crucial and royalties should be re-invested in regional Victoria.

### A proper consultation process

Victoria's mining industry does not oppose the introduction of a gold royalty that is informed by an open and transparent consultation process. Unfortunately, the government's Budget announcement involved no consultation and came without warning to the industry, mining communities, supporting local suppliers or regional councils.

Proper consultation with the industry would have pointed to the challenges and unintended impacts of the government's royalty on Victoria's gold industry.

As a result of the lack of consultation, the gold royalty is a seriously flawed design that is a threat to future industry growth, investment and to regional development in Victoria.

To ensure the gold royalty is designed properly from the start, the government needs to delay implementation and start again with an open policy consultation process. Other states have undertaken similar processes starting with discussion papers and full consideration of various proposals.

Tax is complex and fits within a broader investment policy context. To secure enduring tax reform, proper process with opportunity for input and detailed analysis is an essential prerequisite.

### A redesigned gold royalty structure that will work for Victoria

The royalty should be reformed with the following features to tailor it to Victoria's circumstances and avoid the unintended impacts of the current design in the RIS:

- *An exploration offset* to remove distortions against smaller and start up mines
- *A progressive royalty rate* structure with a gold price floor to reduce impacts on Victoria's competitiveness for global gold investment
- *Staged implementation* to reduce retrospectivity.

These reforms are outlined in more detail in attachment A.

This royalty structure would deliver a gold royalty regime that is 'fit for purpose' for Victoria by tailoring the regime to take into account Victoria's gold deposit profile, costs and challenges. It builds in incentives to encourage exploration and maximise mine life which is critical to gold mining.

It also meets the policy aim of securing a sustainable revenue flow to the Victorian community while minimising the impacts on local investment from gold operations.

Other states have similar features in various forms to deal with the inefficiencies of royalties.

Importantly, it provides an enduring royalty system fit for Victoria's unique characteristics and avoids the need for ad-hoc special treatment for individual mines in years of low gold prices to which the current royalty structure designed for a high gold price cannot respond.

These modest changes would create a royalty regime that can weather the ups and downs of the gold price and allow smaller mines to develop into larger more profitable mines. This will help ensure Victoria benefits without risking jobs and spending in regional Victoria.

### **1. An exploration offset**

An exploration offset would allow exploration expenditure to be deductible against a royalty liability.

An offset is the most effective way to remove distortions against ongoing exploration costs unique to gold mining and required to extend mine life.

An exploration deduction would:

- Recognise that ongoing sustaining exploration costs is the lifeblood of gold mines to extend mine life
- Limit impacts of cutting back on exploration spending by start-up and smaller mines in expansion stages
- Reduce the uncompetitive nature of the royalty on all mines
- Help encourage exploration spending across the state.

Eligibility for the deduction against royalty would operate as a non-refundable offset equal to the amount of 'sustaining exploration expenditure' up to a cap to reduce revenue impacts if mines have particularly large exploration spending in any one year.

Forward development expenditure to progress an indicated or measured resource to a higher standard would not be eligible. Greenfield spending on separate Exploration Licences would be included to drive exploration in Victoria and simplify the offset.

### **2. A progressive royalty rate structure**

A tiered progressive rate structure (combined with an exploration offset) would deliver a fairer and more competitive royalty regime. It would account for Victoria's industry comprised of smaller mines and also help limit cash flow impacts in the critical early development years of new mines.

A gold price floor below which no royalty is payable should be introduced as part of the tiered rate structure. A progressive tiered rate structure and a gold price floor would reduce the punitive impact of a royalty in lower gold price years. Other states have forms of a tiered rate structure and price floors.

### **3. Staged implementation of the new royalty**

Staged implementation of the new tax would avoid a sudden tax hit on 1 January 2020.

Phased implementation would allow mines to factor in the tax over time. WA's introduction of a gold royalty in 1998 was phased in with a rate of 1.25 per cent applying from 1 July 1998 increasing to 2.5 per cent from July 2000. The Northern Territory's recent introduction of a royalty floor was also phased in.

A new project incentive should be built into the royalty structure to reduce a royalty liability for 2-5 years from the date of commencing mining to allow capital investment to be paid back and allow for the cash flow and operating risks that are common in the opening months of a mine. New mines in South Australia qualify for a concessional rate for the first five years.

### **4. Maximise community benefit with funds directed locally in host communities**

Funds raised through royalties should be spent locally in host communities on social and community infrastructure to address disadvantage and improve the business environment for all industries. Expenditure should be locally driven involving councils, industry and the community.

The royalty structure proposed by the MCA Victoria would deliver a gold royalty regime that is fit for purpose for gold and for Victoria. The reforms would meet the Government's aim of securing a sustainable royalty revenue flow. Importantly, the MCA's proposed reforms create incentives to encourage exploration and maximise mine life.

The MCA reforms are carefully considered and would address the flaws with the current royalty framework.

### **The government's royalty is flawed**

A 2.75 per cent royalty as applies to all commodities with no deductions (other than limited marketing costs):

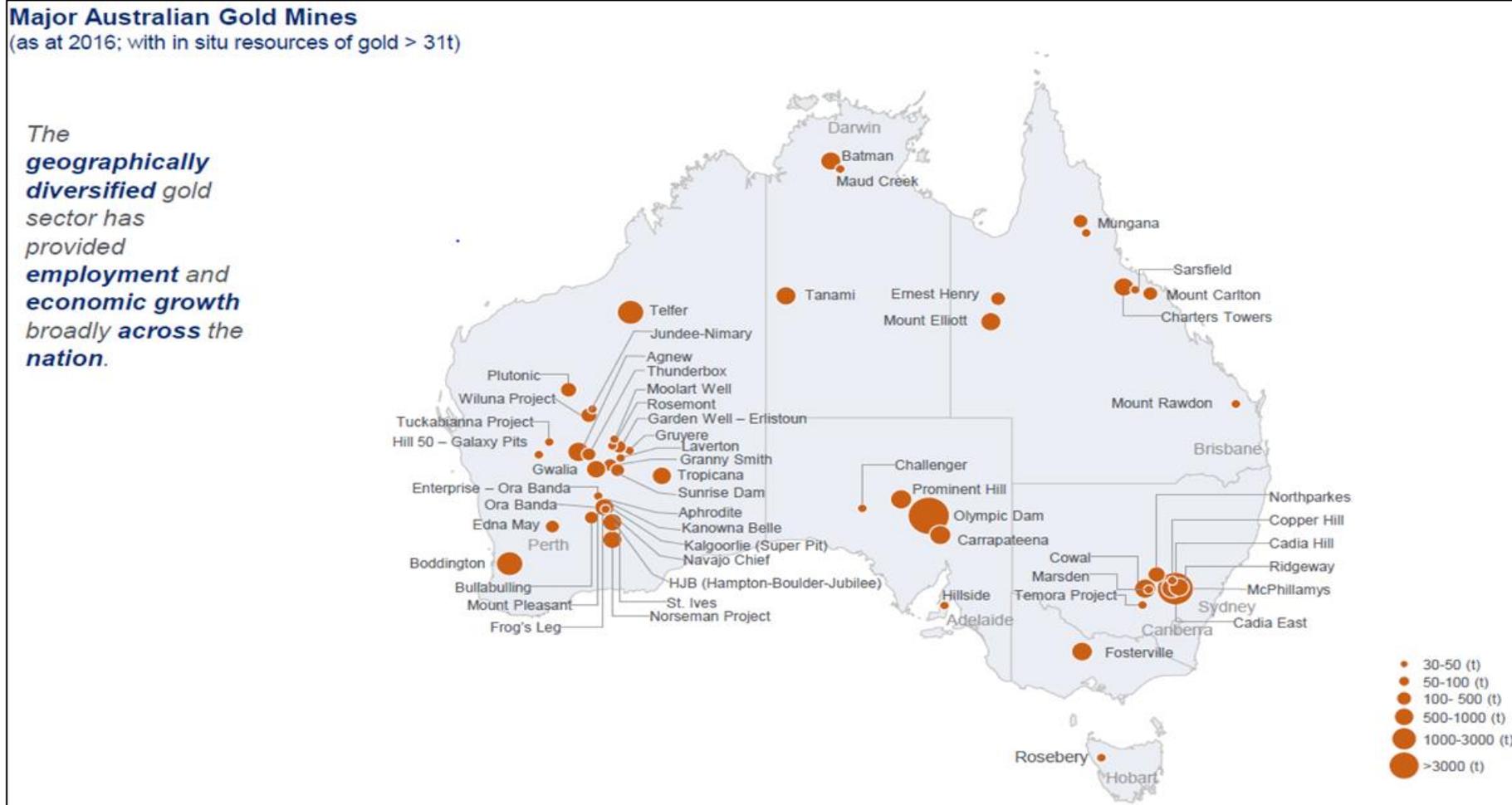
- Is not tailored to gold's unique underground, exploration and processing costs or to Victoria's industry which is characterised by smaller mines
- Does not account for the ongoing major exploration costs required to sustain gold mining operations
- Takes no account for start-up mines or small mines in lean years of low prices.

These flaws work against smaller, marginal and start up mines and undermine ongoing exploration and reinvestment by all gold mines regardless of size.

The royalty, as currently designed, will therefore not meet the governments' policy aims of raising long term sustainable royalty flows or improving community licence. The royalty would risk closing mines earlier than they otherwise would by curtailing mine life, reduce expenditure on ongoing sustaining exploration and future reinvestment in mines in Victoria.

### 3. MAJOR AUSTRALIAN GOLD MINES

- Victoria competes for investment in gold mining with **every Australian jurisdiction** in a globally competitive industry.
- Victoria's gold industry is mostly characterised by **smaller underground mines**.
- **WA produces 68 per cent of Australia's gold** and has a lower royalty rate than that proposed by the government for Victoria.



## 4. ANALYSIS OF RIS CLAIMS AND MODELLING

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- The RIS economic modelling is based on flawed assumptions. It does not constitute a rigorous inquiry into the costs, benefits or risks associated with the government's royalty proposal. Independent modelling (attached) finds that the RIS 'quantitative assessment contain errors of both fact and logic.'
- The RIS includes selective quotes from mining companies that do not reflect the position of the industry and does not include any input that has been provided by industry on the impacts which were provided to government after the Budget announcement.
- The economic modelling uses all in sustaining costs which is the wrong metric to judge the impact of the royalty on Victorian mines. It does not take into account all in costs including essential ongoing exploration costs which are higher. The finding that impacts will be minimal bear no semblance to the reality of mining gold in Victoria.

### Mining in Victoria

The RIS and the modelling demonstrate an unfortunate lack of understanding of Victoria's mines, geology and operating environment leading to incorrect conclusions on the impacts of the royalty in the RIS. The conclusion that the royalty will have a small impact on profitability is wrong.

Without reform, the royalty would have a significant impact on smaller and marginal gold producers in the expansion phase and increase the operating costs of gold mining in Victoria. Unintended impacts can largely be overcome while retaining the Government's royalty framework with a fair consultation process.

The RIS claim that Victoria would have 'a relatively modest royalty on gold and still be one of the most competitive gold producing jurisdictions, based on royalty rates' does not account for Victoria's unique and more costly geology. It also ignores other factors that differ by jurisdiction such as the challenges of mining in Victoria as a more densely populated state and the state's regulatory frameworks.

Victoria's gold industry has unique characteristics which require a tailored implementation of a gold royalty.

Victorian gold orebodies are typically narrow vein and nuggety with irregularly distributed deposits. Narrow vein deposit mining is difficult for mine planning and requires significant more production costs to access and mine the ore body on a per tonne basis. These characteristics of Victorian gold deposits make it more difficult to 'prove-up' sufficient gold reserves to support a reasonable mine life and secure the necessary finance to develop a new mine.

Larger, more predictable ore bodies, not typical in Victoria, can be mined cheaper and have the advantage of predictability allowing for easier extraction techniques. WA's disseminated deposits for example, have greater grade predictability, leading to lower costs to mine.

The shorter reserve life of Victorian gold mines makes exploration the lifeblood of sustaining gold operations in the state. Gold mining requires ongoing exploration investment to keep replenishing ore reserves and resources to maintain mine life. Without changes, royalty receipts will come at a cost to investment in exploration.

The central claim of the RIS modelling that profitability is dependent on the gold price and exchange rates rather than a royalty or tax payments is wrong. The RIS goes on to assume that a 2.75 per cent royalty (which it wrongly suggests is competitive) is unlikely to impact producers in Victoria. This severely underestimates the magnitude of such a royalty on all mines in Victoria, particularly on smaller and marginal mines which will face a bill in the millions of dollars annually whether profitable or not.

To suggest that a large new tax not related to profitability or ability to pay makes little difference to a mine demonstrates a lack of understanding of the risks, and costs of running any business,

particularly for mining operations in a globally competitive market. It undermines the credibility of the RIS.

The key flaws in the RIS modelling methodology are that it underestimates the costs of mining by using 'all in sustaining costs', assumes a high gold price when the gold price is in reality volatile, and underestimates the impact of a new tax on the cost base of mining in Victoria. Independent analysis by Castalia (attached) outlines in detail the errors in the RIS quantitative modelling.

Crucially, a royalty is a cost that is entirely invented by government. Neither the government, nor miners, can control gold prices or exchange rates, but a poorly designed royalty is an own goal imposed and determined by government.

The government need only consult with the four gold mining companies in Victoria as part of a proper process to understand costs and impacts, not engage in poorly devised theoretical models that have not been informed by realities on the ground or in the gold market.

The assumptions in the RIS only prove the flaws in the current design of the royalty which is designed for a high price environment and is not suited to Victoria's geology and smaller gold mining sector.

### **All in sustaining costs assumption**

All in sustaining costs is not the right metric. It reflects historical costs, does not account for ongoing exploration costs and takes no account for costs on a forward looking basis to analyse a forward looking policy of a new tax. As noted by Castalia's analysis, 'the forward looking quantitative assessment is based on cost numbers that are neither informative nor reliable' and all in sustaining costs do 'not comprehensively account for all the costs incurred in gold production.'

In fact, the cost measure used underestimated costs of a mine remaining in business by around 30 per cent.

A more accurate measure of costs against which to measure the impact of the royalty is 'all-in costs' and an acknowledgment of the fact that gold production can vary greatly from year to year.

### **Gold price volatility**

The government's flat royalty is based on a high price environment. It cannot stand the test of time because it does not adjust for times of low gold prices.

Gold is currently at historically high levels and the forecasts in the modelling which show a gold price above all in sustaining costs could very easily prove not to be true. Mining companies cannot plan mines based on historically high prices and the gold royalty equally should not assume such high prices going forward.

The price assumptions in the RIS glosses over the likelihood of a high price forecast and ignores the fact that prices have been lower than the RIS forecast price for long periods of time in the past. As Castalia notes, 'The gold price forecast used in the RIS both likely overstates the reference AUD price of gold and does not account for the variability of gold prices.'

### **Multiplier effect**

The RIS claim that the multiplier effect from public investment from royalty revenues will deliver greater benefits than the payments themselves is a dubious assumption.

As outlined, for \$16 million (Budget estimate which accounts for 0.02 per cent of total government revenue) the risk to imposing a sudden tax on only four regional taxpayers outweighs any minor benefit the state would receive from the tax. The royalty impact on the ability for gold mines to reinvest in exploration and drilling rigs to maximise resource extraction for the state.

These flaws are outlined in detail in the Castalia report attached.

## **Factual errors and bias**

Unfortunately, the RIS is punctuated with bias and selective quotes which do not reflect the commentary and input the minerals industry attempted to make on the design of the royalty following the Budget announcement.

A number of government claims and RIS findings are incorrect as set out below.

## **Myths and Facts**

### **Myth: Victoria's royalty will be lower than other states**

Victoria would have a higher royalty rate than Western Australia - the biggest gold mining state producing 68 per cent of Australia's gold. WA's royalty rate is lower than Victoria's proposed rate (2.5 per cent versus 2.75 per cent).

Most of WA's gold mines are larger, in more remote areas and the mining regulatory system is more efficient than Victoria's.

Boddington, WA's largest gold mine produces more gold every month than Ballart Gold Mine or the Costerfield mine near Heathcote produce in an entire year. But Victorian mines would be taxed higher.

The comparison table in Appendix 3 of the RIS makes a basic comparison of gold royalties across various jurisdictions.

Comparing royalty rates takes zero account of fundamental difference in mine size and geology.

All states have different gold royalty regimes tailored to the gold industries and other commodities. Royalty rates are different in all states and for all commodities to tailor the tax regime to the specifics of the costs and challenges for different minerals. Other states have phase-ins, price floors, royalty holidays and reduced rates for start-up mines which reduce the effective rate. Victoria has none.

The table does not compare gold to other commodities, because if it did, it would show that most states tax gold lower than other commodities to reflect the fact that gold involves more processing costs and is often characterised by smaller and more marginal mines.

Where royalties do exist, simplistic comparisons by rate do not give an accurate picture of the actual tax burden. The tax base, including relevant deductions, offsets, progressive rate structures, profits tax structures and price floors are critical to judging the effective marginal tax rate an investment faces. The RIS makes no attempt to compare effective rates across jurisdictions and glosses over differences in tax bases.

Royalties are regarded by many tax experts as one of the most inefficient taxes because they apply whether a mine is profitable or not. The tax base of a royalty is critical to overcome some of the inefficient nature of royalties. Victoria's royalty uses a broad tax base leaving all of the inefficiencies of a royalty to bear on smaller and marginal mines.

The RIS and government, have neither made an attempt to explain why a rate of 2.75 per cent is right for Victoria, nor made any sophisticated analysis of the tax base.

### **Myth: Miners are getting 'free' gold**

The gold is not 'free' as claimed by Treasurer Tim Pallas and the lack of a gold royalty is not a 'wealth transfer' to mining companies as claimed by the RIS.

The claim conveniently ignores the costs and risks borne by mining to extract the gold.

The construction and investment costs for mines are very high. Running costs alone are in the tens of millions of dollars at a minimum per annum. Most mines in Victoria have gone through hard times over different periods and ownership has changed regularly with losses to some investors.

Many mines in Victoria have sunk large amounts of capital in developing mines and exploration. Imposing a new tax without warning is not reasonable.

The community benefits greatly from a mine because of the jobs, wages, and the local businesses that are supported by the millions spent each year in local areas and in Victoria to run a mine.

The only wealth transfer that would take place from imposing a large new tax on a regional industry is from regional Victoria to the city.

**Myth: Gold prices are high so the royalty has little impact**

The royalty is based on a high price, but prices are volatile and can fall. Setting a royalty based on a gold price at a one point in time will not be able to stand the test of time as an enduring tax reform.

A gold royalty needs to take into account gold price volatility by setting price floors or tiered rates based on production or price to account for inevitable lean years. Victoria's plan for a flat 2.75 per cent rate takes none of this into account.

**Myth: Small miners are exempt**

The government's proposed threshold of 2,500 ounces is tiny and does not exempt any mines in Victoria despite the RIS claim that it aims to 'reduce impacts on small miners.' A 2,500 ounce exemption only covers small scale fossickers.

This threshold has been plucked from the royalty system of WA, a state with large mines and a lower rate.

**Myth: There will be minimal impacts on mines and jobs**

The royalty means less money left for exploration work – both sustaining exploration and new exploration to find the next ore body.

Less exploration means less jobs and it means Victoria is less likely to find the next big ore body.

Gold mines continuously spend money on exploration to confirm where gold is in the ore body. It is spent to not just find a new mine – ongoing exploration is required to keep an existing mine going.

For smaller mines, less money for exploration drilling makes it harder to survive and marginal mines going through difficult periods could close earlier than they otherwise would.

In years that mines may be marginally profitable, the royalty will result in a very high and unfair tax rate that almost wipes out any profit. For example, a \$4 million profit in a mine of producing around 40,000 ounces of gold (typical Victorian gold mine), would pay around \$2 million in royalties - a tax rate of 50 per cent. On top of that would come company tax providing an uncompetitive tax rate of around 63 per cent almost clearing the entire profit.

Considering it costs tens of millions of dollars a year to run a mine to achieve this slim profit, the impact on business investment is clear from such a drastic reduction in the return on capital. Victoria loses under such a scenario because the incentives to keep mines open is reduced thereby leaving gold in the ground and cutting jobs short.

**Myth: New revenue initiatives that may benefit gold producers**

The RIS claims that the 2019 Victorian Budget will partly offset the impost of the gold royalty. The RIS appears to acknowledge it is at best exaggerating when it says these revenue initiatives that 'may' benefit the gold industry are 'to some extent interdependent' on the gold royalty. This is hardly the case.

Payroll tax reductions are small compared to the huge tax bill mines will face in regional areas. There is no connection between the gold royalty and payroll tax relief for regional business.

The spending that is critical for Victoria to extract maximum benefit from Victoria's gold endowment is the ongoing exploration spending to maintain gold production in Victoria that secures jobs in regional Victoria.

Getting the basic policy settings right would be better to help all regional business grow and employ people from efficient business regulation, and sensible policy.

**Myth: Mining is benefiting from government support**

Appendix 2 'Regulatory Reform Programme' in the RIS sets out a suite of government initiatives that aim to reduce the regulatory burden on mining. These are supported by industry but do not address the serious issues with imposing a new tax on gold mining of large magnitude as the gold royalty will do.

The commentary also refers to the government's *State of Discovery Mineral Resources Strategy 2018-2023*. The Strategy released in August 2018 just prior to the state election made no mention of a gold royalty.

## ATTACHMENT A: DETAILED PROPOSALS TO REFORM THE ROYALTY

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The royalty is flawed and a threat to future industry growth, investment and consequently to regional development in Victoria. The key flaws that the proposed modest MCA reforms seek to address are:

- Victoria would have a higher gold royalty than WA – the biggest gold mining state
- The base is not ‘fit for purpose’ because it does not reflect the varied risk profiles, exploration costs, underground operations of Victoria’s mines, nor does it recognise gold’s characteristics in relation to necessary sustaining exploration costs and processing costs
- The imposition on all mines with no transitional arrangements for existing mines amounts to a retrospective tax damaging Victoria’s reputation as an investment destination
- Revenue raised from the royalty is not devoted to the regions or mining, despite effectively being a tax on the regions.

### **MCA royalty reforms**

The following proposals constitute genuine reform, are tailored to Victoria’s circumstances to reduce distortions against investment and meet the basic royalty policy principles. They would help encourage exploration and development of gold, better increasing the chance of Victoria discovering and developing the ‘next Fosterville’.

#### ***Exploration Offset***

##### *Issue*

The current proposal has no minimal offsets or deductions (apart from some minor marketing costs) that account for the costs associated with mining and processing that create the value.

The rate would leave Victoria with an uncompetitive tax regime for gold compared to that in Western Australia - the biggest Australian gold province producing 68 per cent of the country’s gold (see attachment D). Other Australian jurisdictions have various price ‘floors’, a profits based royalty (NT) or deductions and royalty exemptions that Victoria’s regime would lack.

The royalty impacts ongoing sustaining exploration spending and it ignores the fact that gold involves more processing than other minerals and therefore more capital expenditure. As a result, in some cases the royalty as proposed is not considered an ‘efficient’ tax as it would drive otherwise marginal but still viable projects into the red.

The proposed royalty is not tailored to the specifics of gold mining or of Victoria’s gold industry. This is in stark contrast to all other jurisdictions which have different royalty structures and rates for different commodities tailored to the characteristics of each commodity.

The current proposal is highly distortionary against gold mining which requires sustaining exploration expenditure as a basic ongoing expense at a mine site. Royalty liabilities would come off the top line and reduce the amount of capital available for reinvestment in exploration which is a critical cost of mining. Drilling along the ore body is required to extend the life of the mine and to discover adjacent ore bodies for development.

A high royalty penalises lower grade and deeper mines and newer mines that are under pressure to prove up resources with exploration spending. This will lead to a shorter mine life and reduce the chances of discoveries to meet the Victorian Government’s aim of developing a large new mine in Victoria.

In addition, all gold mining in Victoria operates in underground mines. Underground mines often involve higher costs than open cut mines. Given Victoria’s dense population with mines in less remote areas compared to other states, the royalty regime should reflect these basic facts on mining in Victoria. New South Wales’s royalty regime has lower tax rates for underground coal mines (‘deep underground’, ‘other underground’, and ‘open cut’ tiers).

### *Proposal*

A non-refundable offset equal to the amount of eligible exploration expenditure by a company should be claimed against a royalty liability up to a cap annually.

An exploration offset will account for smaller and more marginal mines consistent with other Australia jurisdictions gold royalty regimes. It would minimise impacts on exploration activities or delays to expansions that could otherwise be unaffordable where there is limited ability to reduce other costs to account for the royalty cost.

This would provide a fairer and more appropriate outcome for Victoria by delivering a royalty rate more tailored to the characteristics of gold given the differing capital investment and financial return characteristics across resources commodities.

Eligible exploration expenditure should include greenfield and brownfield expenditure. Forward development expenditure to progress an indicated or measured resource to a higher standard would not be eligible to be written off against a royalty liability. This includes tunnels and associated infrastructure so that only exploration drilling etc. is eligible to offset royalties. Utilising existing definitions and common understanding of ongoing exploration expenditure will be simple and certain.

Brownfield exploration expenses should cover costs at an existing site to extend and improve the knowledge of the mineral system with a view to refining the mine plan or increasing the mineral resource. Greenfields exploration costs should include reconnaissance exploration that goes into the first identification of a potential orebody and also the work to first deliver a resource statement (likely to be an inferred resource). Exploration on these types of expenditure is sustaining expenditure at gold mines to continue to track ore bodies for mining.

The offset would ensure that exploration spending is not impacted as severely as it otherwise would be by the imposition of the royalty. It also ensures a more appropriate value has been imputed for gold (given its specific characteristics). This policy framework accounts for smaller and more marginal miners reducing the risk and uncertainty the royalty poses to their viability.

Including exploration spending on all greenfield sites will incentivise exploration spending. It would also ensure the offset is simple by avoiding the need to carve up exploration expenditure by site and encourages exploration more broadly.

The offset would also better reflect the costs of gold mining and risks being borne by miners. These are reasonable 'deductions' which effectively reduces the overall impact of the royalty regime on Victoria's competitiveness. It meets the public policy purpose of encouraging the development of the community's resource in line with government objectives.

The offset would apply after the royalty is paid and is limited by a cap to minimise revenue impacts. This mechanism must be ongoing and cannot be watered down with future increases in state royalties. It would be available for all mines regardless of size up to the cap.

### ***Tiered rate structure***

#### *Proposal*

A tiered rate based on a progressive tax system reduces impacts on smaller and marginal mines. It also serves the purpose of phasing in a new royalty regime on gold. It is more responsive to commodity price and economic cycles.

A structure retaining a zero rate between 0-2,500 oz rising to the highest rate of 2.75 per cent for large mines.

A threshold structure would ensure only large and highly profitable gold mines are subjected to the highest rate and medium size mines face a competitive rate that reflects Victoria's underground mining.

Thresholds should ensure the royalty is not distortionary (i.e. by not leaving resource in the ground that might otherwise be developed). Gold mining below 50,000 ounces is very marginal and usually

represents a start-up or expansion phase of a mine. Fifty to one hundred thousand ounce mines begins to pay back capital (depending on grade and depth). Mines under 100,000 ounces are not considered large (most gold mines in WA over 80,000 ounces).

A floor price should be set to reduce the punitive impact at times of lower prices. The floor price should be the annual average price and no royalty is paid if the price falls below the floor.

This is consistent with other jurisdictions for gold royalties such as Queensland which has a floor price below which a lower royalty rate is paid.

### ***Equitable transition rules for existing mines***

#### *Issue*

The royalty is to apply to all existing resource projects and to those in the start-up phase producing more than 2,500 ounces in a given year. The royalty applies immediately from 1 January 2020.

This approach effectively imposes a retrospective tax and takes no account of start-up mines in the initial phases paying back capital with minimal cash flow. Investors in gold in Victoria have based their risk-assessed investment on the current royalty regime.

The proposed arrangements are strongly biased and distort against resource companies in the start-up phase and to more marginal mines.

#### *Proposal*

A phased implementation would avoid a sudden tax hit with the very short 6 month timeframe (1 January 2020). When WA introduced a gold royalty in 1998, it was phased in over two years with a rate of 1.25 per cent applying from 1 July 1998 increasing to 2.5 per cent from July 2000.

The Victorian gold royalty should be staged over 3 years:

- 50 per cent applying in year 1
- 75 per cent in year 2
- Full rate in year 3.

This is a reasonable approach to transition to allow existing mines and investors to factor in the tax over time.

A 'new project incentive' should be built into the royalty structure to remove a royalty liability for 2-5 years from the date of commencing mining to allow capital investment to be paid back and for the substantial cash flow and operating risks that are common in the opening months of a mine. This would operate in a similar fashion to the royalty regime in South Australia where new mines qualify for a concessional rate for the first five years and royalty arrangements are provided for new mines in other states based on agreements negotiated.

### ***Administrative arrangements***

#### *Proposal*

Amendments should be made to the royalty administration arrangements to introduce flexibility with the option for a royalty liability (on any commodity) to be paid in monthly, quarterly or annual instalments. Royalty liabilities should also be able to be paid on a deferred payment plan to cater for mines in poor cash flow positions due to hardship commonly from low commodity prices or higher capital costs in a given year.

This is a fairer and more efficient outcome to take pressure off cash flows and ensure smaller or more marginal mines can cover royalty costs. It would avoid pressure to introduce special treatment for individual mines in the form of 'royalty holidays' or other mechanisms.

**ATTACHMENT  
SUPPLEMENTARY  
INFORMATION**



# **Analysis of Regulatory Impact Statement: Proposed Amendment to Mineral Resources (Sustainable Development) (Mineral Resources) Regulations 2019**

**Report to Minerals Council of Victoria**

**October  
2019**

Castalia is a global economics and finance consultancy specializing in the energy, resources and infrastructure sectors. In Australia, our team has advised on topics ranging from competition in telecommunications, to electricity transmission pricing, to retail electricity regulation in Victoria to vehicle parallel imports. The lead author of this report is Alex Sundakov.

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# 1 Introduction

On 27 May 2019, the Government of Victoria announced the removal of the exemption for gold from royalties, effective 1 January 2020. The new royalty regime would affect 18 mining license holders. A 2.75 percent *ad valorem* royalty will apply to gold production of above 2,500 ounces per annum.

We have been asked by the Minerals Council of Australia (Victoria) to review and assess the Regulatory Impact Statement (RIS) prepared by the Victoria State Department of Jobs, Precincts and Regions. The RIS relies on quantitative assessment prepared by ACIL Allen to compare the proposal to the base case of retaining the exemption from royalties.

The quantitative assessment concluded that the gold royalty as proposed is unlikely to impact the viability of gold production in Victoria because all the assessed tenements are expected to continue operating. The assessment essentially relied on four logical steps:

- First, ACIL Allen assumed that gold mines will continue operating as long as their All-in Sustaining Costs (AISC) per ounce of gold were less or equal to the price of gold minus the royalty
- Second, they compared the most recently reported AISC numbers at the time from the three main gold producers in the State to gold price forecasts and concluded that indeed AISC would be expected to be below prices after royalty
- Third, ACIL Allen suggested that since the expected variability of gold prices around the forecasts was greater than the size of the royalty, the relative effect of the royalty on whether the mines remain in business would be negligible. In other words, if the price is high enough to be above AISC, mines will continue operating with or without the royalty, if the price is too low, mines will close again with or without the royalty
- Finally, having concluded that the total level of economic activity in the gold mining sector in Victoria will not change as a result of the royalty, ACIL Allen saw no economic cost. On the other hand, according to them, spending of the royalty by the Victoria State Government, would generate a further multiplier effect in the local economy. Having recorded no economic cost and a small multiplier benefit, the RIS concluded that the proposal was in the public interest.

In our view, all four components of the ACIL Allen quantitative assessment contain errors of both logic and fact. It is indeed possible to find some assumptions about the future under which the level of economic activity in the sector would not be affected and the benefits of the proposal would exceed the costs. However, there is significant risk that such assumptions will not hold. The conclusion that the gold royalty in its proposed form will create a net public benefit derived from the quantitative assessment is not reliable.

The rest of the report is structured as follows:

- Section 2 evaluates the approach to estimating mining costs which underpins the RIS
- Section 3 addresses the modelling of revenues in the RIS
- Section 4 discusses how the RIS modelled the firms' shutdown decision
- Section 5 reviews the economic cost-benefit analysis in the RIS
- Section 6 presents our conclusions and recommendations.

## **2 Approach to Estimating Mining Costs in the RIS**

The ACIL Allen quantitative assessment is based on the idea that All-in Sustaining Costs (AISC)—a non-IFRIS measure of unit costs prepared under the World Gold Council guidelines—is the appropriate cost measure to model future shut down/operate decisions. As the RIS correctly points out, AISC is an increasingly standard indicator of the cost of production in the gold mining industry and provides a more comprehensive look at costs than the traditional cash cost approach. AISC refers to the costs of ongoing production at operating mines, and includes cost items meant to sustain current operations, such as ongoing mine development activities and capital explorations (sustaining) (see Appendix A for a full cost item list).

However, while AISC measures are routinely used to provide additional insights into mining operations, AISC by itself is not useful or reliable as a single indicator of future costs. ACIL Allen compound AISC's shortcomings by using a single snapshot calculation of AISC from a recent historical period. As a result, the forward-looking quantitative assessment is based on cost numbers that are neither informative nor reliable.

### **2.1 AISC does not comprehensively account for all the costs incurred in continued gold production**

The concept of activities and costs to “sustain” current operations should not be confused with the costs that have to be incurred for a gold mining company to remain in business. To remain in business on their existing tenement, gold mining companies continuously combine operation at the current production site with exploration of further production locations. AISC as a concept focuses on costs incurred in sustaining operation at the current production site. However, since production sites become worked out and the equipment has to be moved on, on-going exploration and capital development outside of the immediate operations is a core business activity. If gold mining companies are unable to secure capital for such activities, they will not be able to remain in business.

We understand that forward-looking costs are particularly important to Victorian producers due the unique geology requiring Victorian producers to engage in a relatively greater ongoing underground exploration to replace the depleting resources. For a business to remain as a going concern, the need to “sustain” existing production is only one element of the broader need to sustain the overall activity.

The World Gold Council suggests the concept of All-in Costs (AIC) as a more comprehensive measure of the costs that need to be incurred to remain in business.

Figure 2.1 shows additional cost items that are included in AIC.

**Figure 2.1: World Gold Council’s Methodology for Calculation of AIC**

- Everything else not related to a company’s current operations

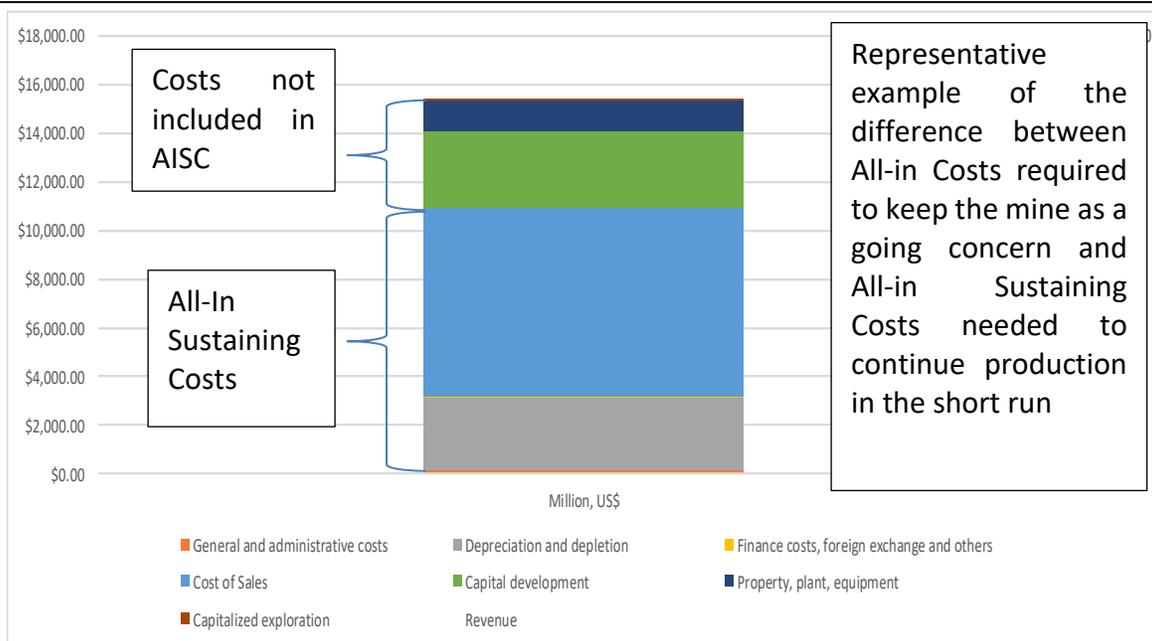
**All-In Sustaining Costs; plus**

- Permitting & Social Responsibility costs
  - Exploration and study costs
  - Capital Exploration
  - Capitalized OP stripping and UG development
  - Capital Expenditures
- = All-in Costs**

Source: World Gold Council. Guidance Note. <https://www.gold.org/about-gold/gold-supply/responsible-gold/all-in-costs>

Figure 2.2 illustrates the difference between the two concepts using the Mandalay Resources reporting for the Costerfield mine—the same period from which the RIS derived its AISC data.

**Figure 2.2: Costerfield Mine All-in Sustaining Costs and All-in Costs in Q1 2019 (USD)**



Source: Mandalay Resources Management’s Discussion and Analysis for the Three Months Ended March 2019

This example shows that the AISC measure—while useful for other purposes—underestimates the total costs of remaining in business by around 30 percent.

In effect, AISC as a measure obscures the cashflow situation of a gold mining company and its ability to remain in business. Further, AISC excludes financing costs of the capital expenditure associated with initial development of the mine.<sup>1</sup> While in economic analysis it is appropriate to disregard sunk costs (that is, the general proposition is that once the capital is spent, the decision to remain in business will depend on whether current revenues cover current costs), financing costs associated with initial capital represent an on-going financial commitment that must be covered. Two of the five tenements evaluated in the RIS went into administration because they were unable to refinance debt. This illustrates the role of financing costs.

## 2.2 Single Period Measure of AISC is a Poor Proxy for Forward Quantitative Modelling

The RIS uses a single period report of AISC for estimating average production costs. That is, apart from any conceptual difficulties with AISC, the RIS relies on a single measure from the previous quarter financial reporting results. In reality, AISCs tend to vary considerably from period to period. Any modelling based on single period estimates is likely to be highly unreliable.

In general, gold mines’ annual costs tend to be relatively fixed. Mines are set up to process a fairly constant amount of ore. However, the amount of gold per ton of ore processed can vary substantially. As gold (or gold equivalent output) fluctuates, so too will AISC.

The table below illustrates this point using reported total costs and output from the Ballarat Gold Mine in in the last three years. This shows that production has varied by around 20 percent from year to year, while cost changes have been small, driven mainly by input costs variability rather than the volume of gold output.

**Table 2.1: Fluctuations in output with relatively stable expenditure costs**

	2016/2017	2017/2018	2018/2019
Output (Au eq. ounces)	41,710	33,948	41,103
Total Expenditure (A\$000)	63,441	62,610	66,541

Source: Castlemaine Goldfields

Data for Mandalay Resources Costerfield mine paints a similar picture. In the period from 2011 to 2019, the average year-to-year change in total operating costs at Costerfield was 10.9 percent, while output fluctuated on average at 22.1 percent year to year. During some years, the difference between cost and output variability was quite extreme. For

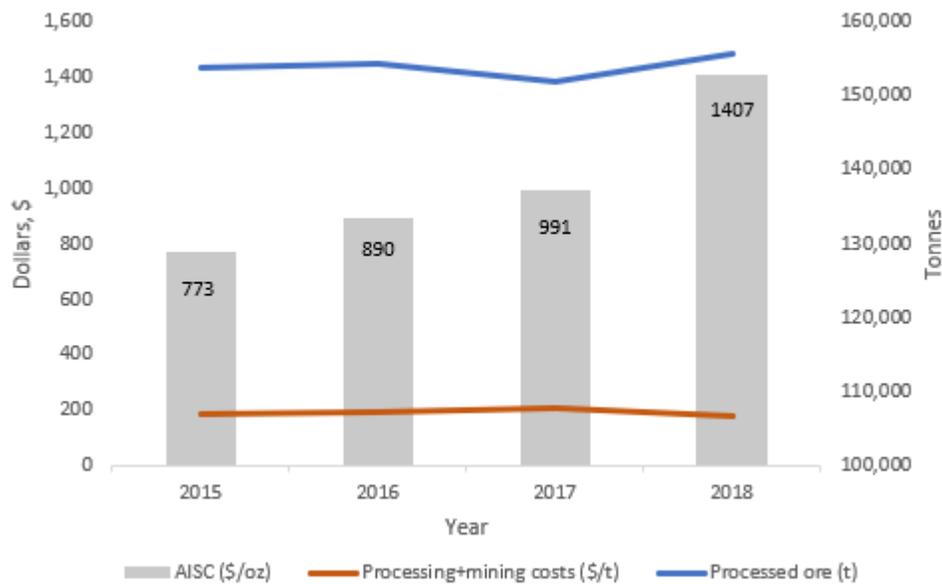
<sup>1</sup> Guidance Note. World Gold Council.

example, between 2012 and 2013, operating expenses increased by 16.1 percent, while output changed by 42.7 percent.

It is particularly striking that the cost of processing a ton of ore at Costerfield remained in the narrow range of USD36.7 to USD37.6 per ton between 2015-2018. The volume of processed ore similarly did not vary significantly during the same period.

These relatively marginal fluctuations, however, were associated with significant movements in annual averages of AISCs (almost doubling from \$773/oz in 2015 to \$1,407/oz in 2018) (Figure 2.3).

**Figure 2.3: AISCs vary significantly amid relatively stable operating costs**



Source: Mandalay Resources Corporation. Costerfield Operating Statistics, 2015, 2016, 2017, 2018.

Due to the variable quality of the gold resource, large fluctuations in AISC are possible even over a very short term. The RIS used AISC of \$1,493/oz for Costerfield, which was derived from the report for the March 2019 Quarter. The report for the June 2019 Quarter (which may not have been available at the time the RIS was prepared) shows AISC of \$2,020/oz, representing a 35 percent increase.

### 2.3 The model compares inconsistently calculated AISCs

AISCs reporting is not required by IFRS and is thus both voluntary and subject to wide interpretation. While the World Gold Council provides guidelines for calculating AISCs (see Appendix A), there is a wide range of interpretations of which costs are “sustaining” and which are “non-sustaining”:

*“The determination of classification as sustaining or non-sustaining requires judgment by a company’s management. The facts and circumstances that lead to a decision may change over time and this may lead to a change in classification between the time the project is originally contemplated and when it is completed” (Guidance Note, World Gold Council)*

Discretion in calculating AISCs allows for potential inconsistency in reporting of AISC across firms. Given the degree of judgement about what is in and what is out of the AISC, AIC measure would be more consistent and reliable.

## **2.4 Conclusion**

Overall, we conclude that the data used for the quantitative modelling in the RIS is inappropriate and does not produce reliable results. At the very least, modelling need to include all the costs of remaining in business (AIC) and estimate such costs from long-term averages rather than from a single period observation.

## **3 Approach to Estimating Revenue of Firms in the RIS**

The RIS argues the proposed gold royalty is unlikely to affect the viability of production in Victoria: *“Under expected gold price scenarios, no current producers would choose to exit the market as a result of the gold royalty”*.

In our view, the analysis in the RIS understates the likely degree of volatility in the AUD price of gold. Gold prices are undoubtedly hard to predict. However, where forecasts are necessary, it is important to ensure that the forecasting methodology is at least internally consistent.

The RIS uses scenarios derived from the historical USD price of gold. Figure 5 in the RIS shows that the USD price of gold has been fluctuating around a stable mean for a number of years. The reference price is derived from this mean, which is below the historical highs briefly achieved around 2012, and above the long-term trend prevailing before the run up in prices which occurred around the time of the Global Financial Crisis.

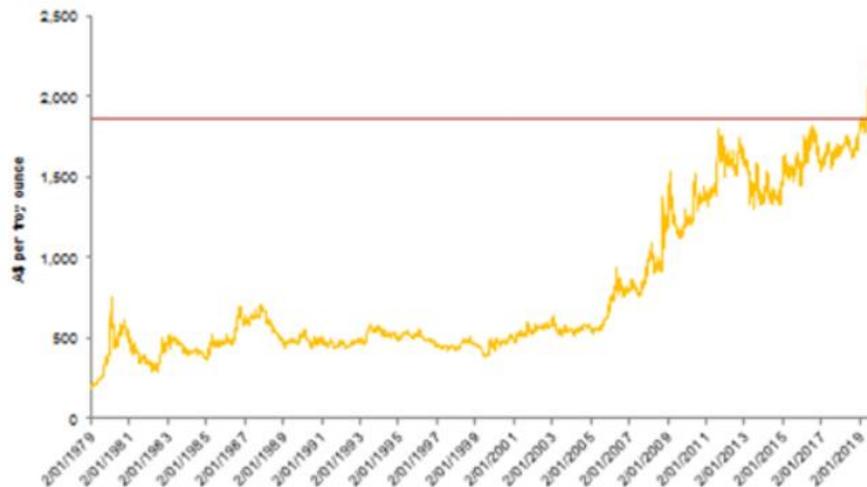
According to the RIS, the reference USD price is determined on the basis of long-term analysis of historical trends. Put more simply, it is selected essentially because it has been the trend price since 2012. One can argue whether such historically based forecasting is reliable or whether better forecasts can be obtained using factors that will drive future supply and demand.

However, having selected the reference USD price on the basis of long-term averages, internal consistency at the very least would have required that the AUD-USD exchange rate similarly should have been calculated using long-term averages. Instead, the model takes the current exchange rate of US\$0.67=AUD\$1 and assumes that it will remain at that level.

The logical problem is that the current exchange rate is, by historical averages, unusually low and hence—if the backward-looking methodology is to be used consistently—is likely to revert to the long-term trend.

The problem with using an inconsistent approach to forecasting USD price and the USD/AUD exchange rate is that it produces an extreme result. The reference gold price of A\$1,866 used in the RIS reflects a historically unique high level which has only recently been reached (Figure 3.1).

**Figure 3.1: Gold price (in AUD) reached the reference price used in the RIS only in early 2019**



Source: World Gold Council

In other words, if ACIL Allen applied consistent historical trend analyses to the USD prices and the exchange rate—or if they had simply directly analyzed trends in the AUD gold price—they would have likely produced a substantially lower forecast reference price.

It is also important to note that in addition to forecasting future levels of the gold price, any analysis of gold companies' financial viability in Victoria needs to take into account the likely volatility of prices. The more volatile the prices, the greater the need for working capital and the higher the cost of capital for such businesses.

## 4 Use of AISC to Model Firm Shutdown Decision

The model employed in the RIS assumes that gold mining companies will continue operating until the point where their operating margin (revenue less AISC) turns negative (p. 32). The RIS predicts that even smaller, relatively high cost gold producers (Costerfield and Ballarat) will have double-digit operating margins (Table 1) under the reference gold price.

The RIS sets the decision framework as companies would continue operating when:

$$P_{\text{gold}} - \text{royalty} \geq \text{AISC}$$

Hence, the RIS concludes that under reasonable gold price scenarios, all existing producers will continue operating and hence the royalty as proposed will have no effect on the number of market participants.

#### 4.1 Improved Quantitative Framework

As our analysis in the previous section shows, this conclusion is highly unreliable:

- The AISC measure used in the RIS both understates all the costs of remaining in business and does account for the variability of those costs
- The gold price forecast used in the RIS both likely overstates the reference AUD price of gold and does not account for the variability of gold prices.

We suggest that more reliable quantitative analysis could be derived on the basis of the following decision criteria:

$$\text{Long-term average } (P_{\text{gold}} - \text{royalty}) \geq \text{Long-term average AIC}$$

Such analysis could have been carried out on the basis of the available data. Such analysis is particularly important given the unusual structure of the Victorian gold industry: it has one market participant accounting for about 77 percent of output which has costs that are materially lower than for other producers. Two other producers, accounting for a further 18 percent, face high costs and have had mixed financial performance despite record gold prices.

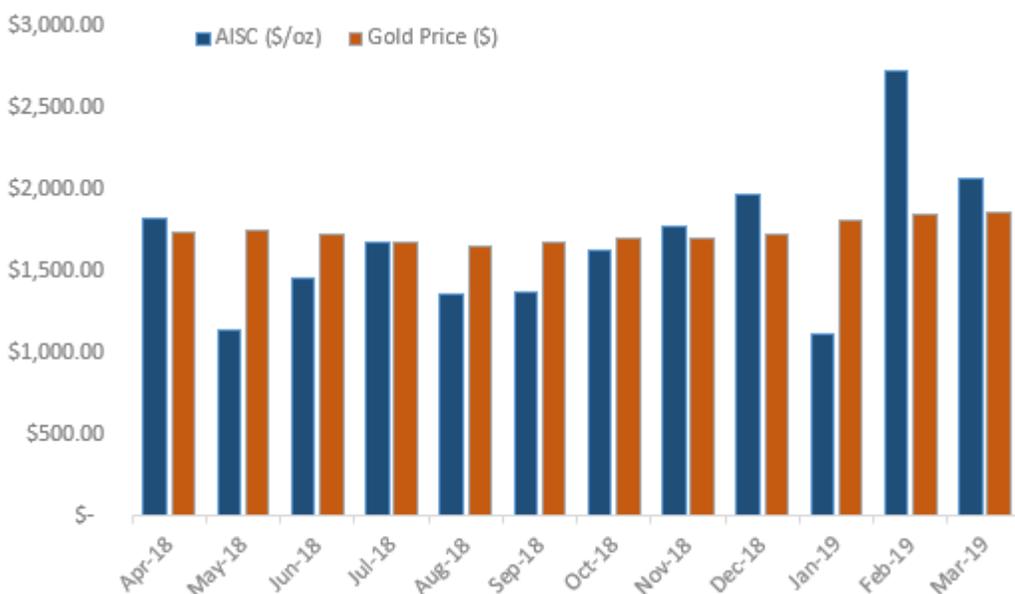
The RIS itself in Table 6 notes the fact that on 21 March 2019, gold producer Centennial Mining went into voluntary administration while continuing limited operations. At the time, the company was unable to secure cash for the necessary capital development that falls outside the scope of sustaining activities.

Given the vulnerability of smaller producers in Victoria, it is particularly important to understand the effect of the royalty on their finances. Our above proposed decision framework would produce a more reliable quantitative estimate of the likely future shape of the Victorian gold industry than the modelling undertaken in the RIS.

In the time available to prepare this commentary, we have not been able to develop a comprehensive quantitative model. However, the sample data for the Costerfield mine used in Figure 3 shows that on average, AIC can be expected to be around 30 percent higher than AISC.

Sample data from the Ballarat mine below suggests that AISC, in addition to being volatile, is likely to increase over time as the quality of the resource declines.

**Figure 4.1: Ballarat Gold Mine historical production costs compared to gold price**



Source: Ballarat Gold Mines reports

Hence, on the forward-looking basis, it would be prudent to model AIC as being approximately 20 to 30 percent higher than the reference AISC used in the RIS, while also rising at a slow rate.

Similar high-level historical trend analysis suggests that the reference AUD gold price may likely be about 10 percent lower than suggested in the RIS to account for long-term AUD trends.

Applying these adjustments to the calculations in the RIS suggests that both Costerfield and Ballarat may be at the margin of viability in securing capital for on-going development, with the royalty likely to tip the scales. We note that in relation to Centennial Mining’s voluntary administration, in the Explanatory Statement<sup>2</sup> published on 17 September 2019, the Administrators highlighted the proposed gold royalty as one of the factors hampering their ability to secure funds for the recapitalization of the company.

## 4.2 Effect of the Royalty

While the RIS uses an unreliable quantitative framework, it further implies that the quantitative analysis is in any case probably unnecessary. Since both gold prices and costs are volatile, the RIS claims that the degree of volatility is greater than the 2.75 percent effect of the royalty. Hence, depending on future scenarios, mines will either go out of business or remain in business, but that will not be affected by the royalty.

<sup>2</sup> [https://docs.wixstatic.com/ugd/4014e9\\_b221ff1ce52949ea96eab8f830b709e6.pdf](https://docs.wixstatic.com/ugd/4014e9_b221ff1ce52949ea96eab8f830b709e6.pdf)

This analysis misinterprets the forward-looking decision process. In essence, at any time, gold mines have to ensure that they meet their cash flow requirements and secure sufficient capital for continued exploration and development. Due to the nature of corporate financial distress—such as voluntary or involuntary administration—inability to secure capital for future production is likely to have an effect on current production even if in the short term, prices exceed AISC.

ACIL Allen modelling suggests that both Costerfield and Ballarat mines will pay around \$1 million in royalty. Historical data indicates that both mines also undertake around \$10 million in forward-looking capital expenditure that is necessary to remain in business but goes beyond sustaining current production in the short term. In this context, the royalty can be conceptualized as a further increase in investment required to achieve the same commercial outcome: that is, the royalty may increase investment cash flows by around 10 percent, and correspondingly reduce anticipated returns compared to the *status quo* by the same amount.

In the same vein, using recent financial reports as a guide, the proposed royalty will represent a significant share of EBIT for the Costerfield and Ballarat mines. This is not surprising, since a common feature of *ad valorem* taxes and royalties is that for firms operating on thin margins, a small percentage of the top line can represent a big percentage of the bottom line.

To put it differently, the proposed royalty, while appearing to have a small effect on the operating margin, will have a considerably higher effect on the forward-looking investment decision and the ability of the mines to access sufficient new capital to maintain the required cash flows.

## 5 Cost-Benefit Analysis

The RIS claims that the proposal has positive benefit-cost ratio because:

- Industry activity will remain the same with and without the royalty and hence no costs
- The State Government spending the royalty on its programs will have positive multiplier effect of 1.3, thus producing economic benefits.

It is clear that this analysis relies on the conclusion that no mines would close as a result of the proposed royalty. As we have explained, such conclusion cannot be reliably drawn from the quantitative analysis presented in the RIS. In fact, indicative analysis suggests that the royalty is more likely to have a negative effect on industry activity than not.

However, even if the royalty does not result in mine closures, the claimed economic benefit derived from the multiplier effect of government spending is not valid.

All spending has some multiplier effect. Hence, for the RIS to be able to claim the economic benefit it is claiming it must assume that:

- The amount paid as the royalty (and subsequently spent by the State Government) would have been spent outside of the state if it had remained in private hands
- Any private spending that would have occurred from the amounts that were otherwise paid in royalty would have had lower multiplier than the one obtained from government spending.

It is unlikely that either assumption holds. Even if the total amount of mining activity does not change, the money that is spent on the royalty would have been available to remunerate both workers and shareholders. Since workers are concerned about preserving their jobs, particularly in regional towns, it is likely that wages would be higher without the royalty than with the royalty. Money paid out as wages would be spent in regional Victoria and would have a multiplier effect at least as high as the government spending (we note that—as outlined in the RIS—smaller mines, while accounting for only 23 percent of overall state production employ about 50 percent of all gold mine workers in the State).

Assuming that mining activity stays the same, the money “saved” from the royalty that is not paid out to workers would be available to the shareholders. While many shareholders are overseas, some shareholders are likely to reside in Victoria. Hence, their spending within the state would be reduced by the effect of the royalty. In practice, however, it is unlikely that the level of activity at the mines would be exactly the same with and without the royalty. Even if the mining companies remain in business, the imposition of the royalty will likely lead to some cut back in spending.

Overall, the RIS conclusion on the net economic benefits would only hold if the money not collected in the proposed royalty would have been entirely paid out to foreign and inter-state shareholders and spent outside the state. In practice, the royalty will crowd out some private spending in the state. Hence, the multiplier produced by government spending would be partially or even fully offset by the loss of multiplier from the private spending.

Since the royalty is more likely than not to have an effect on the level of activity in the sector, the total economic costs are likely to exceed benefits.

Expenditure on exploration, development or operating activities create jobs and has a benefit for the local and state economy, both directly and through a multiplier effect. In Victoria, the employees often live in the nearby community and spend their money there. Gold producers also support local industry through supplier contracts, and local community development through sponsorships, professional training programs, and creating follow-on jobs.

Imposition of royalty in the proposed form poses a significant risk of forcing gold producers with higher production costs out of business. Exit of these companies would create adverse effects for the local economy, likely offsetting the net benefit of transfer of profits to government revenues.

## 6 Conclusion

A well-designed royalty regime can help the government achieve its stated objectives. The analysis in the RIS does not provide any confidence that the royalty in the proposed form would do that. The key issue is that the Victorian gold industry has two distinct components—a single large company with relatively low costs, and a “tail” of smaller mining companies with relatively higher costs. Both types of gold mining companies contribute to Victoria’s economy, but the policies designed for one group do not necessarily work for the other.

The RIS states that one of the objectives of the proposed regulation amendment is to “maintain the economic activity and job creation resulting from gold resource development in Victoria”. To do so, the amendment must ensure new and ongoing investment in the gold industry post royalty imposition.

As we noted in the introduction, the quantitative analysis in the RIS relied on four logical steps. Our analysis shows that none of these steps can be supported:

- First, ACIL Allen assumed that gold mines will continue operating as long as their All-in Sustaining Costs (AISC) per ounce of gold were less or equal to the price of gold minus the royalty. *This assumption is incorrect. Gold mines would likely continue operating if All-in Costs (AIC) are less or equal the price of gold minus the royalty.*
- Secondly, ACIL Allen compared the most recently reported AISC numbers at the time from the three main gold producers in the State to gold price forecasts and concluded that indeed AISC would be expected to be below prices after royalty. *Such comparison is misleading. Single period estimates of cost are unreliable, while the methodology used to produce AUD gold price forecasts is internally inconsistent.*
- Thirdly, ACIL Allen suggested that since the expected variability of gold prices around the forecasts was greater than the size of the royalty, the relative effect of the royalty on whether the mines remain in business would be negligible. In other words, if the price is high enough to be above AISC, mines will continue operating with or without the royalty, if the price is too low, mines will close again with or without the royalty. *This sets up a wrong decision framework for shut down. Mines will shut down if they are unable to raise cash for on-going development. Hence, the effect of the royalty needs to be analyzed through its impacts on investment cash flows.*
- Finally, having concluded that the total level of economic activity in the gold mining sector in Victoria will not change as a result of the royalty, ACIL Allen saw no economic cost. On the other hand, according to them, spending of the royalty by the Victoria State Government, would generate a further multiplier effect in the local economy. Having recorded no economic cost and a small multiplier benefit, the RIS concluded that the proposal was in the public

interest. *This conclusion is based on an unrealistic assumption that the money that would not be collected in royalty would otherwise entirely have been spent outside the state.*

Overall, the analysis in the RIS cannot be relied upon to conclude that the proposed royalty regime is in the public interest (that is, that its benefits would exceed its costs).

# Appendix A

**Table A.1: Components of Cash Cost, AISC and AIC**

Cost Category	Source	US \$ / gold ounces sold
On-site mining and processing costs (on a sales basis)	Income Statement	(a)
On-site general and administrative costs	Income Statement	(b)
Royalties and production taxes	Income Statement	(c)
Realised gains and losses on hedges of operating costs	Income Statement	(d)
Community costs related to current operations	Income Statement	(e)
Permitting costs related to current operations	Income Statement	(f)
3 <sup>rd</sup> party smelting, refining and transport costs	Income Statement	(g)
Non-cash remuneration (site-based)	Income Statement	(h)
Stockpile, leach pad and product inventory write-downs	Income Statement	(i)
Operational Stripping Costs	Income Statement	(j)
By-product and co-product credits ( <i>Note: will be a credit</i> )	Income Statement	(k)
<i>Sub-total (Adjusted operating costs)</i>		(l) = (a)+(b)+(c)+(d)+(e)+(f)+(g)+(h)+(i)+(j)+(k)
Corporate or regional general and administrative costs, including share-based remuneration (sustaining)	Income Statement	(m)
Reclamation & remediation – accretion & amortisation (operating sites)	Income Statement	(n)
Exploration and study costs (sustaining)	Income Statement	(o)
Capital exploration (sustaining)	Cash Flow	(p)
Capitalised stripping & underground mine development (sustaining)	Cash Flow	(q)
Sustaining capital expenditure	Cash Flow	(r)
Sustaining leases	Cash Flow	(s)
<b>All-in Sustaining Costs</b>		(t) = (l)+(m)+(n)+(o)+(p)+(q)+(r)+(s)
Growth and development costs <u>not</u> related to current operations	Income Statement	(u)
Community costs <u>not</u> related to current operations	Income Statement	(v)
Permitting costs <u>not</u> related to current operations	Income Statement	(w)
Reclamation and remediation costs <u>not</u> related to current operations	Income Statement	(x)
Exploration and study costs (non-sustaining)	Income Statement	(y)
Capital exploration (non-sustaining)	Cash Flow	(z)
Capitalised stripping & underground mine development (non-sustaining)	Cash Flow	(aa)
Non-sustaining capital expenditure	Cash Flow	(bb)
Non-sustaining leases	Cash Flow	(cc)
<b>All-in Costs</b>		= (t)+(u)+(v)+(w)+(x)+(y)+(z)+(aa)+(bb)+(cc)

Source: World Gold Council. 2018. “Guidance note on non-GAAP metrics: all-in sustaining costs and all-in costs”.



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