

# Earth Resources Regulation

2019-20 Annual Statistical Report



## Acknowledgement of Victoria's Traditional Owners

The Victorian Government proudly acknowledges Victorian Traditional Owners as Victoria's first peoples and pays its respects to their Elders past and present.

We recognise the intrinsic connection of the first peoples to their Country for countless generations and their inherent obligation to maintain and strengthen their distinct cultural rights and responsibilities to care for their Country.

We value Traditional Owners' role in the management of land, water and biodiversity and acknowledge the ongoing contribution this makes to our earth resources.

We have distinct legislative obligations to Traditional Owner groups that are paramount in our responsibilities in managing Victoria's resources.

We support the need for genuine and lasting partnerships with Aboriginal people and communities to understand culture and connections to Country in the way we plan for and regulate our earth resources.

## Disclaimer

The information contained in this report is provided for general guidance and assistance only and is not intended as advice. You should make your own enquiries as to the appropriateness and suitability of the information provided. While every effort has been made to ensure the currency, accuracy or completeness of the content we endeavour to keep the content relevant and up to date and reserve the right to make changes as required. The Victorian Government, authors and presenters do not accept any liability to any person for the information (or the use of the information) which is provided or referred to in the report.

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For more information see the Earth Resources Regulation website [www.earthresources.vic.gov.au/earth-resources-regulation](http://www.earthresources.vic.gov.au/earth-resources-regulation)

This document is also available in PDF and accessible Word format at <http://earthresources.vic.gov.au/earth-resources-regulation/about-us/regulator-and-industry-reporting/earth-resources-regulation-annual-statistical-report/>

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# 1 Introduction

Earth Resources Regulation, within the Department of Jobs, Precincts and Regions (DJPR), is responsible for the regulation of minerals, extractives, petroleum, geothermal and carbon storage activities in Victoria and offshore Victorian waters and offshore pipelines in Victorian waters<sup>1</sup>. Earth Resources Regulation's role includes granting rights to access resources, assessing works and setting controls for the extraction of resources, conducting compliance operations to ensure that authority holders fulfil their regulatory obligations, setting site rehabilitation bonds and ensuring that authority holders rehabilitate their sites, engaging with communities and stakeholders, and collecting regulatory fees and royalties. We are committed to being an effective regulator.

Earth Resources Regulation administers the following Acts:

- *Mineral Resources (Sustainable Development) Act 1990* (MRSDA) (mineral exploration mining and quarrying)
- *Petroleum Act 1998* (petroleum exploration and development onshore)
- *Offshore Petroleum and Greenhouse Gas Storage Act 2010* (OPGGSA) (petroleum exploration and development, greenhouse gas storage and pipelines in the Victorian offshore waters)
- *Geothermal Energy Resources Act 2005* (geothermal energy exploration and development)
- *Greenhouse Gas Geological Sequestration Act 2008* (greenhouse gas storage onshore)
- *Extractive Industries (Lysterfield) Act 1986*
- *Nuclear Activities (Prohibitions) Act 1983*
- *Underseas Mineral Resources Act 1963*
- *Mines (Aluminium Agreement) Act 1961*

**Key observations and statistics from the 2019-20 returns include:**

## **Extractive operations**

- Rock production increased 0.4% from 62.9 to 63.1 million tonnes (*Table 2.1*)
- Value of sales increased 3.7% from \$1,023.3 million to \$1061.3 million (*Table 2.1*)
- Work Plan Approvals increased by 5 from 15 to 20 (*Table 2.2.1*)
- Administrative updates by notification acknowledgements increased by 3 from 14 to 17 (*Table 2.2.3*)

## **Minerals Exploration and Mining operations**

- Exploration expenditure increased 22.7% from \$101.1.0 to \$124.0 million (*Table 3.1.1*)
- Mining expenditure increased 13.8% from \$734.9 to \$836.3 million (*Table 3.1.1*)
- Gold exploration expenditure increased 42.3% from \$57.2 to \$81.4 million (*Table 3.1.2*)
- Gold mining expenditure increased 33.3% from \$316.9 to \$422.5 million (*Table 3.1.4*)
- Gold production increased 39.6% from 567,501 to 792,267 ounces (*Table 3.2.1*)
- Licence applications increased by 75.0% from 88 to 154 (*Table 3.2.1*)

## **Petroleum**

- Gas production decreased 37.6% from 14,523 (~15.40 petajoules of energy) to 9,069 million standard cubic feet (~9.83 petajoules of energy) (*Table 4.1.1*)

## **Royalties and Regulatory Fees**

- Royalties payable increased 19.9% from \$96.4 to \$115.6 million (*Table 5.1.1*)
- Gold royalties accounted for 22.0% of total royalties payable (\$25.4 out of \$115.6 million) (*Table 5.1.1*)
- Revenue from regulatory fees was \$6.2 million (*Table 5.2.1*)

## **Rehabilitation bonds**

- Total value of rehabilitation bonds held under the MRSDA was approximately \$814.1 million. (*Table 6.1.1*)

The Earth Resources Regulation 2019-20 Statistical Report presents a compilation of data as reported by authority holders to Earth Resources Regulation. All production and expenditure figures are certified by authority holders. As at 07 December 2020, 88 per cent of MRSDA licence holders have submitted an annual Production & Royalty / Expenditure & Activity report.

The annual statistical report may be updated in the future as more Production & Royalty / Expenditure & Activity reports are received from the industry.

<sup>1</sup> Victorian waters are within three nautical miles of the coastline.

## 2 Extractives

Quarries predominantly produce hard rock, clay, sand and gravel, which are mostly used for constructing houses, public infrastructure and private sector developments.

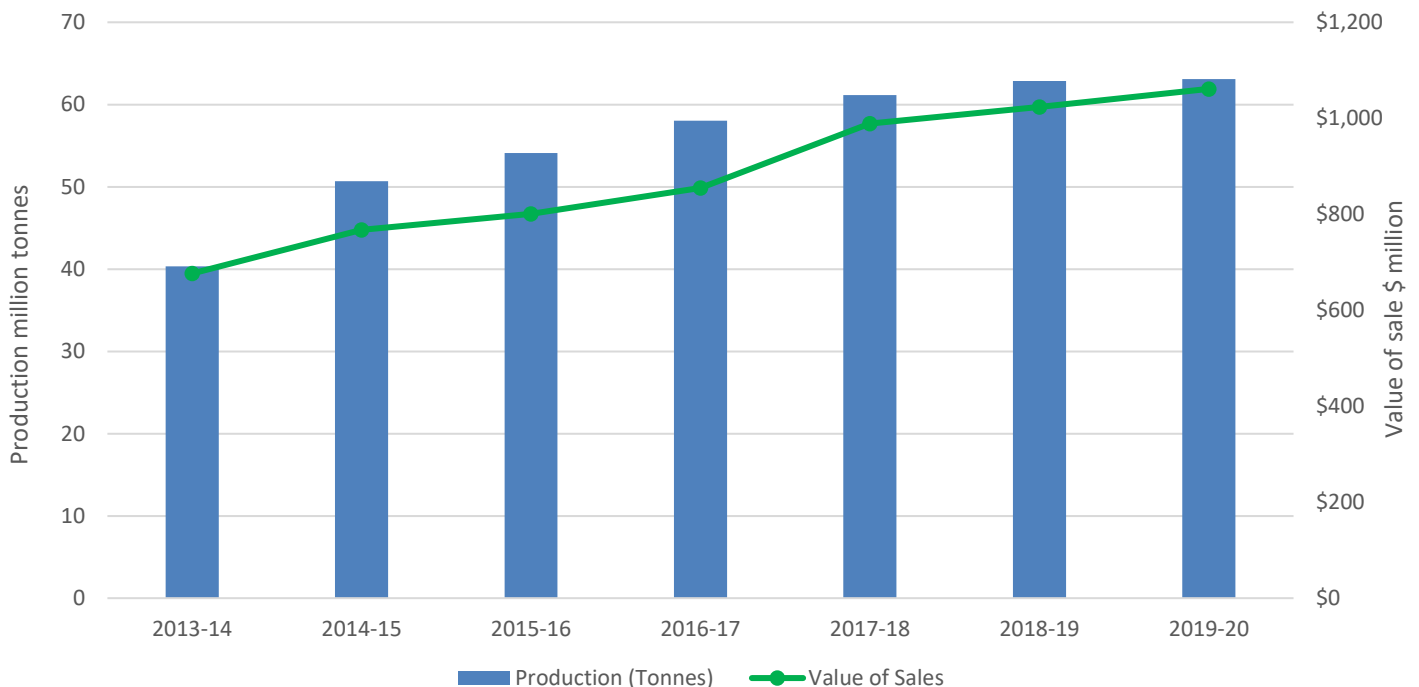
### 2.1 Production

As at 30 June 2020, there were 860 quarries with a current work authority under the MRSDA. The number has remained relatively stable over the last seven years. As at 07 December 2020, a total of 506 quarries reported production in 2019-20. The production volume increased from 62.86 to 63.11 million tonnes and the value of sale increased from \$1,023.31 million to \$1,061.29 million. Sales of quarry products fluctuate based on the demand from the domestic building and construction sector.

**Table 2.1 Production and value of sales by financial year**

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<b>Current quarries at EOFY</b>	884	884	888	888	881	873	860
<b>Quarries with production</b>	485	554	542	544	552	539	506
<b>Production (million tonnes)</b>	40.33	50.69	54.09	58.05	61.16	62.86	63.11
<b>Value of sale (\$million)</b>	\$676.55	\$767.3	\$801.01	\$854.67	\$989.17	\$1,023.31	\$1,061.29

**Figure 2.1 Production and value of sales by financial year**



**Table 2.2 Extractive industry production and value of sales by product type last five financial years**

Product Group	Product Type Groups	FY2015-16		FY 2016-17		FY 2017-18		FY 2018-19		FY 2019-20	
		Production Volume (million tonnes)	Value of Sales (\$ million)	Production Volume (million tonnes)	Value of Sales (\$ million)	Production Volume (million tonnes)	Value of Sales (\$ million)	Production Volume (million tonnes)	Value of Sales (\$ million)	Production Volume (million tonnes)	Value of Sales (\$ million)
Clay products	Brick	1.53	\$2.97	1.07	\$3.09	0.99	\$3.02	0.94	\$2.71	0.76	\$2.08
	Stoneware Pottery	0.0004	\$0.01	0.001	\$0.03	0.001	\$0.04	0.004	\$0.05	0.001	\$0.02
	Tile/Pipe	0.03	\$0.07	0.03	\$0.08	0.02	\$0.08	-	-	-	-
<b>Clay products Total</b>		<b>1.56</b>	<b>\$3.04</b>	<b>1.10</b>	<b>\$3.20</b>	<b>1.01</b>	<b>\$3.14</b>	<b>0.94</b>	<b>\$2.75</b>	<b>0.77</b>	<b>\$2.10</b>
Limestone products	Agriculture	0.59	\$17.40	0.52	\$14.14	0.65	\$17.46	0.62	\$16.25	0.61	\$17.43
	Cement	0.04	\$0.84	0.03	\$0.57	0.08	\$1.70	0.03	\$0.72	0.03	\$0.61
	Lime	0.11	\$1.87	0.15	\$2.43	0.08	\$1.57	0.07	\$1.28	0.09	\$1.63
<b>Limestone products Total</b>		<b>0.74</b>	<b>\$20.11</b>	<b>0.69</b>	<b>\$17.15</b>	<b>0.80</b>	<b>\$20.73</b>	<b>0.71</b>	<b>\$18.26</b>	<b>0.73</b>	<b>\$19.67</b>
Miscellaneous	Dimension Stone	0.01	\$0.83	0.07	\$1.00	0.01	\$0.25	0.00	\$0.12	0.01	\$0.29
	Soil	0.03	\$0.39	0.03	\$0.42	0.05	\$0.60	0.05	\$0.59	0.02	\$0.10
	Unspecified	5.49	\$62.03	3.57	\$44.25	5.28	\$61.44	2.86	\$31.47	4.60	\$70.69
<b>Miscellaneous Total</b>		<b>5.53</b>	<b>\$63.25</b>	<b>3.67</b>	<b>\$45.66</b>	<b>5.33</b>	<b>\$62.29</b>	<b>2.91</b>	<b>\$32.18</b>	<b>4.63</b>	<b>\$71.08</b>
Multi size products	Fill	2.70	\$27.37	3.33	\$29.96	3.92	\$38.97	3.79	\$38.38	4.84	\$46.41
	Road Base	7.06	\$98.15	6.48	\$86.44	6.09	\$104.25	7.62	\$122.33	5.46	\$90.89
	Road Sub-Base	8.84	\$109.03	10.56	\$126.65	11.95	\$144.31	12.88	\$160.52	12.89	\$175.22
<b>Multi size products Total</b>		<b>18.60</b>	<b>\$234.54</b>	<b>20.37</b>	<b>\$243.05</b>	<b>21.96</b>	<b>\$287.53</b>	<b>24.28</b>	<b>\$321.22</b>	<b>23.18</b>	<b>\$312.53</b>
Sand products	Concrete Sand	9.82	\$130.21	8.94	\$124.40	7.20	\$132.49	9.25	\$151.73	8.00	\$144.58
	Fine Sand	1.95	\$30.67	1.70	\$16.95	2.50	\$39.67	1.61	\$19.33	3.01	\$43.48
	Foundry Sand	0.01	\$0.06	0.74	\$17.22	0.003	\$0.04	0.86	\$19.11	0.002	\$0.10
	Industrial Filters	0.05	\$0.42	0.03	\$0.31	0.02	\$0.12	0.02	\$0.20	-	-
<b>Sand products Total</b>		<b>11.82</b>	<b>\$161.37</b>	<b>11.41</b>	<b>\$158.88</b>	<b>9.72</b>	<b>\$172.33</b>	<b>11.74</b>	<b>\$190.37</b>	<b>11.01</b>	<b>\$188.15</b>
Single size products	Aggregate	15.76	\$317.49	20.70	\$385.08	22.27	\$441.86	21.36	\$427.62	22.73	\$466.01
	Armour	0.08	\$1.21	0.10	\$1.64	0.07	\$1.30	0.92	\$30.90	0.06	\$1.73
<b>Single size products Total</b>		<b>15.84</b>	<b>\$318.70</b>	<b>20.80</b>	<b>\$386.72</b>	<b>22.33</b>	<b>\$443.15</b>	<b>22.28</b>	<b>\$458.53</b>	<b>22.80</b>	<b>\$467.75</b>
<b>Financial Year Total</b>		<b>54.09</b>	<b>\$801.01</b>	<b>58.05</b>	<b>\$854.67</b>	<b>61.16</b>	<b>\$989.17</b>	<b>62.86</b>	<b>\$1,023.31</b>	<b>63.11</b>	<b>\$1,061.29</b>

Note: The numbers shown in this table may vary from previous reports due to the inclusions of data from late legislative report submissions

**Table 2.3 Extractive industries production and value of sales by rock type last five financial years**

Rock Group	Rock Type	FY 2015-16		FY 2016-17		FY 2017-18		FY 2018-19		FY 2019-20	
		Production (million tonnes)	Value of Sales (\$ million)	Production (million tonnes)	Value of Sales (\$ million)	Production (million tonnes)	Value of Sales (\$ million)	Production (million tonnes)	Value of Sales (\$ million)	Production (million tonnes)	Value of Sales (\$ million)
Hard Rock	Basalt	18.53	\$312.52	20.78	\$333.98	23.33	\$382.01	25.46	\$435.24	25.91	\$444.57
	Dolerite	-	-	-	-	0.02	\$0.23	0.001	\$0.01	-	-
	Gneiss	-	-	0.03	\$0.00	0.01	\$0.01	0.01	\$0.00	0.08	\$1.92
	Granite	5.37	\$99.86	5.92	\$104.98	5.37	\$123.00	5.35	\$117.65	7.06	\$138.80
	Hornfels	4.20	\$59.30	5.01	\$73.10	5.23	\$85.85	5.22	\$86.87	5.27	\$89.60
	Quartzite	0.08	\$0.66	0.07	\$0.54	0.03	\$0.64	0.03	\$0.75	0.01	\$0.60
	Rhyodacite	1.59	\$35.83	1.80	\$38.03	1.78	\$43.64	1.51	\$33.52	1.54	\$35.53
	Schist	0.24	\$3.67	0.22	\$4.04	0.27	\$5.86	0.48	\$9.31	0.43	\$8.32
	Slate	0.00	\$0.64	0.03	\$0.98	0.04	\$1.25	0.04	\$1.17	0.04	\$1.36
Trachyte	0.02	\$0.48	0.03	\$0.54	0.04	\$0.80	0.03	\$0.70	0.03	\$0.51	
<b>Hard Rock Total</b>		<b>30.04</b>	<b>\$512.95</b>	<b>33.89</b>	<b>\$556.19</b>	<b>36.13</b>	<b>\$643.28</b>	<b>38.13</b>	<b>\$685.22</b>	<b>40.37</b>	<b>\$721.22</b>
Soft Rock	Clay and Clay Shale	1.85	\$3.67	1.37	\$3.54	1.48	\$3.90	1.20	\$3.49	1.31	\$4.83
	Limestone	1.84	\$31.04	1.78	\$25.58	1.80	\$28.62	1.98	\$28.91	1.93	\$30.87
	Sand and Gravel	16.49	\$212.31	16.62	\$217.02	16.89	\$253.79	16.67	\$248.87	14.70	\$246.23
	Scoria	0.74	\$11.01	0.69	\$11.41	1.15	\$18.07	0.76	\$12.97	0.92	\$15.09
	Sedimentary*	2.77	\$26.86	2.95	\$37.09	3.09	\$36.13	3.76	\$39.75	3.41	\$39.10
	Soil	0.03	\$0.41	0.03	\$0.42	0.05	\$0.60	0.05	\$0.62	0.06	\$0.10
Tuff	0.33	\$2.76	0.72	\$3.44	0.58	\$4.79	0.32	\$3.48	0.41	\$3.84	
<b>Soft Rock Total</b>		<b>24.05</b>	<b>\$288.06</b>	<b>24.16</b>	<b>\$298.48</b>	<b>25.04</b>	<b>\$345.89</b>	<b>24.73</b>	<b>\$338.09</b>	<b>22.73</b>	<b>\$340.06</b>
<b>Financial Year Total</b>		<b>54.09</b>	<b>\$801.01</b>	<b>58.05</b>	<b>\$854.67</b>	<b>61.16</b>	<b>\$989.17</b>	<b>62.86</b>	<b>\$1,023.31</b>	<b>63.11</b>	<b>\$1,061.29</b>

\*Sedimentary (usually rippable rocks including sandstone, shale, siltstone, chert, mudstone, claystone)

Note: The numbers shown in this table may vary from previous reports due to the inclusions of data from late legislative report submissions

## 2.2 Work Authority

**Table 2.4 Work authorities granted**

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<b>Work Authority Granted</b>	15	18	15	10	13	11	4

## 2.3 Extractive work plans and administrative updates by notification

A work plan is the primary document describing the permitted activities to be undertaken on a work authority. Work plan variation is to change the scope of work from an existing work plan.

**Table 2.2.1 Extractive work plans and work plan variations submitted and approvals**

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<b>WP/WPV Submitted</b>	21	21	31	35	16	21	28
<b>WP/WPV Approved</b>	13	8	19	16	20	15	20

Statutory Endorsement - Earth Resources Regulation have assessed and endorsed the work plan or work plan variations as having met the requirements under the MRSDA.

**Table 2.2.2 Extractive work plans and work plan variations statutory endorsed**

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<b>WP/WPV Endorsed</b>	*	*	23	14	12	12	21

\*Data not readily available

Administrative updates by notification are minor changes to the existing work plan with no significant increase in risk arising from the new or changing work. Administrative updates do not require statutory endorsement (no further planning permission required). The administrative updates by notification process was introduced at the end of FY2017-18.

**Table 2.2.3 Extractive administrative updates by notifications received and acknowledged**

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<b>Received</b>	-	-	-	-	3	14	29
<b>Acknowledged</b>	-	-	-	-	2	14	17



## 3 Minerals

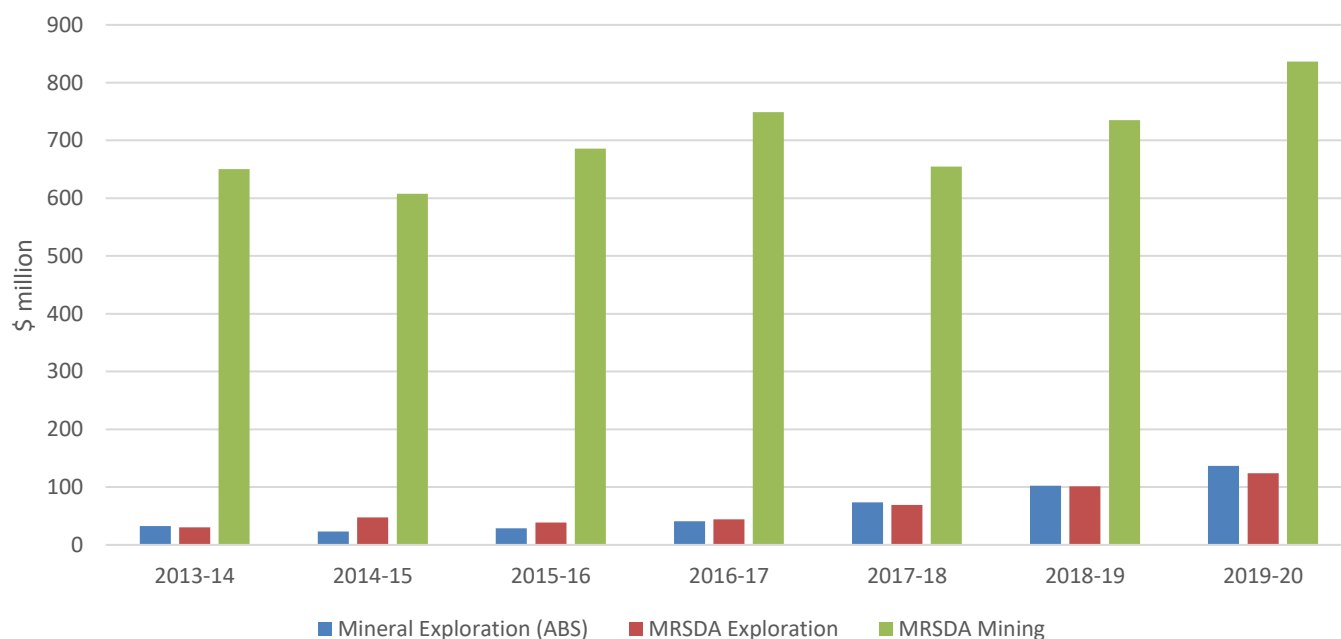
### 3.1 Mineral exploration and mining expenditure

**Table 3.1.1 Expenditure on mineral exploration and mining development (\$ million)**

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<b>Mineral Exploration (ABS)<sup>1</sup></b>	\$32.6	\$22.9	\$28.9	\$40.7	\$73.7	\$102.2	\$136.5
<b>MRSDA Exploration<sup>2</sup></b>	\$30.5	\$47.5	\$38.5	\$44.3	\$69.0	\$101.1	\$124.0
<b>MRSDA Mining<sup>3</sup></b>	\$650.3	\$607.8	\$685.8	\$748.8	\$654.7	\$734.9	\$836.3

Source: Figures collated from activity reports forwarded to DJPR required under the MRSDA, and ABS, Actual and Expected Private Mineral Exploration (<https://www.abs.gov.au/statistics/industry/mining/mineral-and-petroleum-exploration-australia/latest-release#data-download>)

**Figure 3.1.1 Expenditure on mineral exploration and mining**



<sup>1</sup> The ABS reports quarterly on private mineral exploration expenditure for all Australian states and the Northern Territory (NT). Victorian mineral exploration and mining expenditure is also reported in accordance with the requirements of the MRSDA. The ABS exploration expenditure statistics can vary significantly from expenditure reported under the MRSDA. The difference between these two exploration expenditure data sets is mainly due to the difference in methodologies for data collection and the inclusion of the exploration expenditure on mining licences in the MRSDA figure. The ABS statistics are a valid basis for comparison of Victorian expenditure with other states and territories. However, the MRSDA figures provide greater detail.

<sup>2</sup> Change of metric - expenditure on Exploration and Retention Licences with an Expenditure Reporting Period that ends within the Financial Year.

<sup>3</sup> The MRSDA mining expenditure figure covers all expenditure on mining and prospecting licences (including capital and operating expenses), less any specified exploration expenditure on mining and prospecting licences.

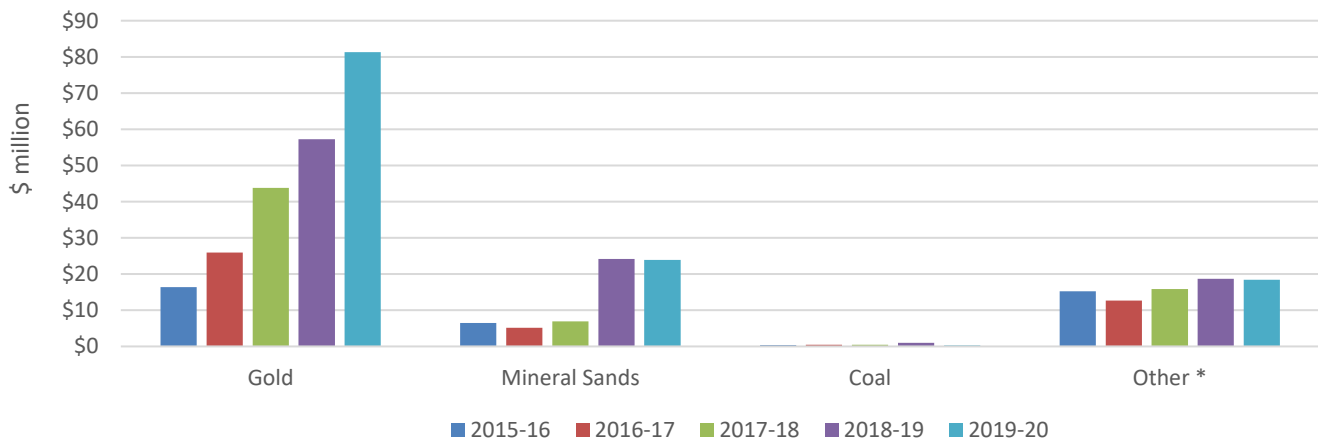
**Table 3.1.2 Mineral exploration expenditure by commodity and financial year (\$ million)**

Exploration expenditure are allocated to the primary nominated mineral commodity on the license in accordance with the MRSDA.

Year	Gold	Mineral Sands	Coal	Other *	Total
<b>2015-16</b>	\$16.4	\$6.5	\$0.37	\$15.3	<b>\$38.5</b>
<b>2016-17</b>	\$25.9	\$5.1	\$0.46	\$12.7	<b>\$44.2</b>
<b>2017-18</b>	\$44.3	\$8.1	\$0.47	\$16.1	<b>\$69.0</b>
<b>2018-19</b>	\$57.2	\$24.2	\$1.0	\$18.7	<b>\$101.0</b>
<b>2019-20</b>	\$81.4	\$23.9	\$0.28	\$18.5	<b>\$124.0</b>

\* "Other" includes cases where there is more than one primary mineral.

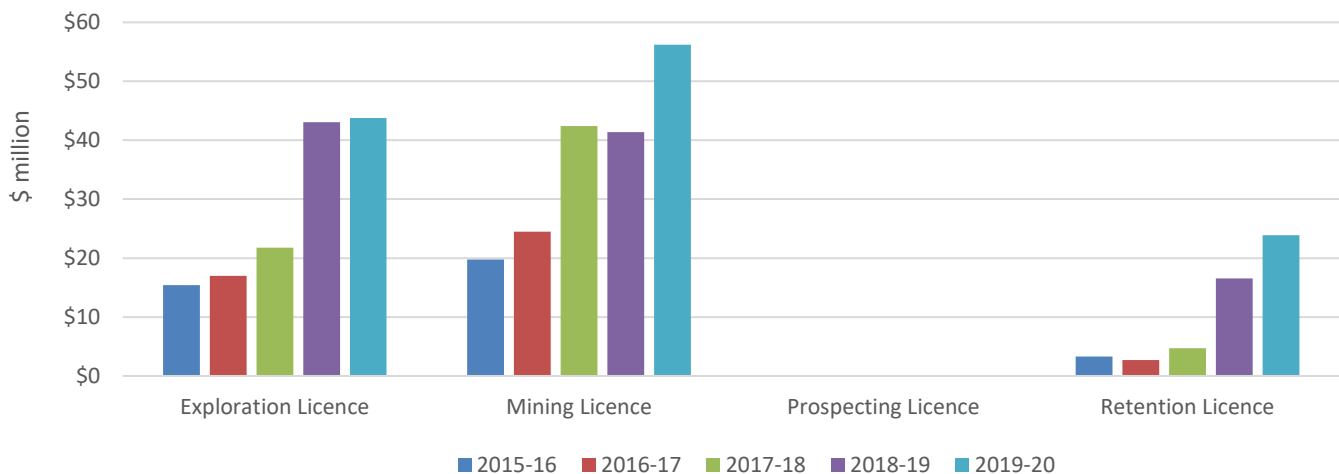
**Figure 3.1.2 Mineral exploration expenditure by commodity and financial year (\$ million)**



**Table 3.1.3 Mineral exploration expenditure by licence type and financial year (\$ million)**

Year	Exploration Licence	Mining Licence	Prospecting Licence	Retention Licence	Total
<b>2015-16</b>	\$15.4	\$19.8	\$0.1	\$3.3	<b>\$38.5</b>
<b>2016-17</b>	\$17.0	\$24.5	\$0.1	\$2.7	<b>\$44.2</b>
<b>2017-18</b>	\$21.8	\$42.4	\$0.1	\$4.7	<b>\$69.0</b>
<b>2018-19</b>	\$43.0	\$41.4	\$0.1	\$16.6	<b>\$101.1</b>
<b>2019-20</b>	\$43.8	\$56.2	\$0.1	\$23.9	<b>\$124.0</b>

**Figure 3.1.3 Mineral exploration expenditure by licence type financial year (\$ million)**



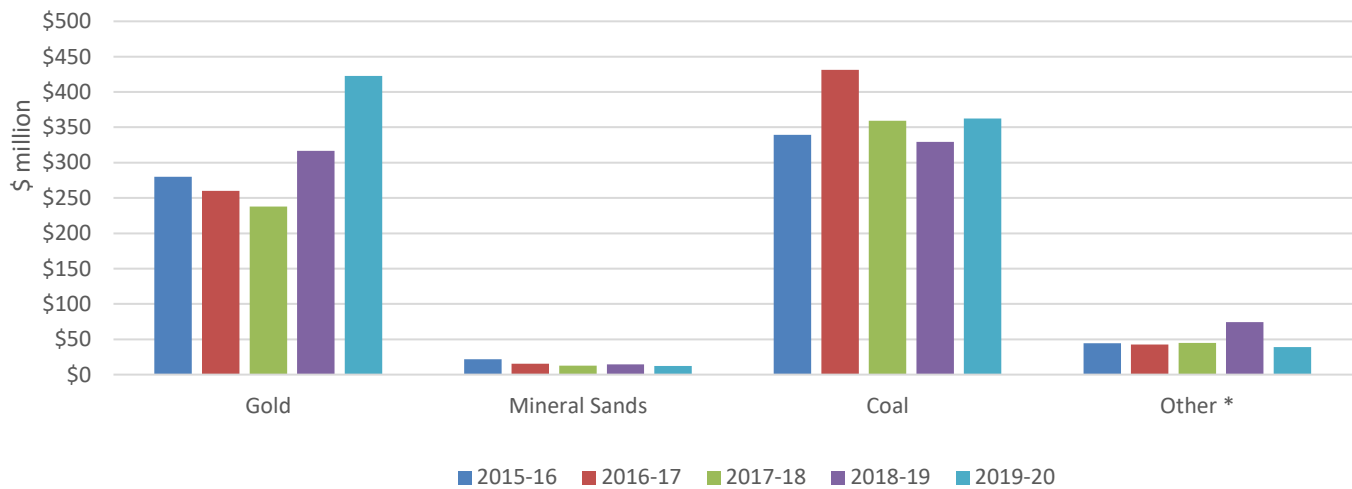
**Table 3.1.4 Mining expenditure by commodity and year 2015-16 to 2019-20 (\$ million)**

Mining expenditure are allocated to the primary nominated mineral commodity on the license in accordance with the MRSDA.

Year	Gold	Mineral Sands	Coal	Other *	Total
2015-16	\$280.2	\$21.8	\$339.4	\$44.4	\$685.8
2016-17	\$259.9	\$15.2	\$431.2	\$42.5	\$748.8
2017-18	\$238.2	\$12.6	\$359.1	\$44.8	\$654.7
2018-19	\$316.9	\$14.6	\$329.3	\$74.2	\$734.9
2019-20	\$422.5	\$12.4	\$362.2	\$39.2	\$836.3

\* "Other" includes cases where there is more than one primary mineral.

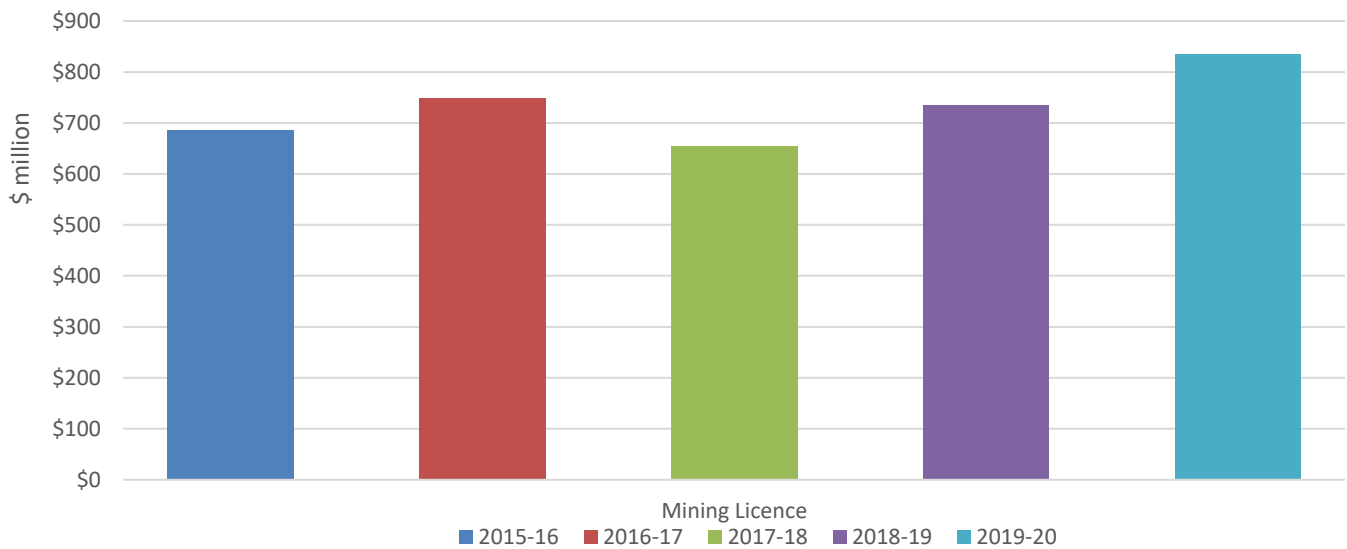
**Figure 3.1.4 Mining expenditure by commodity and financial year (\$ million)**



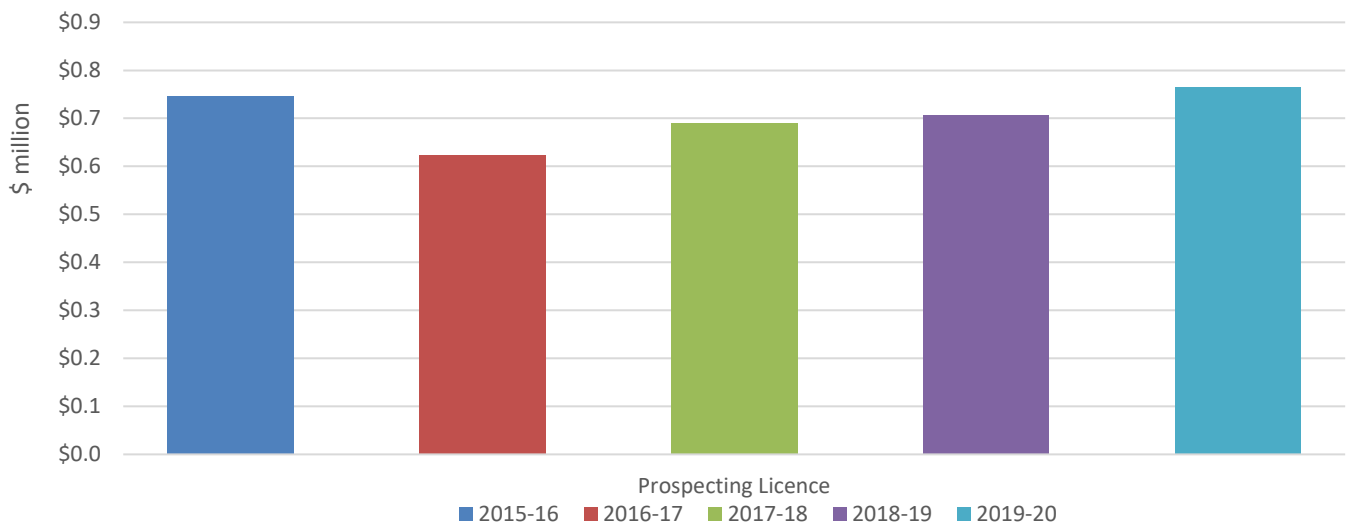
**Table 3.1.5 Mining expenditure by licence types and financial year (\$ million)**

Year	Mining Licence	Prospecting Licence	Total
2015-16	\$685.1	\$0.7	\$685.8
2016-17	\$748.2	\$0.6	\$748.8
2017-18	\$654.	\$0.7	\$654.7
2018-19	\$734.2	\$0.7	\$734.9
2019-20	\$835.6	\$0.8	\$836.3

**Figure 3.1.5 Mining expenditure for mining licences by financial year (\$ million)**



**Figure 3.1.6 Mining expenditure for prospecting licences by financial year (\$ million)**



## 3.2 Mineral production

**Table 3.2.1 Mineral production by financial year**

Financial Year	Gold* (ounce)	Antimony (tonne)	Zircon (tonne)	Rutile (tonne)	Ilmenite (tonne)	Feldspar (tonne)	Coal (1,000 tonnes)	Gypsum (m <sup>3</sup> )	Kaolin and Clay (tonne)
2013-14	225,168	5,336	128,064	243,355	563,371	44,254	58,001	454,526	167,333
2014-15	198,387	3,684	77,162	85,983	383,369	40,232	60,957	335,374	152,047
2015-16	256,653	5,945	52,026	90,318	57,763	30,730	59,757	314,759	202,229
2016-17	312,229	5,138	45,597	73,812	44,944	0	56,095	282,720	192,150
2017-18	364,294	2,570	27,515	48,381	24,390	0	45,062	399,569	171,932
2018-19	567,501	2,016	0	0	0	0	42,256	295,934	114,050
2019-20	792,267	3,141	0	0	61,197	0	40,372	282,874	154,812

\*Gold reported in troy ounces, coal in thousand tonnes, gypsum in cubic meters and the remainder in tonnes.

Note: The numbers shown in this table may vary from previous reports due to the inclusions of data from late legislative report submissions

**Table 3.2.2 Mineral production value by financial year (\$ million)**

Year	Gold	Antimony	Mineral Sands <sup>2</sup>	Industrial Minerals <sup>3</sup>	Coal <sup>1</sup>	Others <sup>4</sup>	Total
2013-14	\$303.4	\$12.5	\$316.5	\$14.1	N/A	\$0.2	\$646.7
2014-15	\$286.9	\$37.8	\$185.1	\$10.2	N/A	\$0.1	\$520.1
2015-16	\$411.4	\$30.6	\$175.9	\$10.0	N/A	\$0.6	\$628.5
2016-17	\$519.8	\$33.6	\$188.5	\$8.0	N/A	\$0.2	\$750.1
2017-18	\$613.5	\$28.2	\$172.6	\$11.7	N/A	\$0.2	\$826.2
2018-19	\$1,015.5	\$21.2	\$0	\$10.3	N/A	\$0.04	\$1,047.0
2019-20	\$1,836.9	\$24.8	\$9.5	\$8.9	N/A	\$0.3	\$1,880.4

<sup>1</sup> No unit value is assigned to coal for the purposes of determining its production value. Coal is almost entirely used for electricity production and is largely an internal transfer within mining/generation entities. As such, there is no available market price for coal.

<sup>2</sup> Mineral Sands (zircon, rutile, ilmenite)

<sup>3</sup> Industrial Minerals (feldspar, gypsum, kaolin & fine clay)

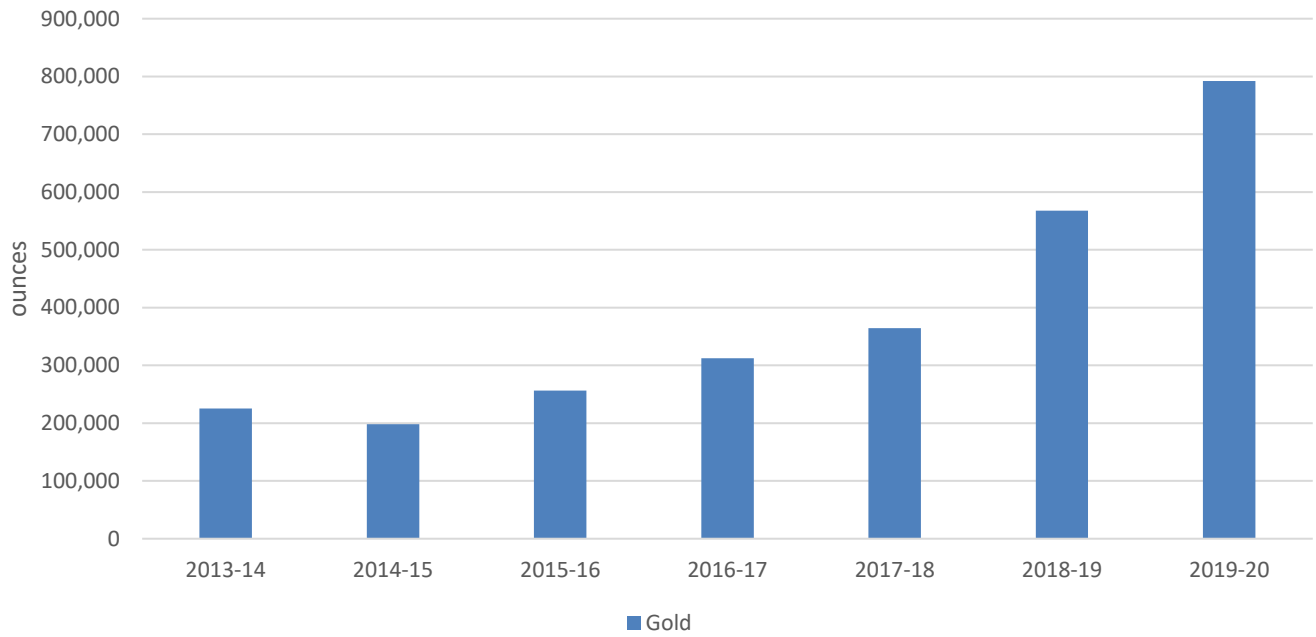
<sup>4</sup> Others (includes silver, peat and quartz)

Note: The numbers shown in this table may vary from previous reports due to the inclusions of data from late legislative report submissions



**Figure 3.2.1 Gold production (ounces) by financial year**

Gold production for 2019-20 was 792,267 ounces, the highest in the last seven years.



### 3.3 Mineral tenements

Table 3.3.1 Number of live licences at the end of each financial year

Licence Type	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Exploration Licence	271	247	211	180	200	212	217
Mining Licence	191	171	170	162	156	145	141
Prospecting Licence	31	41	51	54	59	55	60
Retention Licence	1	8	11	15	20	21	27
<b>Total</b>	<b>494</b>	<b>467</b>	<b>443</b>	<b>411</b>	<b>435</b>	<b>433</b>	<b>445</b>

Figure 3.3.1 Number of live licences at the end of each financial year

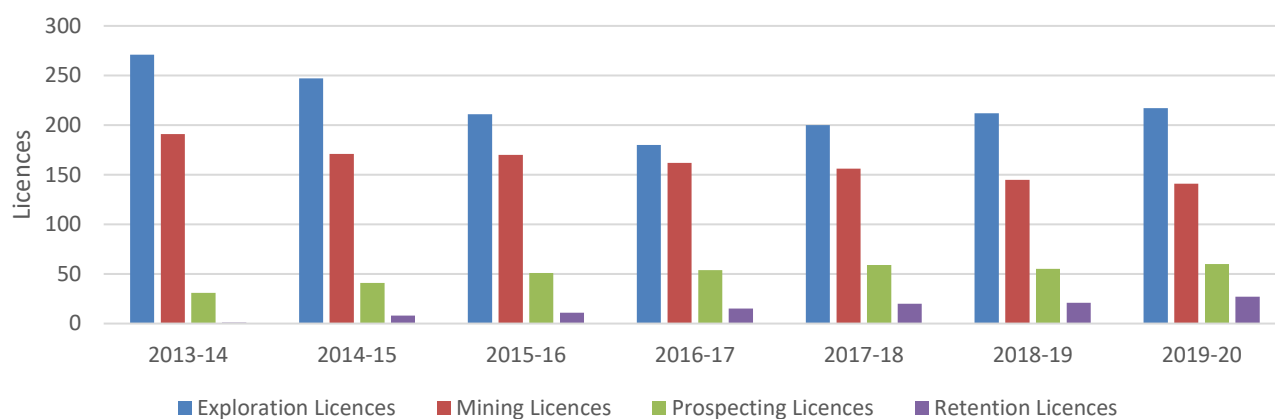
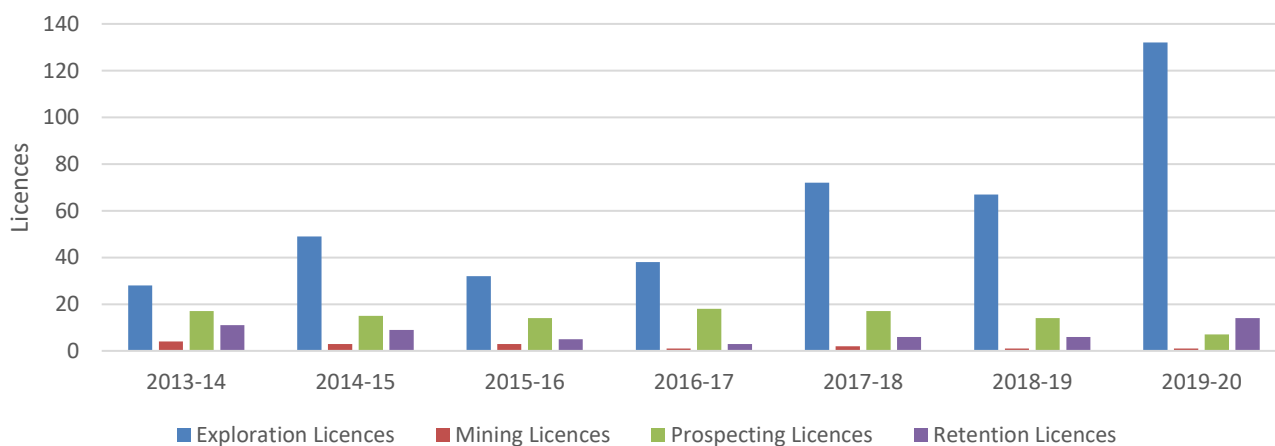


Table 3.3.2 Number of licence applications submitted by financial year

Licence Type	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Exploration Licence	28	49	32	38	72	67	132
Mining Licence	4	3	3	1	2	1	1
Prospecting Licence	17	15	14	18	17	14	7
Retention Licence	11	9	5	3	6	6	14
<b>Total</b>	<b>60</b>	<b>76</b>	<b>54</b>	<b>60</b>	<b>97</b>	<b>88</b>	<b>154</b>

Figure 3.3.2 Number of licence applications submitted by financial year



**Table 3.3.3 Licence applications finalised (Granted, Withdrawn, Refused) in 2019-20**

	Received	Granted	Withdrawn	Refused
Exploration Licence	132	25	5	0
Mining Licence	1	2	1	0
Prospecting Licence	7	14	1	0
Retention Licence	14	6	2	0
<b>Total</b>	<b>154</b>	<b>47</b>	<b>9</b>	<b>0</b>

**Table 3.3.4 Licence applications granted by financial year**

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Exploration Licence	37	37	17	21	63	36	25
Mining Licence	9	3	2	0	3	1	2
Prospecting Licence	18	13	12	11	12	14	14
Retention Licence	1	7	3	4	7	1	6
<b>Total</b>	<b>65</b>	<b>60</b>	<b>34</b>	<b>36</b>	<b>85</b>	<b>52</b>	<b>47</b>

**Table 3.3.5 Licences renewed in 2019-20**

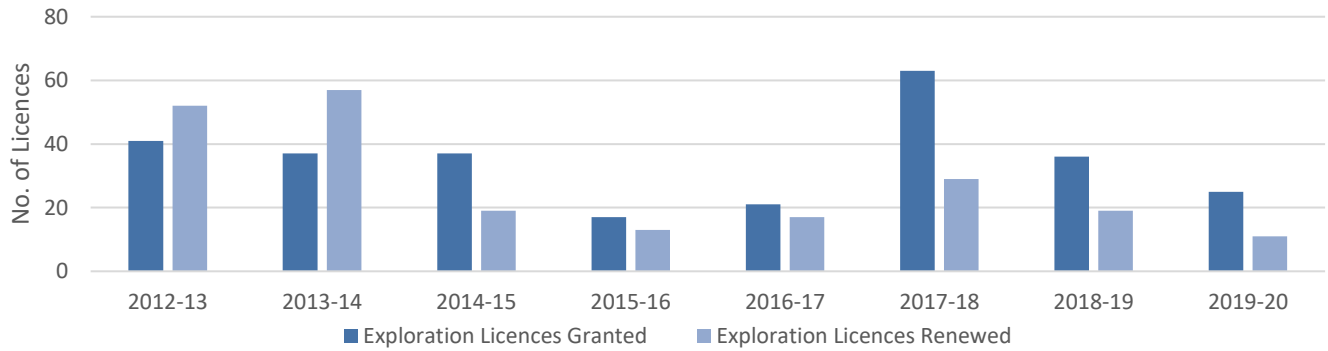
	Received	Renewed*	Withdrawn	Refused
Exploration Licence	21	11	1	0
Mining Licence	20	9	4	0
Retention Licence	3	1	0	0
<b>Total</b>	<b>44</b>	<b>21</b>	<b>5</b>	<b>0</b>

\*Some renewals completed in the financial year may have been received from previous financial years

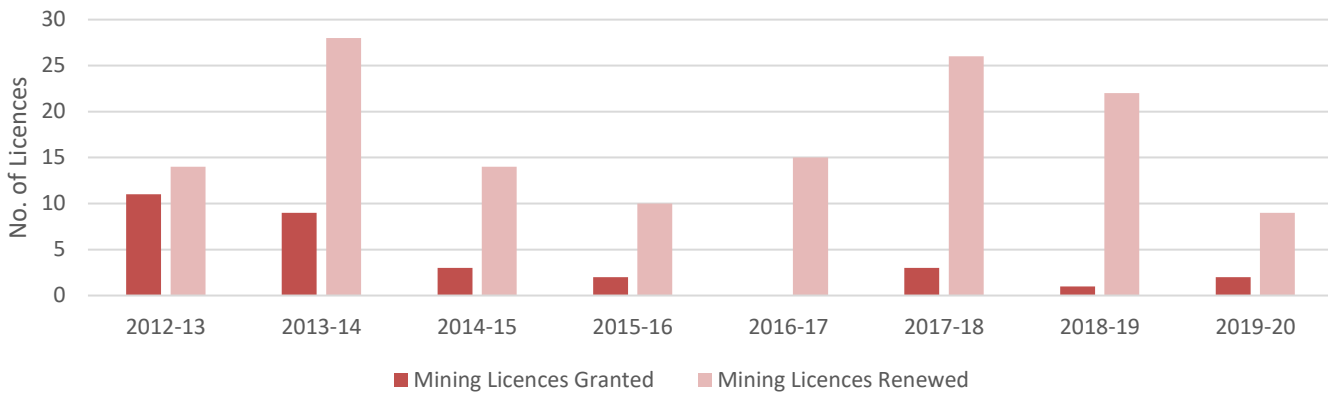
**Table 3.3.6 Licences renewed by financial year**

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Exploration Licence	57	19	13	17	29	19	11
Mining Licence	28	14	10	15	26	22	9
Retention Licence	-	-	-	-	-	-	1
<b>Total</b>	<b>85</b>	<b>33</b>	<b>23</b>	<b>32</b>	<b>55</b>	<b>41</b>	<b>21</b>

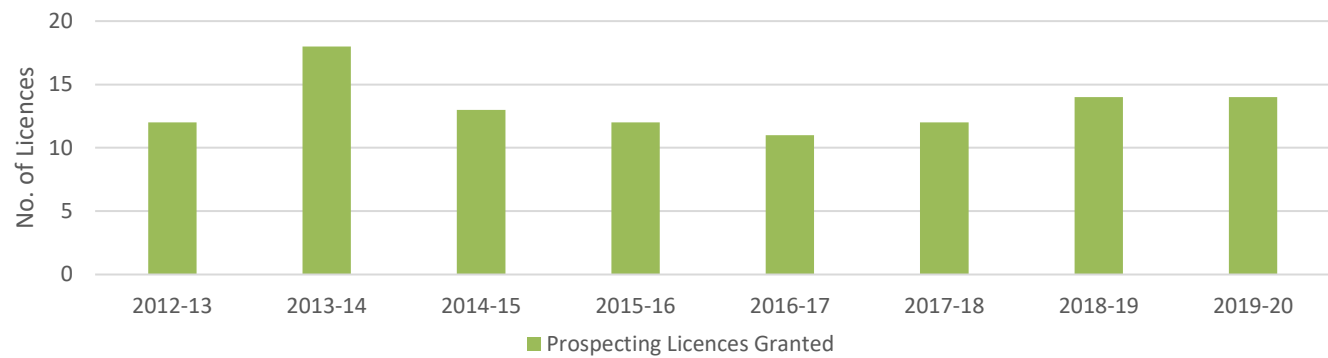
**Figure 3.3.3 Exploration licences granted and renewed by financial year**



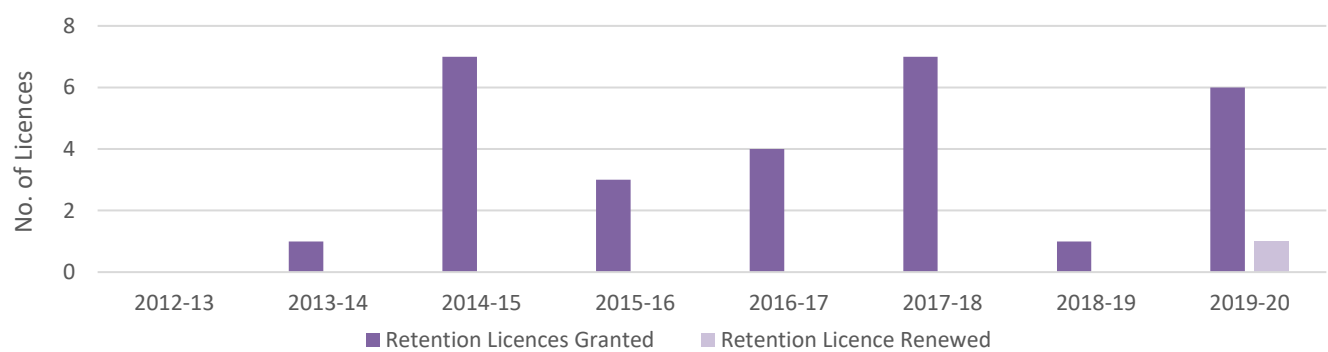
**Figure 3.3.4 Mining licences granted and renewed by financial year**



**Figure 3.3.5 Prospecting licences granted by financial year**



**Figure 3.3.6 Retention licences granted by financial year**



### 3.4 Mineral work plans and administrative updates by notification

A work plan is the primary document describing the permitted activities to be undertaken on a licence. A work plan variation is submitted by a licence holder when they want to change the scope of work from an existing work plan.

**Table 3.4.1 Minerals work plans and work plan variations submitted and approvals**

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<b>WP Submitted</b>	40	25	20	20	30	22	22
<b>WP Approved</b>	28	30	12	4	15	20	14

Statutory Endorsement - Earth Resources Regulation have assessed and endorsed the work plan or work plan variations as having met the requirements under the MRSDA.

**Table 3.4.2 Extractive work plans and work plan variations statutory endorsed**

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<b>WP/WPV Endorsed</b>	*	*	9	1	1	5	4

\*Data not readily available

Administrative updates by notification are minor changes to the existing work plan with no significant increase in risk arising from the new or changing work. Administrative updates do not require statutory endorsement (no further planning permission required). The administrative updates by notification process was introduced at the end of FY2017-18.

**Table 3.4.3 Minerals administrative updates by notifications received and acknowledged**

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<b>Received</b>	-	-	-	-	2	11	10
<b>Acknowledged</b>	-	-	-	-	2	8	9



## 4 Petroleum, geothermal, offshore pipelines and greenhouse gas

Exploration, within Victoria's jurisdiction, for petroleum occurred in the offshore parts of the Otway and Gippsland geological basins. Production activity occurred in the Otway Basin.

Offshore activities occur within three nautical miles of the coast, according to Victorian legislation. Waters greater than three nautical miles are covered by Commonwealth legislation and reported separately by Commonwealth Government agencies.

A legislative moratorium is in place for onshore conventional gas until 30 June 2021. Hydraulic fracturing is banned under Victorian legislation.

### 4.1 Gas production and storage

Gas production located within Victoria's three nautical mile zone.

**Table 4.1.1 Gas production 2019-20**

Condensate (bbl*)	Gas Production (MMscf**)	Gas Production (Petajoules^)	CO2 Prod. (tonnes)	Gas Injection (MMscf)	Comments
99,094	9,069	9.83	31,029	-	Ex wellhead figures

\*bbl = barrels

\*\*MMscf = million standard cubic feet

(Unit Conversion: 1 Sm<sup>3</sup> of oil = 6.29 bbl and 1 Sm<sup>3</sup> of gas = 35.3 Scf)

^ Convert Gas MMscf to petajoules using online sales gas converter:

<https://www.convert-me.com/en/convert/energy/mscfcgas.html>

**Table 4.1.2 Underground gas storage 2019-20**

Condensate (bbl*)	Gas Storage (MMscf**)	Gas Storage (Petajoules^)	CO2 Prod. (tonnes)	Gas Injection (MMscf)	Comments
944	15,959	17.31	-	12,231	Storage

\*bbl = barrels

\*\*MMscf = million standard cubic feet

(Unit Conversion: 1 Sm<sup>3</sup> of oil = 6.29 bbl and 1 Sm<sup>3</sup> of gas = 35.3 Scf)

^ Convert Gas mmscf to petajoules using online sales gas converter: <https://www.convert-me.com/en/convert/energy/mscfcgas.html>

## 4.2 Drilling

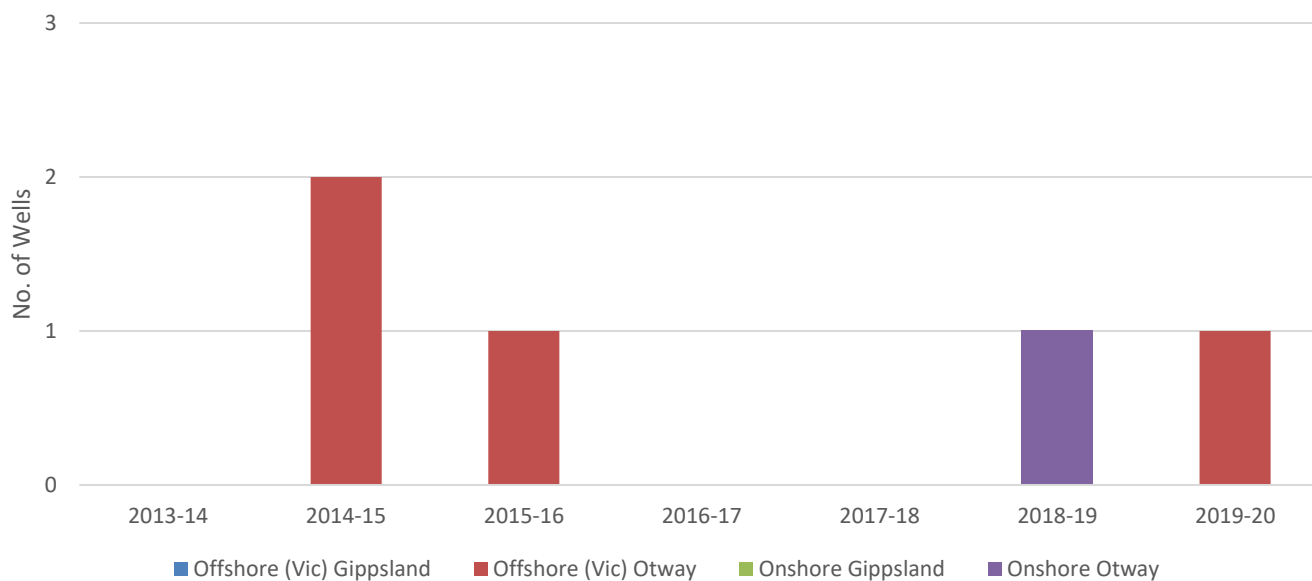
No drilling or seismic activities occurred on onshore petroleum tenements in 2019-20

### Exploration, appraisal and production wells

**Table 4.2.1 Number of wells drilled in Victoria by financial year**

Year	Offshore (Vic) Gippsland	Offshore (Vic) Otway	Onshore Gippsland	Onshore Otway	Total wells
2013-14	0	0	0	0	0
2014-15	0	2	0	0	2
2015-16	0	1	0	0	1
2016-17	0	0	0	0	0
2017-18	0	0	0	0	0
2018-19	0	0	0	1	1
2019-20	0	1	0	0	1
<b>Total</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>5</b>

**Figure 4.2.1 Number of exploration wells drilled by financial year**



## 4.3 Petroleum, offshore pipelines, geothermal and greenhouse gas licences

**Table 4.3.1 Overview of onshore petroleum tenements as at 30 June 2020**

Onshore Petroleum Licences	No. of Licences
Onshore Petroleum Production Licence	12
Onshore Petroleum Exploration Permit	10
Onshore Petroleum Special Drilling Authorisation	2
Onshore Petroleum Special Access Authorisation	1
Onshore Petroleum Retention Lease	1
<b>Total</b>	<b>26</b>

**Table 4.3.2 Overview of offshore (Victorian waters) petroleum tenements as at 30 June 2020**

Offshore Petroleum Licences	No. of Licences
Offshore Petroleum Exploration Permit	3
Offshore Petroleum Access Authority	1
Offshore Petroleum Retention Lease	1
Offshore Petroleum Production Licence	1
<b>Total</b>	<b>6</b>

**Table 4.3.3 Offshore Pipeline licences as at 30 June 2020**

Offshore pipelines	No. of Licences
Offshore Pipeline Licence	14

**Table 4.3.4 Overview of geothermal exploration permits as at 30 June 2020**

Geothermal energy	No. of Licences
Geothermal Exploration Permit	1

**Table 4.3.5 Offshore greenhouse gas assessment permits as at 30 June 2020**

Greenhouse gas storage	No. of Licences
Offshore Greenhouse Gas Assessment Permit	1

## 5 Revenue

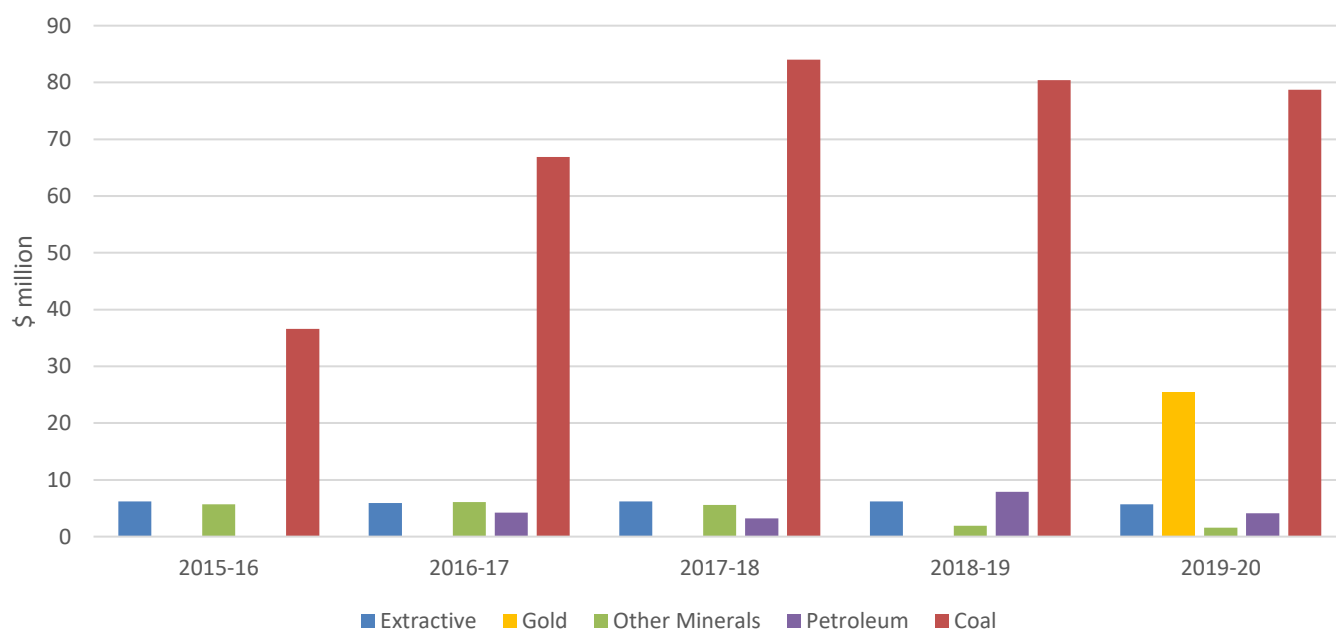
### 5.1 Royalties Payable

Table 5.1.1 Royalties payable by financial year (\$ million)

Year	Extractive (\$ million)	Gold (\$ million)	Other Minerals (\$ million)	Petroleum (\$ million)	Coal (\$ million)	Total (\$ million)
2015-16	\$6.2	-	\$5.7	\$0.1	\$36.6	\$47.7
2016-17	\$5.9	-	\$6.1	\$4.2	\$66.9	\$83.1
2017-18	\$6.2	-	\$5.6	\$3.2	\$84.0	\$99.1
2018-19	\$6.2	-	\$1.9	\$7.9	\$80.4	\$96.4
2019-20	\$5.7	\$25.4*	\$1.6	\$4.1	\$78.7	\$115.6

\*From 1 January 2020, gold produced under a mining licence in Victoria is subject to a royalty. The royalty only applies to gold produced in a financial year in excess of 2,500 ounces.

Figure 5.1.1 Royalties payable by financial year (\$ million)

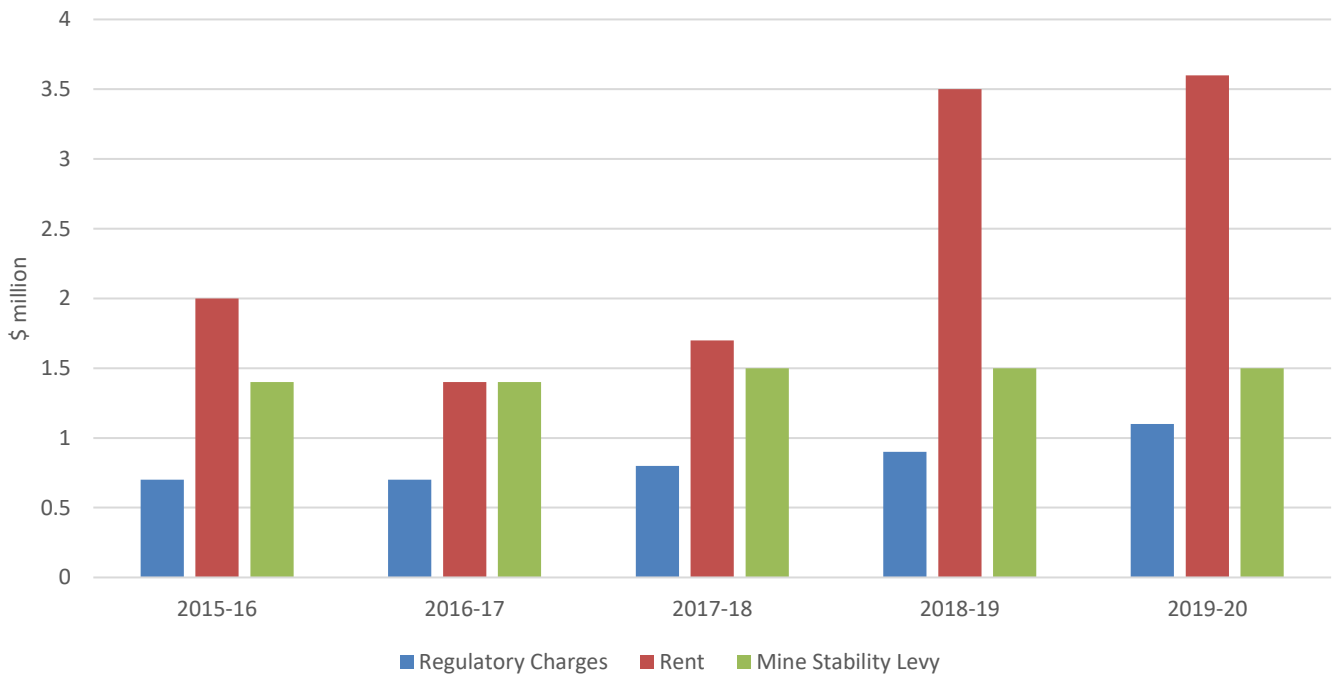


## 5.2 Regulatory Fees

Table 5.2.1 Regulatory fees by financial year (\$ million)

Year	Regulatory Charges (\$ million)	Rent (\$ million)	Mine Stability Levy (\$ million)	Total (\$ million)
2015-16	\$0.7	\$2.0	\$1.4	\$4.1
2016-17	\$0.7	\$1.4	\$1.4	\$3.5
2017-18	\$0.8	\$2.8	\$1.5	\$5.1
2018-19	\$0.9	\$3.5	\$1.5	\$5.9
2019-20	\$1.1	\$3.6	\$1.5	\$6.2

Figure 5.2.1 Regulatory fees by financial year (\$ million)





## 6 Rehabilitation Bonds

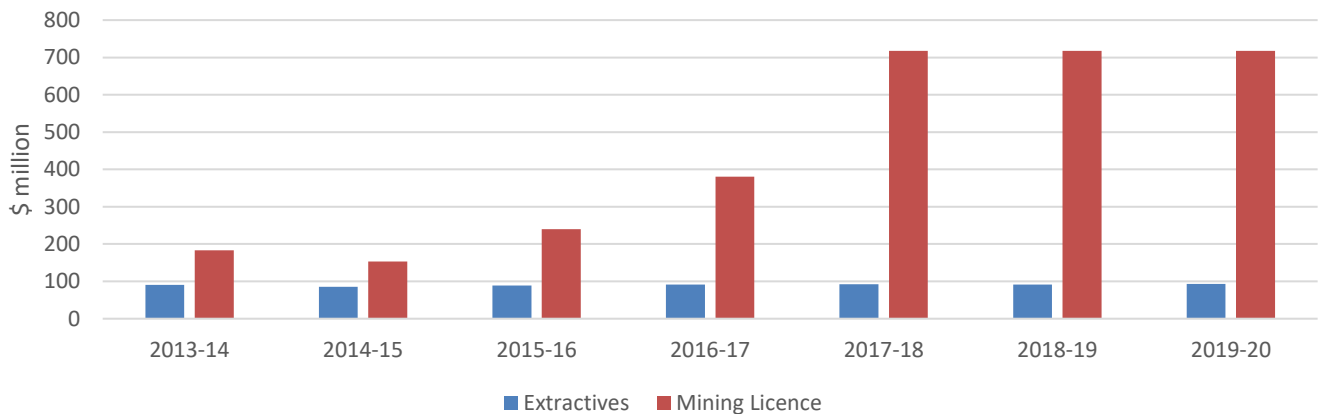
### 6.1 Bonds Held

The total monetary value of the rehabilitation bonds held by Earth Resources Regulation under the MRSDA in 2019-20 was \$814.1 million. Up to date bonds held by the state can be found on the Earth Resources Regulation Rehabilitation website: <https://earthresources.vic.gov.au/community-and-land-use/rehabilitation>

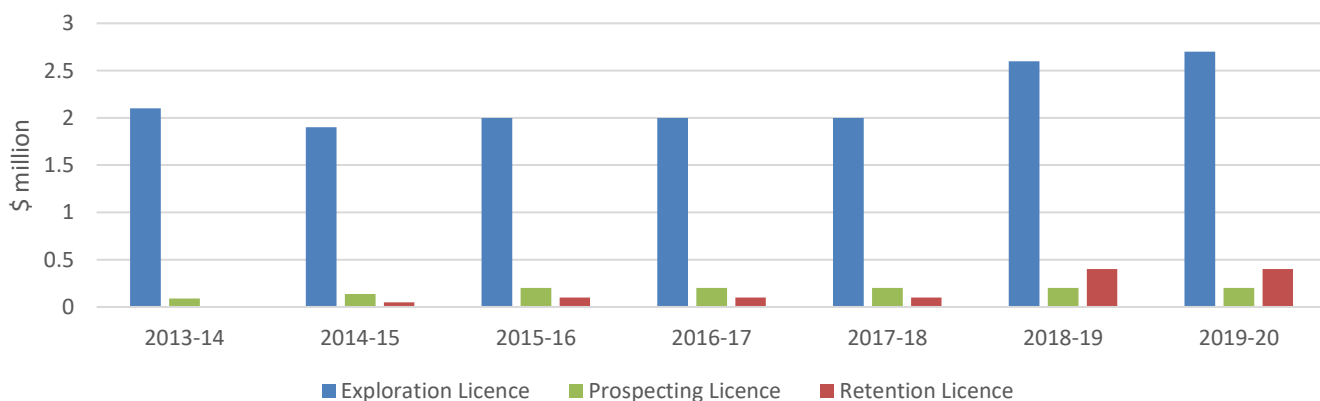
**Table 6.1.1 Value of rehabilitation bonds by authority type by financial year (\$ million)**

Year	Extractives (\$ million)	Mining Licence (\$ million)	Exploration Licence (\$ million)	Prospecting Licence (\$ million)	Retention Licence (\$ million)	Total (\$ million)
2013-14	\$90.9	\$183.4	\$2.1	\$0.1	\$0.010	\$276.5
2014-15	\$85.8	\$153.0	\$1.9	\$0.1	\$0.050	\$241.0
2015-16	\$88.6	\$239.6	\$2.0	\$0.2	\$0.1	\$330.5
2016-17	\$91.7	\$380.5	\$2.0	\$0.2	\$0.1	\$474.5
2017-18	\$92.2	\$717.7	\$2.0	\$0.2	\$0.1	\$812.2
2018-19	\$91.9	\$717.7	\$2.6	\$0.2	\$0.4	\$812.7
2019-20	\$93.0	\$717.9	\$2.7	\$0.2	\$0.4	\$814.1

**Figure 6.1.1 Extractive and Mining rehabilitation bonds held by financial year (\$ million)**



**Figure 6.1.2 Exploration, Prospecting and Retention licence rehabilitation bonds held by financial year (\$ million)**

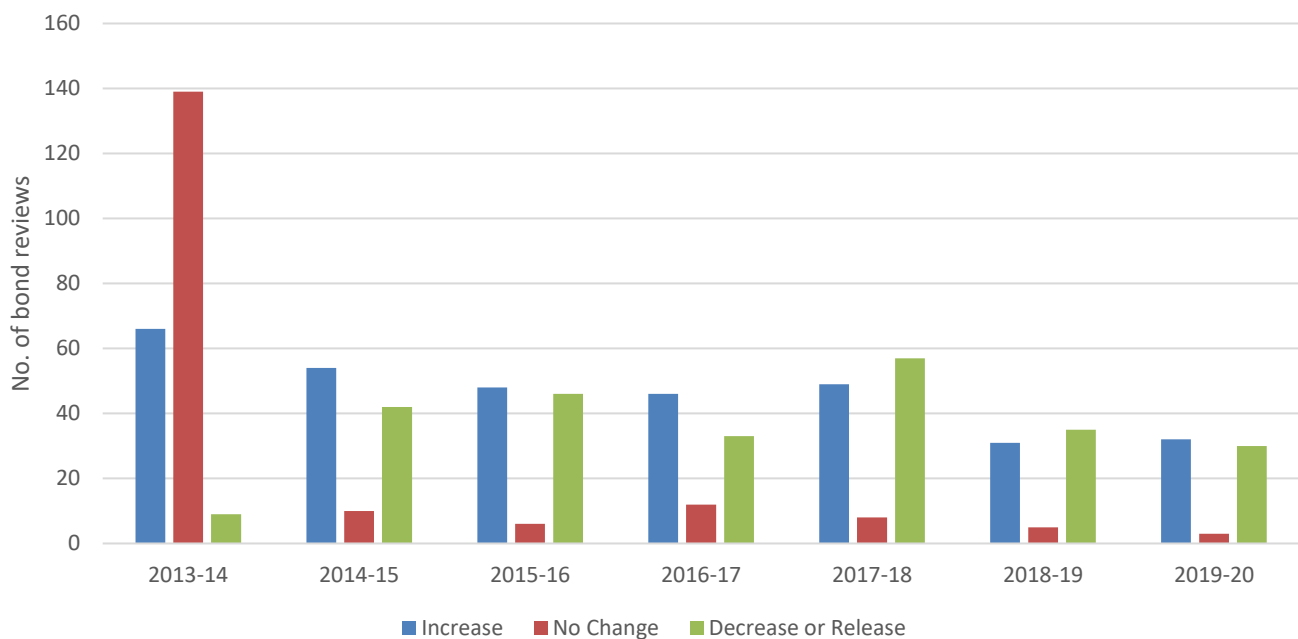


## 6.2 Bond Reviews

Table 6.2.1 Rehabilitation bond reviews by financial year

Year	Number of bonds reviewed	Result of review - increase	Result of review - no change	Result of review - decrease or release
2013-14	214	66	139	9
2014-15	106	54	10	42
2015-16	100	48	6	46
2016-17	91	46	12	33
2017-18	114	49	8	57
2018-19	71	31	5	35
2019-20	65	32	3	30

Figure 6.2.1 Outcome of bond reviews by financial year



## 7 Compliance

Earth Resources Regulation undertakes a compliance program to ensure that authority holders comply with their obligations. Monitoring, compliance and enforcement activities under the MRSDA are summarised in the table below. Inspector field activities were limited to responding to critical incidents and key preventative measures during the period of COVID-19 restrictions.

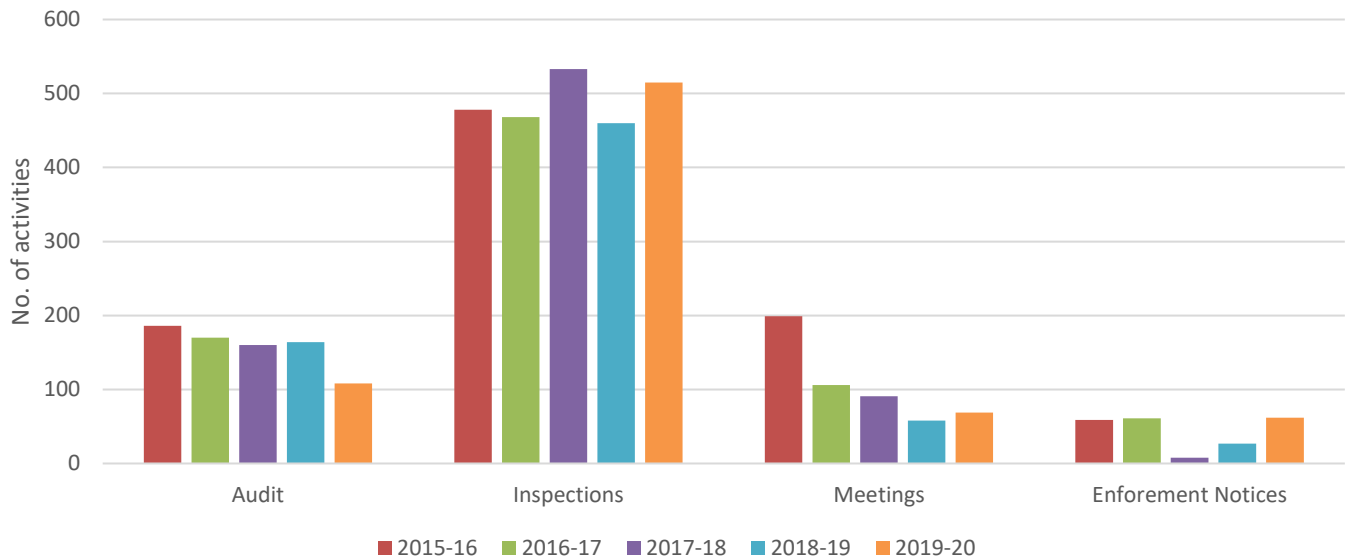
**Table 7.1 Compliance activities by financial year**

Activities	Audits	Inspections <sup>^</sup>	Meetings	Enforcement Notices *	Total
<b>2015-16</b>	186	478	199	59	<b>922</b>
<b>2016-17</b>	170	468	106	61	<b>805</b>
<b>2017-18</b>	160	533	91	8	<b>792</b>
<b>2018-19</b>	164	460	58	27	<b>709</b>
<b>2019-20</b>	108	515	69	62	<b>754</b>

\*MRSDA s110 and s110a Notices issued

<sup>^</sup> Inspection includes site closures and site visits

**Figure 7.1 Compliance activities by financial year**




## 7.1 Industry annual returns submission rate

As at 07 December 2020, 88% of licences have submitted the annual Extractive Production & Royalty / Mineral Expenditure & Activity returns.

**Table 7.1.1 Production & Royalty / Mineral Expenditure & Activity 2019-20 report submission rate as at 07 Dec 2020**

Licence Types	Licences required to submit annual returns in 2019-20	Annual Returns received by 31 Jul 2020	Submission rate 31 Jul 2020	Annual Returns received by 07 Dec 2020	Submission rate 07 Dec 2020	Annual Returns not yet received
<b>Mining licence</b>	<b>147</b>	77	52%	125	85%	<b>22</b>
<b>Prospecting Licence</b>	<b>69</b>	41	59%	53	77%	<b>16</b>
<b>Extractives</b>	<b>877</b>	575	66%	793	90%	<b>84</b>
<b>Exploration Licence</b>	<b>236</b>	Varying due dates		200	85%	<b>36</b>
<b>Retention Licence</b>	<b>27</b>			23	85%	<b>4</b>
	<b>1,356</b>			<b>1,194</b>	<b>88%</b>	<b>162</b>



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