

# Earth Resources Regulation Annual Statistical Report FY 2020-21



## Acknowledgement of Traditional Owners

The Victorian Government proudly acknowledges 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.

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 for offshore pipelines in Victorian waters<sup>1</sup>. We are committed to being an effective regulator.

Earth Resources Regulation's role includes:

- granting rights to access resources,
- assessing works and setting controls for the extraction of resources,
- assessing site rehabilitation liabilities and setting bonds,
- conducting compliance operations to ensure that authority holders fulfil their regulatory obligations, site rehabilitation
- engaging with communities and stakeholders, and
- collecting regulatory fees and royalties.

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 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 2020-21 returns include:

## Extractive operations

- Rock production decreased 1.4% from 64.6 to 63.7 million tonnes (*Table 2.1.1*)
- Value of sales decreased 3.4% from \$1,066.5 to \$1030.4 million (*Table 2.1.1*)
- Work plan approvals decreased from 20 to 19 (*Table 2.3.1*)

## Minerals exploration and mining operations

- Exploration expenditure increased 51.5% from \$126.4 to \$191.5 million (*Table 3.1.1*)
- Mining expenditure decreased 0.7% from \$837.1 to \$831.6 million (*Table 3.1.1*)
- Gold exploration expenditure increased 82.7% from \$81.7 to \$149.3 million (*Table 3.1.2*)
- Gold mining expenditure decreased 5% from \$422.5 to \$401.2 million (*Table 3.1.4*)
- Gold production decreased 8.6% from 790,054 to 722,239 ounces (*Table 3.2.1*)
- Licence applications granted increased by 114.9% from 47 to 101 (*Table 3.3.2*)

## Petroleum

- Gas production decreased 16.9% from 9.83 to 8.17 petajoules of energy (*Table 4.1.1*)

## Royalties and regulatory fees

- Royalties payable increased 25% from \$115.8 to \$144.8 million (*Table 5.1.1*)
- Gold royalties accounted for 33.3% of total royalties payable (\$48.2 out of \$144.8 million) (*Table 5.1.1*)
- Revenue from regulatory fees was \$6.5 million (*Table 5.2.1*)

## Rehabilitation bonds

- Total value of rehabilitation bonds held under the MRSDA was approximately \$814.4 million (*Table 6.1.1*)

The *Earth Resources Regulation 2020-21 Statistical Report* presents a compilation of data as reported by tenement holders to Earth Resources Regulation. All production and expenditure figures are certified by tenement holders. The industry data in the report derives from about 94 per cent of mineral industry and 84 per cent of extractive industry annual returns. This includes 17 per cent of extractive industry annual returns where some components were not satisfactory and awaiting more details to be provided by tenement holders, as at the publication of this report. Detailed breakdown of the annual returns received are shown in *Table 7.1.1*.

Historical data in the report have been updated to reflect amendments to annual returns by tenement holders and annual returns received after the publication of the previous year's report. The current annual statistical report may be updated in the future to accommodate annual returns received after this publication.

<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 Extractive Production

As at 30 June 2021, there were 848 quarries holding current work authorities under the MRSDA. As at 05 November 2021, a total of 427 quarries reported production in FY2020-21. The production volume decreased from 64.58 to 63.68 million tonnes and the value of sales decreased from \$1,066.48 million to \$1,030.39 million.

**Table 2.1.1 Production and value of sales by financial year**

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
<b>Current quarries at EOFY</b>	884	888	888	881	873	860	848
<b>Quarries with production</b>	555	543	547	554	546	524	427
<b>Production (million tonnes)</b>	50.71	54.09	58.08	61.21	62.92	64.59	63.68
<b>Value of sales (\$million)</b>	\$763.9	\$800.95	\$854.80	\$989.30	\$1,021.37	\$1,066.48	\$1,030.39

Note: Some historical data has been adjusted to accommodate amendments to annual returns by tenement holders and annual returns received after the publication of the previous year's report.

**Figure 2.1.1 Production and value of sales by financial year**

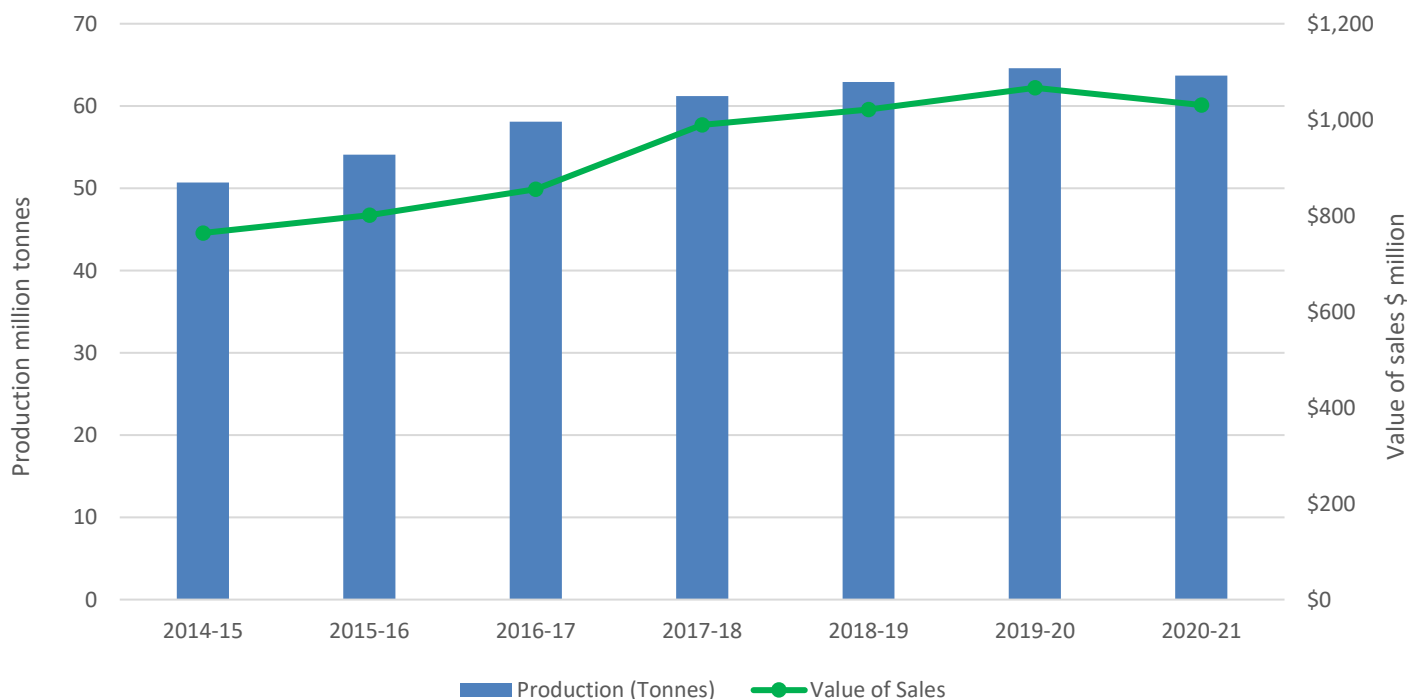


Table 2.1.2 Extractive industries production and value of sales by product type five financial years

Product Group	Product Type Groups	FY 2016-17		FY 2017-18		FY 2018-19		FY 2019-20		FY 2020-21	
		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)
Clay products	Brick	1.07	\$3.09	0.99	\$3.02	0.94	\$2.71	0.93	\$2.59	0.91	\$2.54
	Stoneware Pottery	0.001	\$0.03	0.001	\$0.04	0.004	\$0.05	0.001	\$0.02	0.001	\$0.01
	Tile/Pipe	0.03	\$0.08	0.02	\$0.08	-	-	-	-	-	-
<b>Clay Products Total</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>0.93</b>	<b>\$2.60</b>	<b>0.91</b>	<b>\$2.55</b>
Limestone products	Agriculture	0.52	\$14.14	0.65	\$17.46	0.62	\$16.25	0.61	\$15.33	0.83	\$22.83
	Cement	0.03	\$0.57	0.08	\$1.70	0.04	\$0.89	0.06	\$1.03	0.07	\$1.25
	Lime	0.15	\$2.43	0.08	\$1.57	0.07	\$1.28	0.09	\$1.63	0.20	\$3.30
<b>Limestone Products Total</b>		<b>0.69</b>	<b>\$17.15</b>	<b>0.80</b>	<b>\$20.73</b>	<b>0.73</b>	<b>\$18.42</b>	<b>0.76</b>	<b>\$17.99</b>	<b>1.10</b>	<b>\$27.38</b>
Miscellaneous	Dimension Stone	0.07	\$1.00	0.01	\$0.25	0.000	\$0.12	0.01	\$0.29	0.23	\$0.42
	Soil	0.03	\$0.42	0.05	\$0.60	0.05	\$0.59	0.03	\$0.11	0.15	\$1.06
	Unspecified	3.60	\$44.39	5.31	\$61.58	2.88	\$31.56	4.66	\$67.79	7.20	\$106.73
<b>Miscellaneous Total</b>		<b>3.71</b>	<b>\$45.80</b>	<b>5.36</b>	<b>\$62.43</b>	<b>2.92</b>	<b>\$32.27</b>	<b>4.70</b>	<b>\$68.19</b>	<b>7.58</b>	<b>\$108.21</b>
Multi-size products	Fill	3.33	\$29.96	3.92	\$38.97	3.79	\$37.95	4.85	\$46.11	3.82	\$40.00
	Road Base	6.48	\$86.44	6.09	\$104.25	7.62	\$122.04	5.48	\$91.01	4.24	\$77.51
	Road Sub-Base	10.56	\$126.65	11.97	\$144.31	12.91	\$159.15	13.14	\$176.30	11.06	\$149.70
<b>Multi-size Products Total</b>		<b>20.37</b>	<b>\$243.05</b>	<b>21.98</b>	<b>\$287.53</b>	<b>24.31</b>	<b>\$319.14</b>	<b>23.46</b>	<b>\$313.43</b>	<b>19.13</b>	<b>\$267.21</b>
Sand products	Concrete Sand	8.94	\$124.40	7.20	\$132.49	9.25	\$151.73	8.76	\$151.07	9.62	\$138.59
	Fine Sand	1.70	\$16.95	2.50	\$39.67	1.61	\$19.33	3.01	\$43.49	1.88	\$27.10
	Foundry Sand	0.74	\$17.22	0.003	\$0.04	0.86	\$19.11	0.002	\$0.04	0.10	\$6.95
	Industrial Filters	0.03	\$0.31	0.02	\$0.12	0.02	\$0.20	-	-	0.04	\$0.81
<b>Sand Products Total</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>11.77</b>	<b>\$194.59</b>	<b>11.63</b>	<b>\$173.45</b>
Single-size products	Aggregate	20.70	\$385.08	22.27	\$441.86	21.36	\$427.51	22.90	\$467.94	23.21	\$450.20
	Armour	0.10	\$1.64	0.07	\$1.30	0.92	\$30.90	0.06	\$1.75	0.11	\$1.38
<b>Single size Products Total</b>		<b>20.80</b>	<b>\$386.72</b>	<b>22.33</b>	<b>\$443.15</b>	<b>22.28</b>	<b>\$458.41</b>	<b>22.97</b>	<b>\$469.69</b>	<b>23.32</b>	<b>\$451.58</b>
<b>Financial Year Total</b>		<b>58.08</b>	<b>\$854.81</b>	<b>61.21</b>	<b>\$989.30</b>	<b>62.92</b>	<b>\$1,021.38</b>	<b>64.59</b>	<b>\$1,066.48</b>	<b>63.68</b>	<b>\$1,030.39</b>

Note: Some historical data has been adjusted to accommodate amendments to annual returns by tenement holders and annual returns received after the publication of the previous year's report

**Table 2.1.3 Extractive industries production and value of sales by rock type five financial years**

Rock Group	Rock Type	FY 2016-17		FY 2017-18		FY 2018-19		FY 2019-20		FY 2020-21	
		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 New	16.92	\$259.41	20.21	\$318.29	21.61	\$351.07	21.53	\$364.19	22.68	\$377.70
	Basalt Old	3.87	\$74.58	3.12	\$63.72	3.85	\$81.97	4.38	\$80.31	2.86	\$60.21
	Dolerite	-	-	0.02	\$0.23	0.001	\$0.01	-	-	0.35	\$6.68
	Gneiss	0.03	\$0.001	0.01	\$0.01	0.01	\$0.001	0.08	\$1.92	-	-
	Granite	5.92	\$104.98	5.37	\$123.00	5.35	\$117.65	7.06	\$138.79	7.32	\$137.48
	Hornfels	5.01	\$73.10	5.23	\$85.85	5.22	\$86.87	5.27	\$89.56	4.47	\$81.38
	Quartzite	0.07	\$0.54	0.03	\$0.64	0.03	\$0.75	0.01	\$0.60	0.02	\$0.58
	Rhyodacite	1.80	\$38.03	1.79	\$43.64	1.52	\$33.52	1.54	\$35.53	1.73	\$39.99
	Schist	0.22	\$4.04	0.27	\$5.86	0.48	\$9.31	0.43	\$8.32	-	-
	Slate	0.03	\$0.98	0.04	\$1.25	0.04	\$1.17	0.04	\$1.36	0.19	\$0.02
Trachyte	0.03	\$0.54	0.04	\$0.80	0.03	\$0.70	0.03	\$0.51	0.02	\$0.54	
<b>Hard Rock Total</b>		<b>33.89</b>	<b>\$556.19</b>	<b>36.14</b>	<b>\$643.28</b>	<b>38.14</b>	<b>\$683.02</b>	<b>40.38</b>	<b>\$721.09</b>	<b>39.65</b>	<b>\$704.58</b>
Soft Rock	Clay and Clay Shale	1.37	\$3.54	1.48	\$3.90	1.20	\$3.49	1.47	\$5.33	1.30	\$3.28
	Limestone	1.78	\$25.58	1.80	\$28.62	1.99	\$29.08	1.96	\$28.64	2.16	\$36.01
	Sand and Gravel	16.65	\$217.16	16.92	\$253.93	16.70	\$248.96	15.74	\$251.30	16.14	\$235.86
	Scoria	0.69	\$11.41	1.15	\$18.07	0.76	\$12.97	0.94	\$15.39	1.10	\$18.63
	Sedimentary*	2.95	\$37.09	3.09	\$36.13	3.76	\$39.75	3.48	\$39.22	3.03	\$29.19
	Soil	0.03	\$0.42	0.05	\$0.60	0.05	\$0.62	0.06	\$0.11	0.15	\$1.06
	Tuff	0.72	\$3.44	0.58	\$4.79	0.32	\$3.48	0.56	\$5.41	0.15	\$1.77
<b>Soft Rock Total</b>		<b>24.20</b>	<b>\$298.62</b>	<b>25.07</b>	<b>\$346.02</b>	<b>24.77</b>	<b>\$338.35</b>	<b>24.21</b>	<b>\$345.39</b>	<b>24.03</b>	<b>\$325.81</b>
<b>Financial Year Total</b>		<b>58.08</b>	<b>\$854.81</b>	<b>61.21</b>	<b>\$989.30</b>	<b>62.92</b>	<b>\$1,021.38</b>	<b>64.59</b>	<b>\$1,066.48</b>	<b>63.68</b>	<b>\$1,030.39</b>

Note: Some historical data has been adjusted to accommodate amendments to annual returns by tenement holders and annual returns received after the publication of the previous year's report

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

## 2.2 Work authorities

**Table 2.2.1 Work authorities granted**

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
<b>Work Authorities Granted</b>	18	15	10	13	11	4	3

## 2.3 Extractive work plans and administrative updates by notification

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

**Table 2.3.1 Extractive work plans and work plan variations submitted and approved**

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
<b>WP/WPV Submitted</b>	21	31	35	16	21	28	18
<b>WP/WPV Approved</b>	8	19	16	20	15	20	19

Statutory endorsement indicates that Earth Resources Regulation has assessed and endorsed the work plan or work plan variations as having met the requirements under the MRSDA.

**Table 2.3.2 Extractive work plans and work plan variations statutory endorsed**

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
<b>WP/WPV Endorsed</b>	*	23	14	12	12	21	13

\*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 2.3.3 Extractive administrative updates by notifications received and acknowledged**

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
<b>Received</b>	-	-	-	3	14	30	14
<b>Acknowledged</b>	-	-	-	2	14	17	10



## 3 Minerals

### 3.1 Mineral exploration and mining expenditure

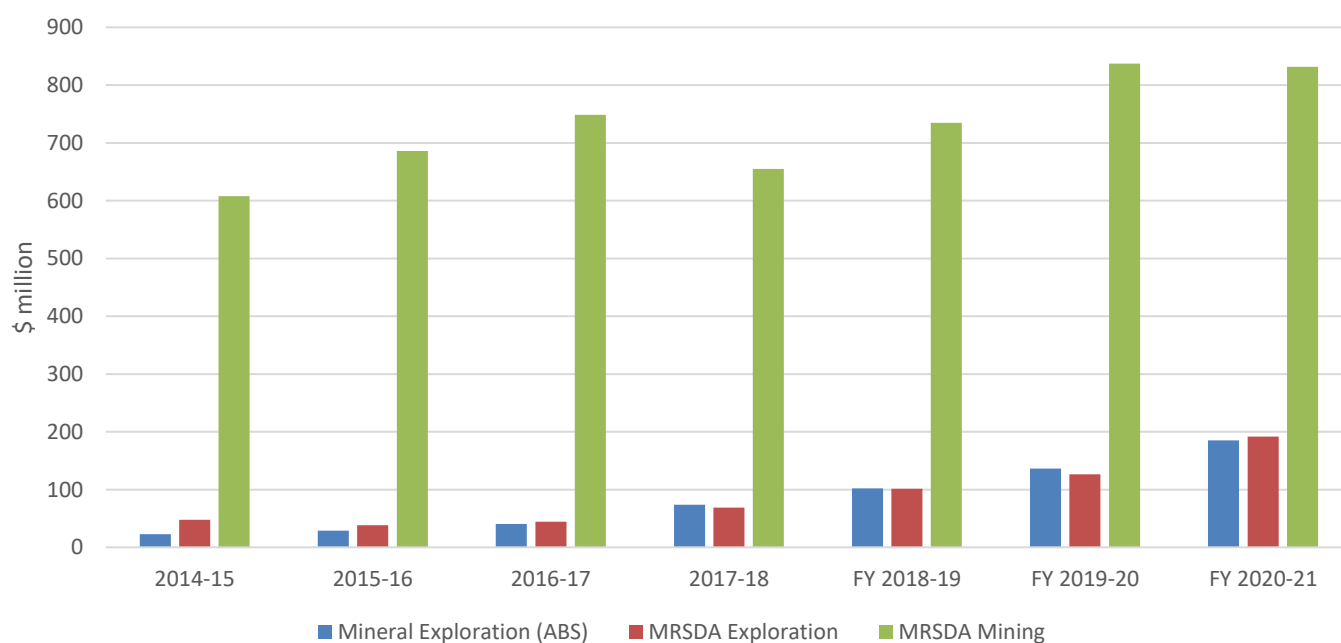
Table 3.1.1 Expenditure on mineral exploration and mining development (\$ million)

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
<b>Mineral Exploration (ABS)<sup>1</sup></b>	\$22.9	\$28.9	\$40.7	\$73.7	\$102.3	\$136.5	\$184.9
<b>MRSDA Exploration<sup>2</sup></b>	\$47.5	\$38.5	\$44.3	\$69.0	\$101.2	\$126.4	\$191.5
<b>MRSDA Mining<sup>3</sup></b>	\$607.8	\$685.8	\$748.8	\$654.7	\$734.5	\$837.1	\$831.6

Source: Figures collated from annual activity reports required under the MRSDA and ABS

(<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. 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.

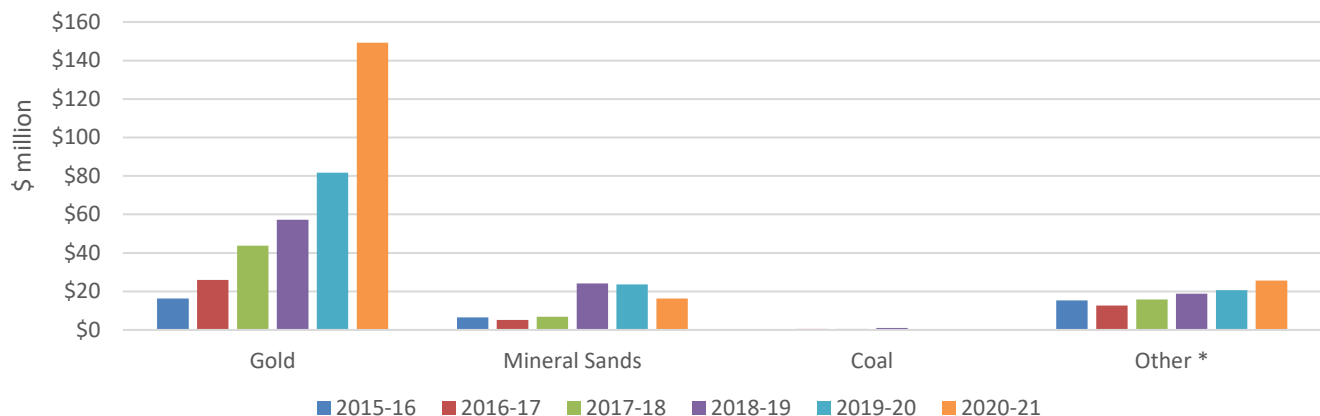
**Table 3.1.2 Mineral exploration expenditure by commodity and financial year (\$ million)**

Exploration expenditure is allocated to the primary nominated mineral commodity on the licence in accordance with the MRSDA.

Year	Gold	Mineral Sands	Coal	Other*	Total
2015-16	\$16.4	\$6.5	\$0.37	\$15.3	<b>\$38.5</b>
2016-17	\$25.9	\$5.1	\$0.46	\$12.7	<b>\$44.3</b>
2017-18	\$44.3	\$8.1	\$0.47	\$16.1	<b>\$69.0</b>
2018-19	\$57.3	\$24.2	\$1.0	\$18.8	<b>\$101.2</b>
2019-20	\$81.7	\$23.7	\$0.28	\$20.7	<b>\$126.4</b>
2020-21	\$149.3	\$16.4	\$0.16	\$25.6	<b>\$191.5</b>

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

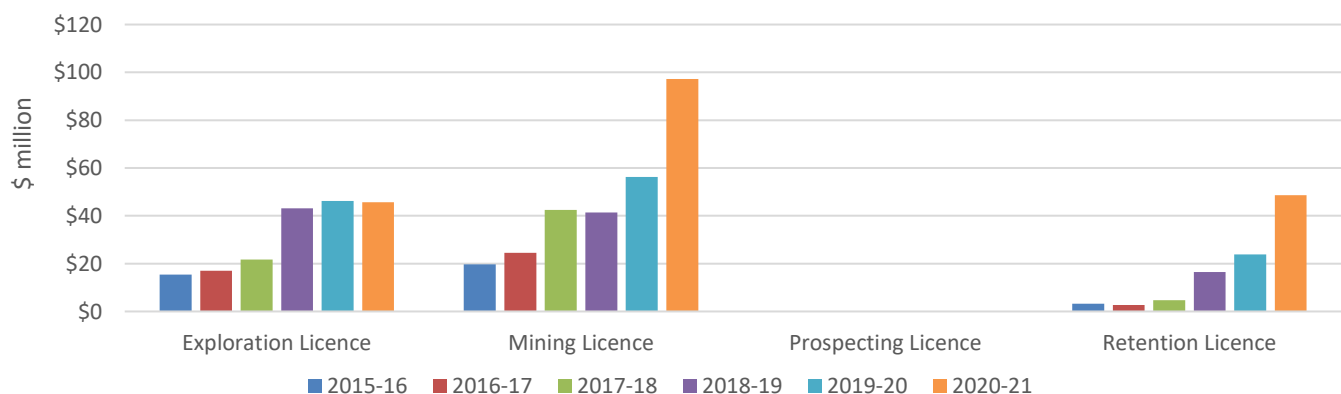
**Figure 3.1.2 Mineral exploration expenditure by commodity and financial year (\$ million)**



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

Year	Exploration Licence	Mining Licence	Prospecting Licence	Retention Licence	Total
2015-16	\$15.4	\$19.8	\$0.1	\$3.3	<b>\$38.5</b>
2016-17	\$17.0	\$24.5	\$0.1	\$2.7	<b>\$44.3</b>
2017-18	\$21.8	\$42.4	\$0.1	\$4.7	<b>\$69.0</b>
2018-19	\$43.1	\$41.4	\$0.1	\$16.6	<b>\$101.2</b>
2019-20	\$46.2	\$56.2	\$0.1	\$23.9	<b>\$126.4</b>
2020-21	\$45.6	\$97.2	\$0.1	\$48.6	<b>\$191.5</b>

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



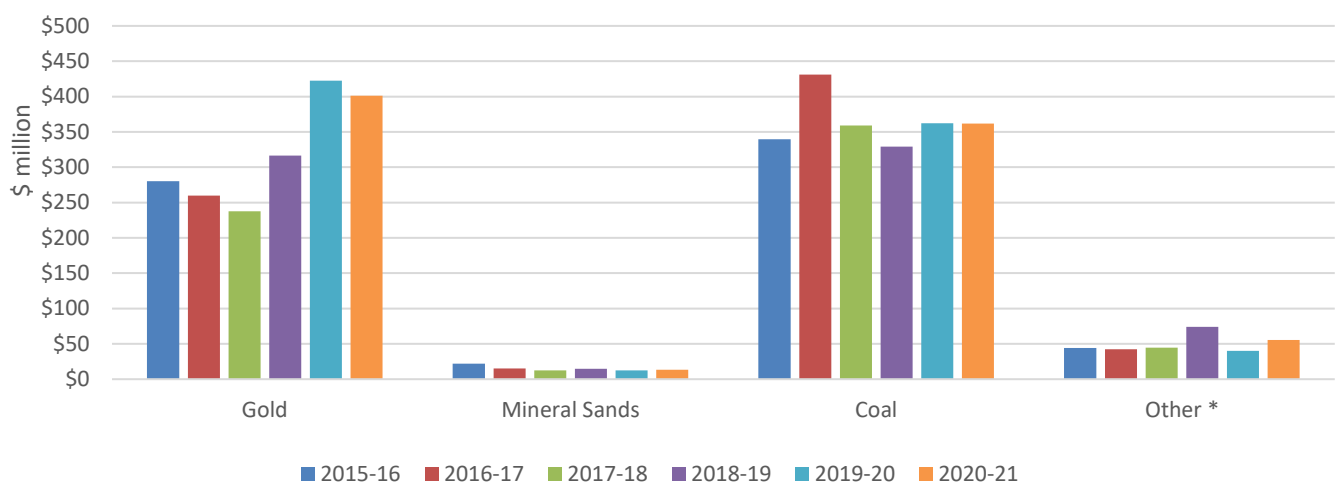
**Table 3.1.4 Mining expenditure by commodity and financial year (\$ million)**

Mining expenditure is allocated to the primary nominated mineral commodity on the licence in accordance with the MRSDA.

Year	Gold	Mineral Sands	Coal	Other*	Total
<b>2015-16</b>	\$280.2	\$21.8	\$339.4	\$44.4	<b>\$685.8</b>
<b>2016-17</b>	\$259.9	\$15.2	\$431.2	\$42.5	<b>\$748.8</b>
<b>2017-18</b>	\$238.2	\$12.6	\$359.1	\$44.8	<b>\$654.7</b>
<b>2018-19</b>	\$316.4	\$14.6	\$329.3	\$74.2	<b>\$734.5</b>
<b>2019-20</b>	\$422.5	\$12.4	\$362.2	\$40.0	<b>\$837.1</b>
<b>2020-21</b>	\$401.2	\$13.2	\$361.9	\$55.3	<b>\$831.6</b>

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

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



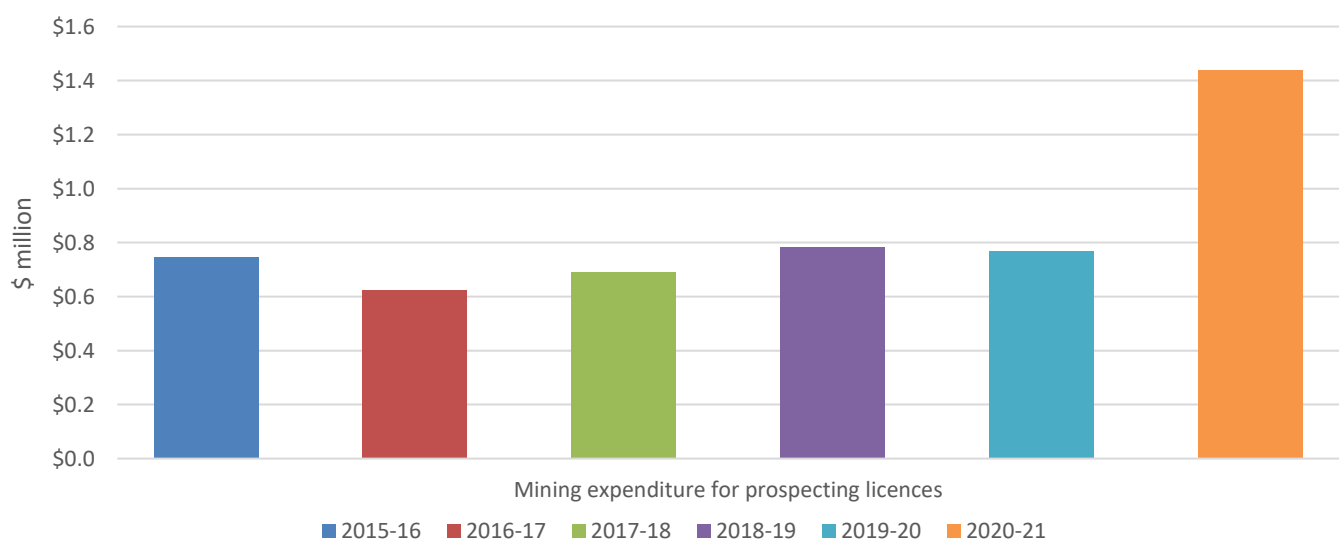
**Table 3.1.5 Mining expenditure by licence types and financial year (\$ million)**

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	\$0.7	\$654.7
2018-19	\$734.7	\$0.8	\$734.5
2019-20	\$836.4	\$0.8	\$837.1
2020-21	\$830.2	\$1.4	\$831.6

**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# (tonne)	Kaolin and Clay (tonne)
2014-15	200,872	3,684	77,162	85,983	383,369	40,232	60,957	520,526	152,047
2015-16	256,697	3,769	52,026	90,318	57,763	30,730	59,757	504,244	202,229
2016-17	312,835	5,318	45,597	73,812	44,944	0	56,095	453,067	192,150
2017-18	364,294	2,570	27,515	48,381	24,390	0	45,062	637,018	171,932
2018-19	567,501	2,016	0	0	0	0	42,256	474,084	114,050
2019-20	790,054	3,141	0	0	0	0	40,372	533,066	154,812
2020-21	722,239	3,551	0	0	0	0	42,263	662,100	172,983

\*Gold reported in troy ounces; coal in thousand tonnes; and the remainder in tonnes.

#Gypsum changed from cubic meter unit of measure to tonnes.

Note: Some historical data has been adjusted to accommodate amendments to annual returns by tenement holders and annual returns received after the publication of the previous year's report

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

Year	Gold	Antimony	Mineral Sands <sup>1</sup>	Industrial Minerals <sup>2</sup>	Coal <sup>3</sup>	Others <sup>4</sup>	Total
2014-15	\$284.7	\$37.8	\$185.1	\$9.8	N/A	\$0.1	\$517.5
2015-16	\$412.5	\$30.1	\$175.9	\$10.0	N/A	\$0.5	\$629
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	\$1,843.0	\$24.8	\$0	\$10.3	N/A	\$0.3	\$1,878.4
2020-21	\$1,781.5	\$36.7	\$0	\$13.3*	N/A	\$0.6	\$1,832.1

<sup>1</sup> Mineral Sands (zircon, rutile, ilmenite).

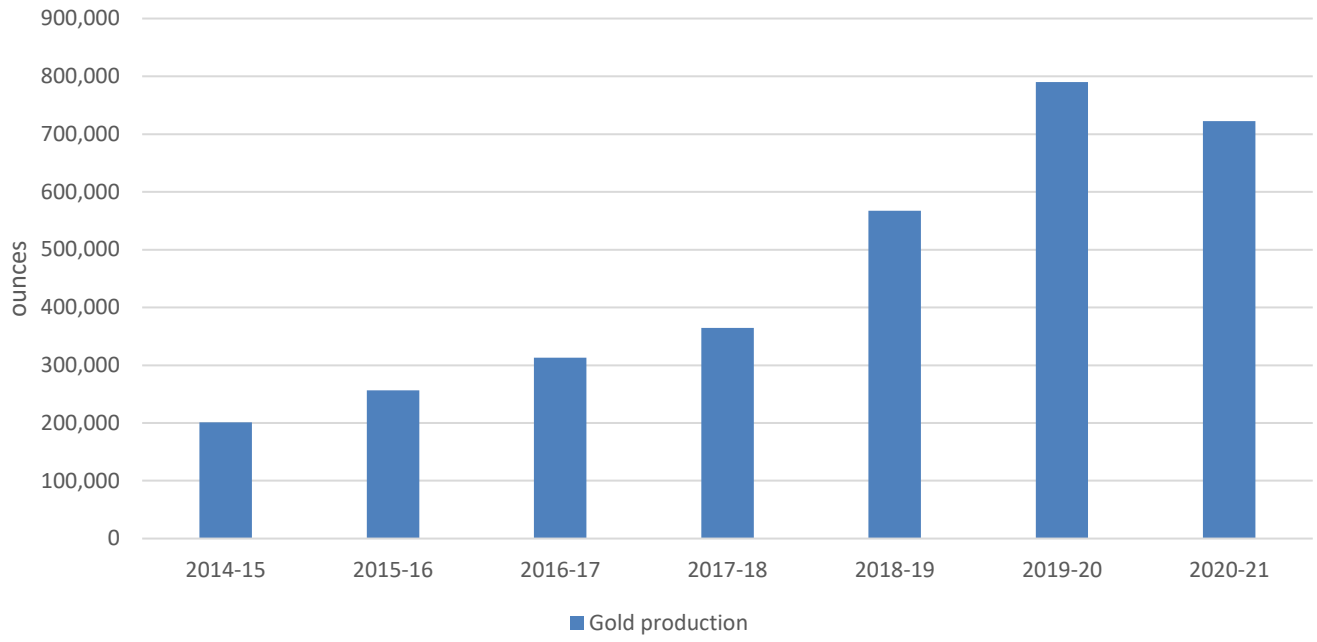
<sup>2</sup> Industrial Minerals (feldspar, gypsum, kaolin and fine clay). \* Correction to \$13.3 million from \$10.3million

<sup>3</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>4</sup> Others (includes silver, peat and quartz).

Note: Some historical data has been adjusted to accommodate amendments to annual returns by tenement holders and annual returns received since last publication of this report

Figure 3.2.1 Gold production (ounces) by financial year



### 3.3 Mineral tenements

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

Licence Type	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Exploration Licence	247	211	180	200	212	217	291
Mining Licence	171	170	162	156	145	141	139
Prospecting Licence	41	51	54	59	55	60	66
Retention Licence	8	11	15	20	21	27	30
<b>Total</b>	<b>467</b>	<b>443</b>	<b>411</b>	<b>435</b>	<b>433</b>	<b>445</b>	<b>526</b>

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

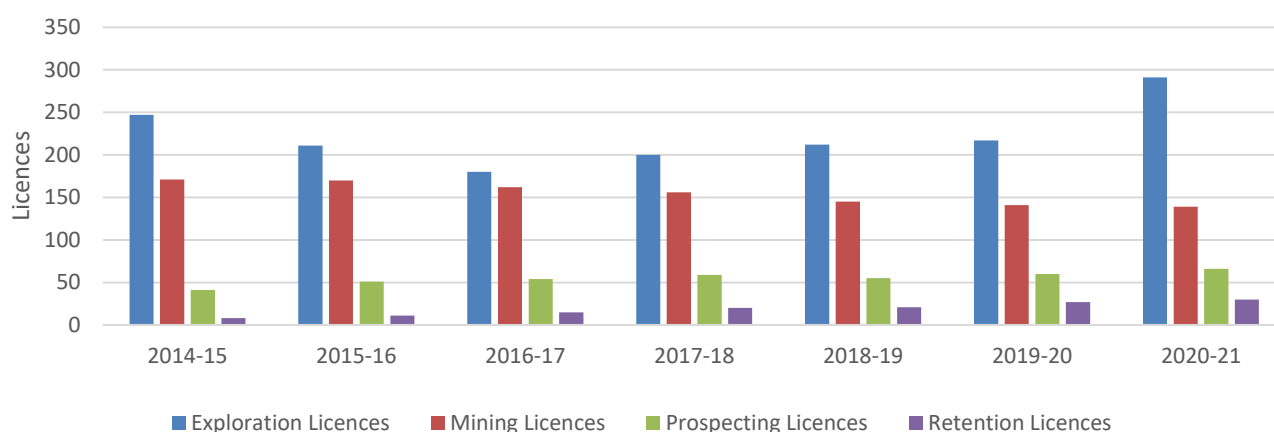
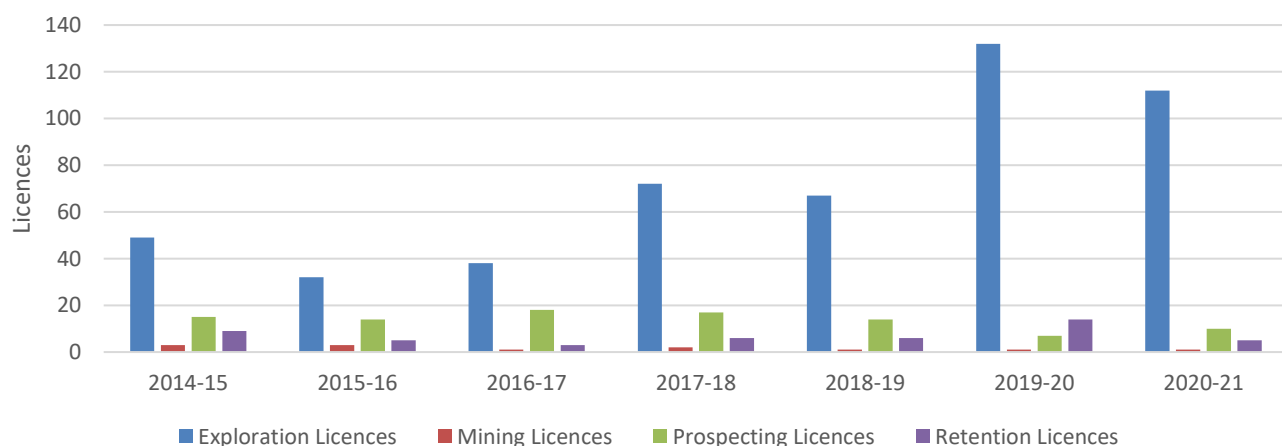


Table 3.3.2 Number of licence applications submitted by financial year

Licence Type	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Exploration Licence	49	32	38	72	67	133	112
Mining Licence	3	3	1	2	1	1	1
Prospecting Licence	15	14	18	17	14	7	10
Retention Licence	9	5	3	6	6	14	5
<b>Total</b>	<b>76</b>	<b>54</b>	<b>60</b>	<b>97</b>	<b>88</b>	<b>155</b>	<b>128</b>

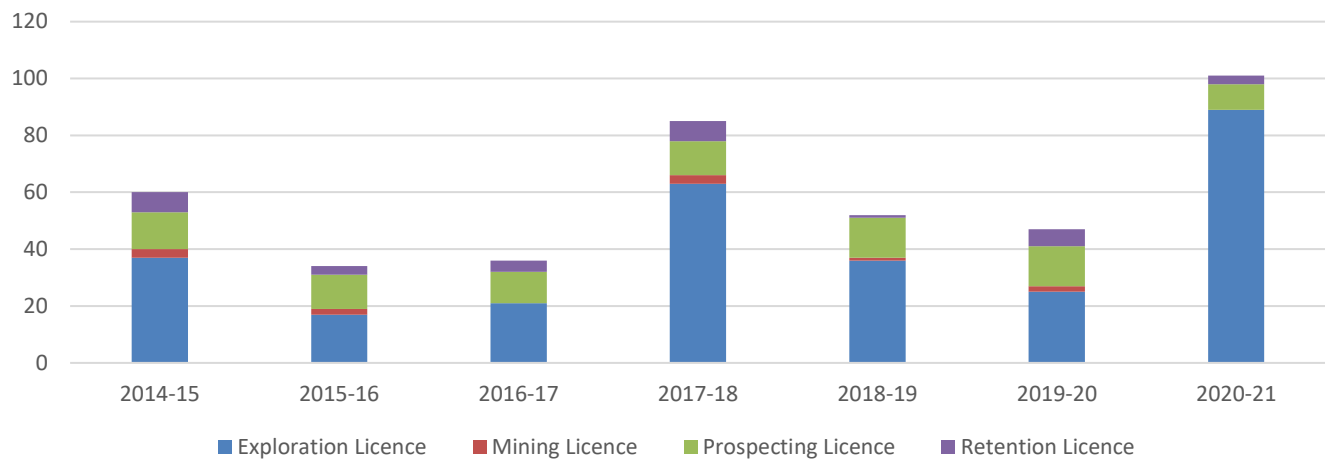
Figure 3.3.2 Number of licence applications submitted by financial year



**Table 3.3.3 Licence applications granted by financial year**

Licence Type	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Exploration Licence	37	17	21	63	36	25	89
Mining Licence	3	2	0	3	1	2	0
Prospecting Licence	13	12	11	12	14	14	9
Retention Licence	7	3	4	7	1	6	3
<b>Total</b>	<b>60</b>	<b>34</b>	<b>36</b>	<b>85</b>	<b>52</b>	<b>47</b>	<b>101</b>

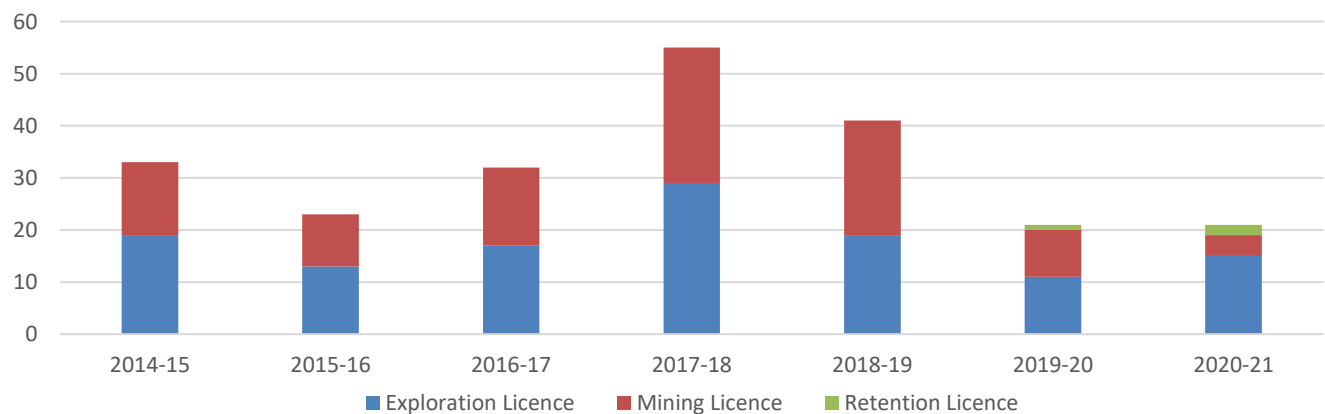
**Figure 3.3.3 Number of licence applications granted by financial year**



**Table 3.3.4 Licences renewed by financial year**

Licence Type	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Exploration Licence	19	13	17	29	19	11	15
Mining Licence	14	10	15	26	22	9	4
Retention Licence	-	-	-	-	-	1	2
<b>Total</b>	<b>33</b>	<b>23</b>	<b>32</b>	<b>55</b>	<b>41</b>	<b>21</b>	<b>21</b>

**Figure 3.3.4 Number of licence applications renewed by financial year**





## 3.4 Mineral work plans and administrative updates by notification

A work plan (WP) is the primary document describing the permitted activities to be undertaken on a licence. A work plan variation (WPV) 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 approved**

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
<b>WP Submitted</b>	25	20	20	30	22	22	12
<b>WP Approved</b>	30	12	4	15	20	14	7

Statutory endorsement indicates that Earth Resources Regulation has 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**

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
<b>WP/WPV Endorsed</b>	*	9	1	1	5	4	3

\*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**

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
<b>Received</b>	-	-	-	2	11	10	7
<b>Acknowledged</b>	-	-	-	2	8	9	7

## 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 was 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 by financial years**

Year	Condensate (Barrels)	Gas Production (MMscf <sup>**</sup> )	Gas Production (Petajoules <sup>^</sup> )	CO <sup>2</sup> Production (Tonnes)	Comments
2015-16	3.7	-	-	32,991	Ex wellhead figures
2016-17	201,972	19,598	21.26	34,937	Ex wellhead figures
2017-18	134,178	13,118	13.91	33,643	Ex wellhead figures
2018-19	146,186	14,523	15.40	32,293	Ex wellhead figures
2019-20	99,094	9,069	9.83	31,029	Ex wellhead figures
2020-21	122,569	7,534	8.17	27,149	Ex wellhead figures

<sup>\*\*</sup>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.)

<sup>^</sup> 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 by financial years**

Year	Condensate (Barrels)	Gas Storage (MMscf <sup>**</sup> )	Gas Storage (Petajoules <sup>^</sup> )	Gas Injection (MMscf)	Comments
2015-16	1,967	16,881	18.31	9,970	Storage
2016-17	587	9,668	10.49	13,952	Storage
2017-18	465	11,670	12.38	13,745	Storage
2018-19	1,220	13,100	13.89	12,514	Storage
2019-20	944	15,959	17.31	12,231	Storage
2020-21	283	16,144	17.51	10,201	Storage

<sup>\*\*</sup>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.)

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

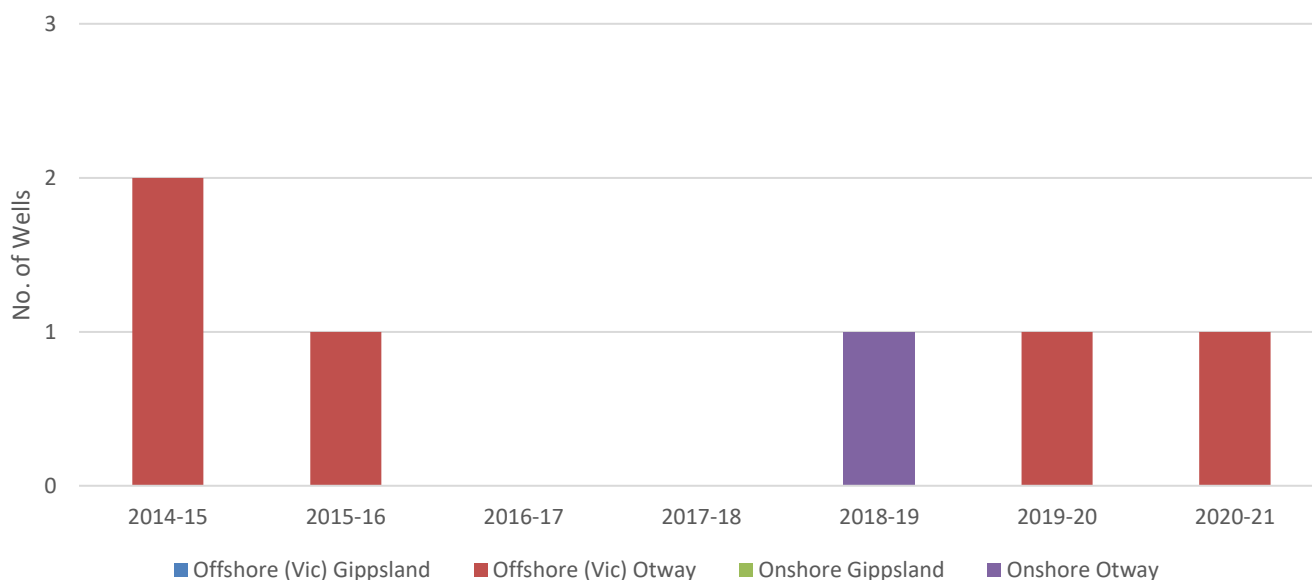
## 4.2 Drilling

### 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
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
2020-21	0	1	0	0	1
<b>Total</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>6</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 2021**

Onshore Petroleum Licences	No. of Licences
Onshore Petroleum Production Licence	12
Onshore Petroleum Exploration Permit	10
Onshore Petroleum Special Drilling Authorisation	2
Onshore Petroleum Retention Lease	1
<b>Total</b>	<b>25</b>

**Table 4.3.2 Overview of offshore (Victorian waters) petroleum tenements as at 30 June 2021**

Offshore Petroleum Licences	No. of Licences
Offshore Petroleum Exploration Permit	5
Offshore Petroleum Access Authority	1
Offshore Petroleum Retention Lease	1
Offshore Petroleum Production Licence	1
<b>Total</b>	<b>8</b>

**Table 4.3.3 Offshore pipeline licences as at 30 June 2021**

Offshore pipelines	No. of Licences
Offshore Pipeline Licence	14

**Table 4.3.4 Overview of geothermal exploration permits as at 30 June 2021**

Geothermal energy	No. of Licences
Geothermal Exploration Permit	1

**Table 4.3.5 Offshore greenhouse gas assessment permits as at 30 June 2021**

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

# 5 Revenue

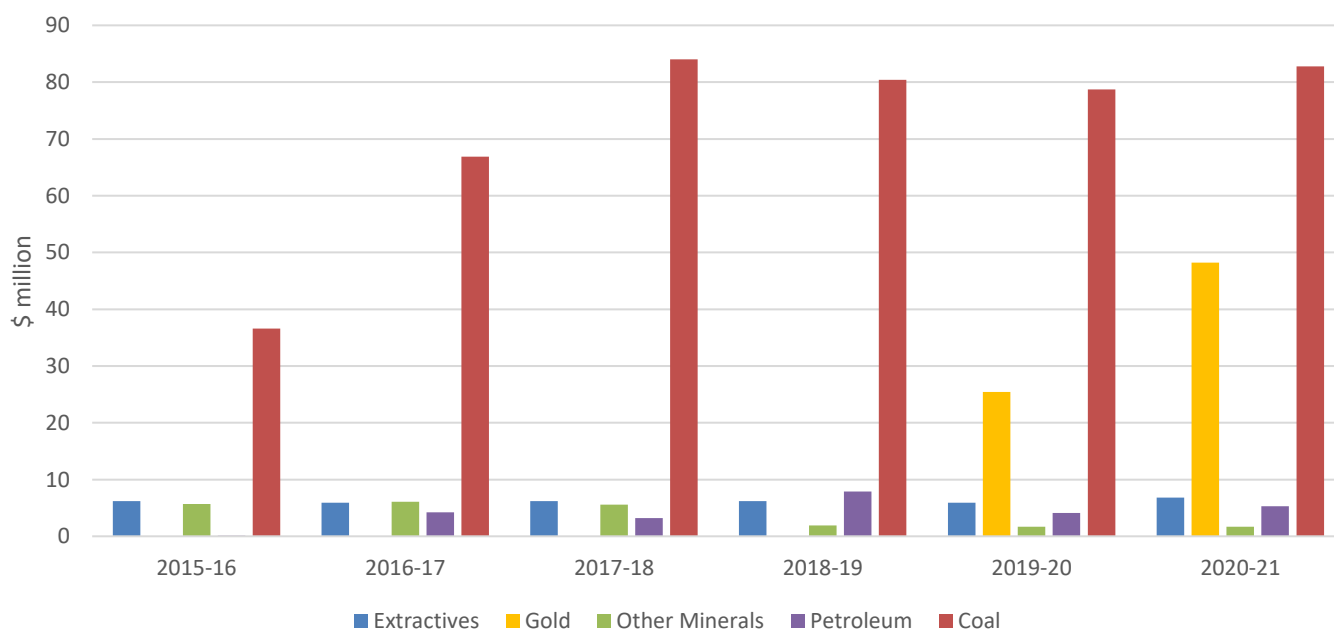
## 5.1 Royalties payable

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

Year	Extractives (\$ 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	\$5.9	\$25.4*	\$1.7	\$4.1	\$78.7	\$115.8
2020-21	\$6.8	\$48.2	\$1.7	\$5.3	\$82.8	\$144.8

\*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)

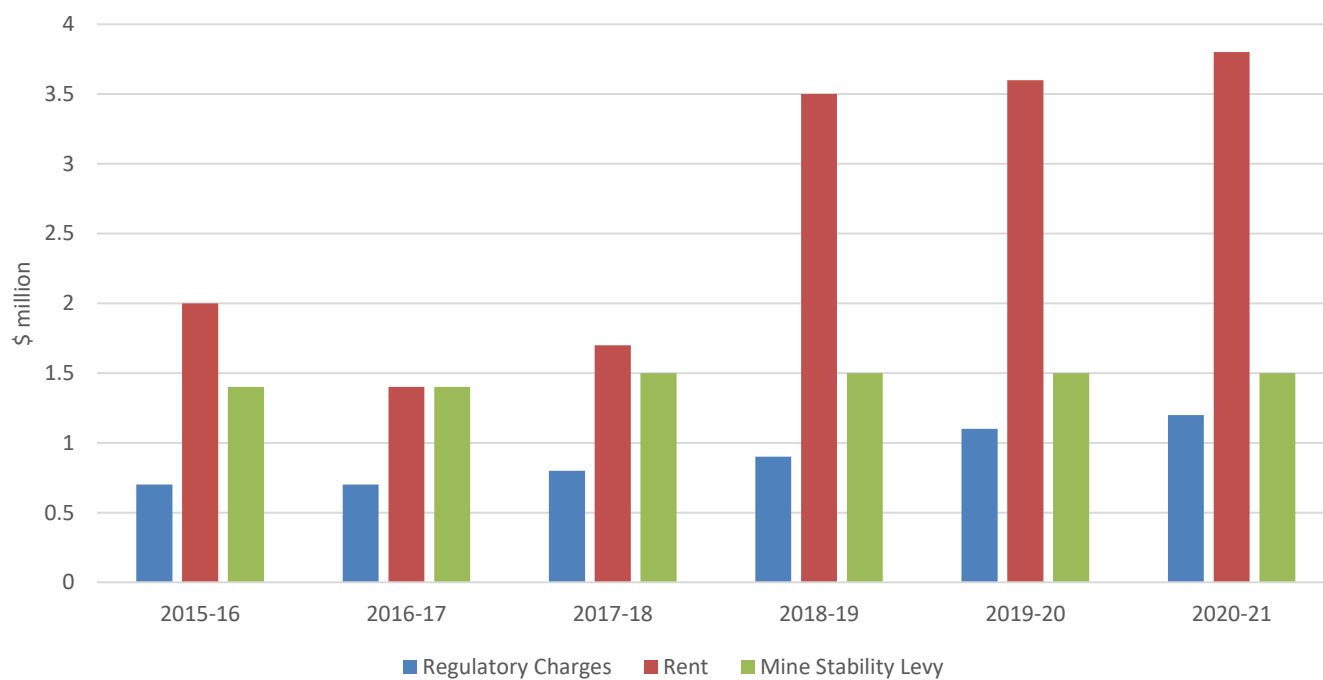


## 5.2 Regulatory fees

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
2020-21	\$1.2	\$3.8	\$1.5	\$6.5

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



## 6 Rehabilitation bonds

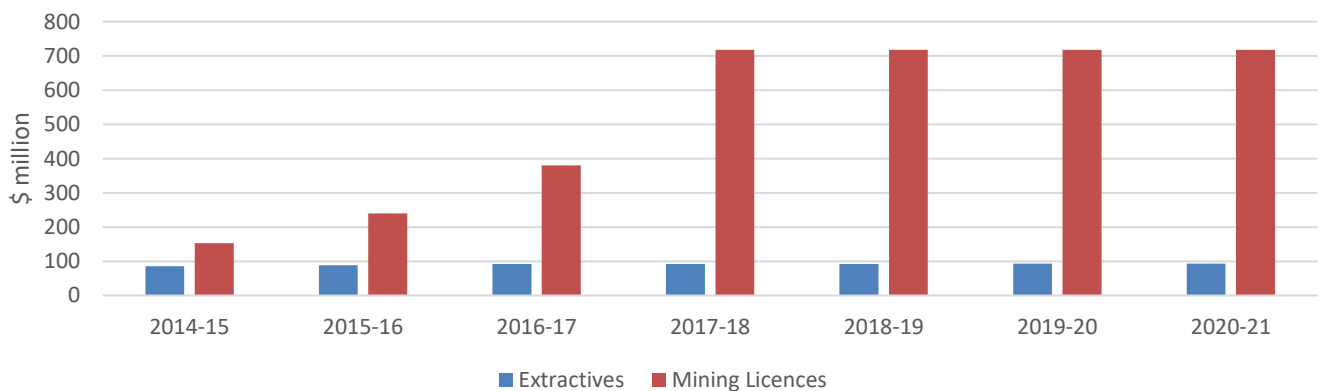
### 6.1 Bonds held

The total monetary value of the rehabilitation bonds held by the State under the MRSDA in 2020-21 was \$814.4 million as at 30 June 2021. Up to date bonds held by the State can be found on the Earth Resources Regulation website: <https://earthresources.vic.gov.au/community-and-land-use/rehabilitation>

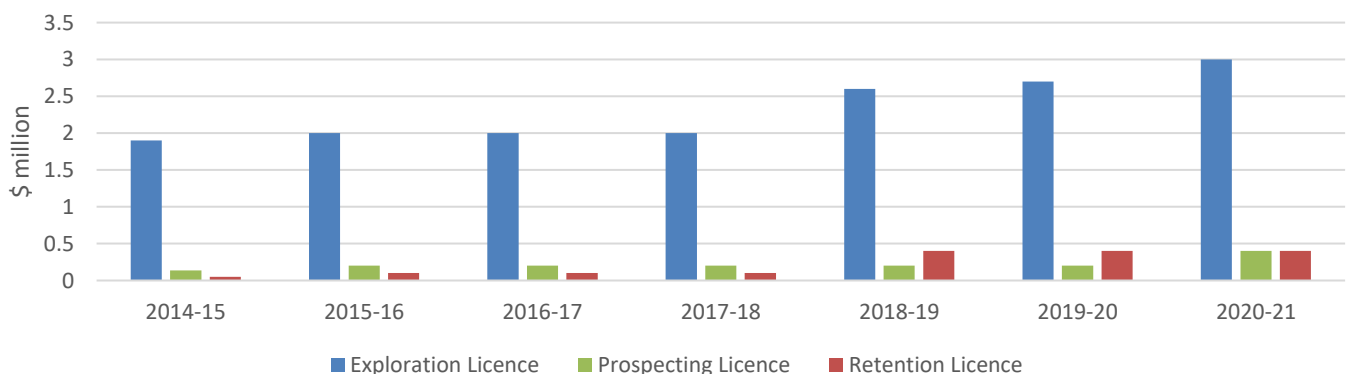
**Table 6.1.1 Value of rehabilitation bonds by authority type by financial year (\$ million)**

Year	Extractives (\$ million)	Mining Licence (\$ million)	Exploration Licence (\$ million)	Prospecting Licence (\$ million)	Retention Licence (\$ million)	Total (\$ million)
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
2020-21	\$92.9	\$717.8	\$3.0	\$0.4	\$0.4	\$814.4

**Figure 6.1.1 Extractives and mining rehabilitation bonds held at the end of financial year (\$ million)**



**Figure 6.1.2 Exploration, prospecting and retention licence rehabilitation bonds held at the end of financial year (\$ million)**

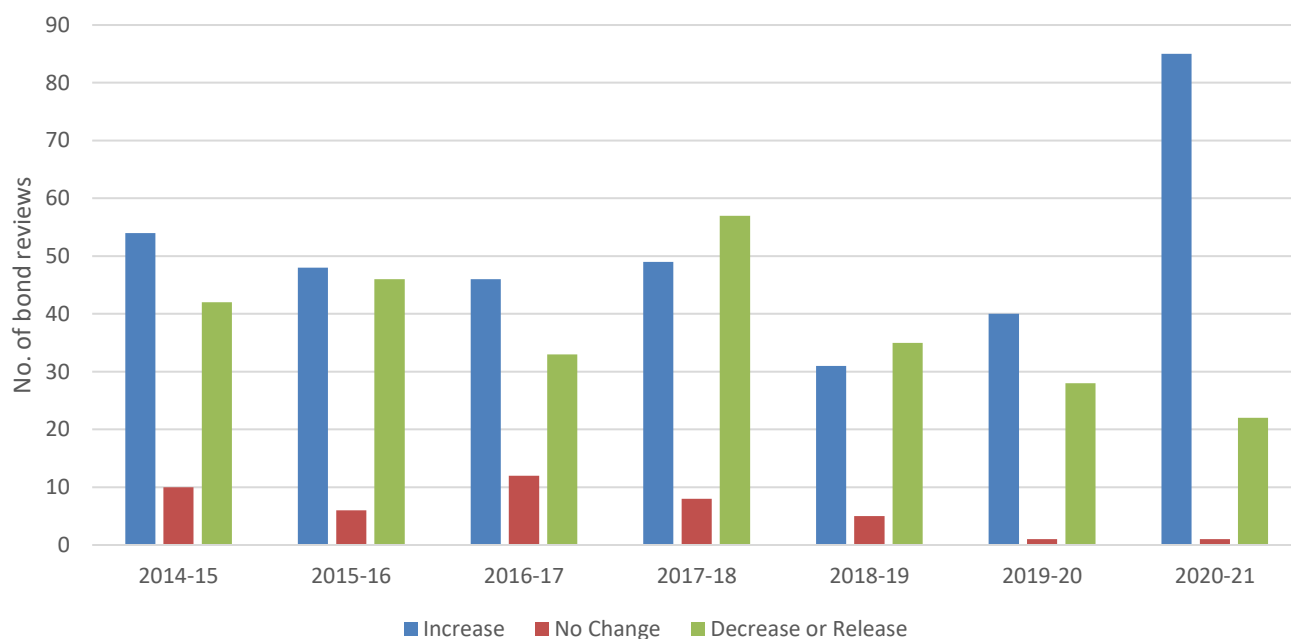


## 6.2 Bond reviews

Table 6.2.1 Rehabilitation bond reviews by financial year

Year	Result of review – increase or initial	Result of review - no change	Result of review – decrease or release	Number of bonds reviewed
2014-15	54	10	42	106
2015-16	48	6	46	100
2016-17	46	12	33	91
2017-18	49	8	57	114
2018-19	31	5	35	71
2019-20	40	1	28	69
2020-21	85	1	22	108

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.

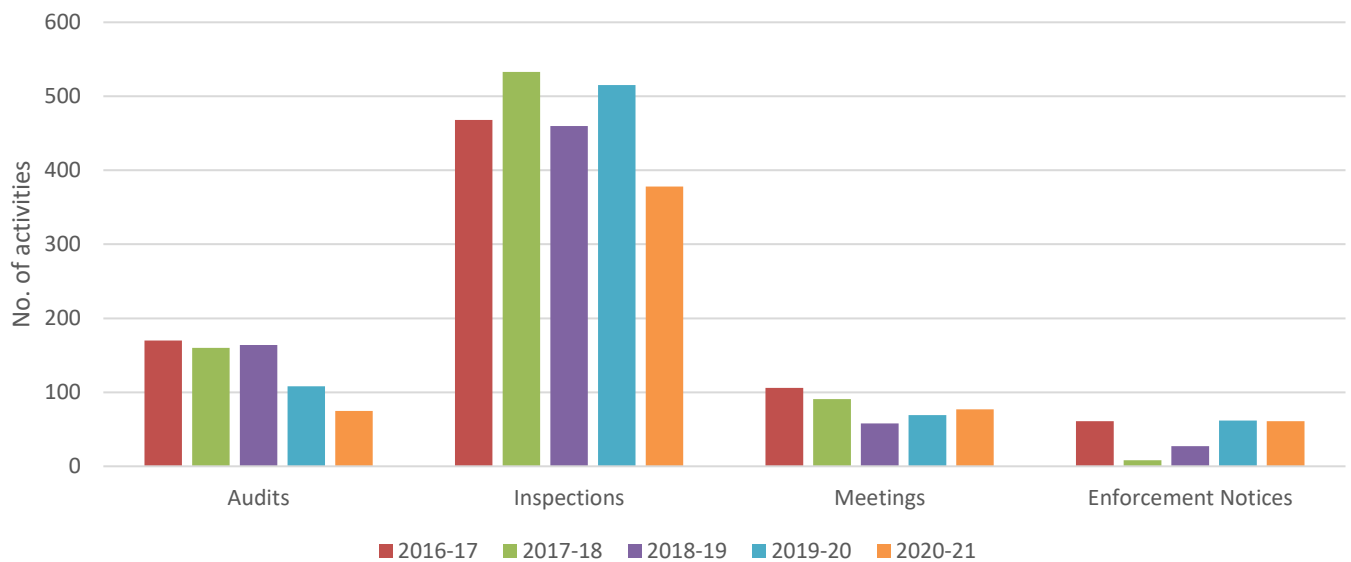
**Table 7.1 Compliance activities by financial year**

Activities	Audits	Inspections <sup>^</sup>	Meetings	Enforcement Notices <sup>*</sup>	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>
<b>2020-21</b>	75	378	77	61	<b>591</b>

\*MRSDA s110 and s110a Notices issued.

<sup>^</sup>Inspections include site closures and site visits.

**Figure 7.1 Compliance activities by financial year**

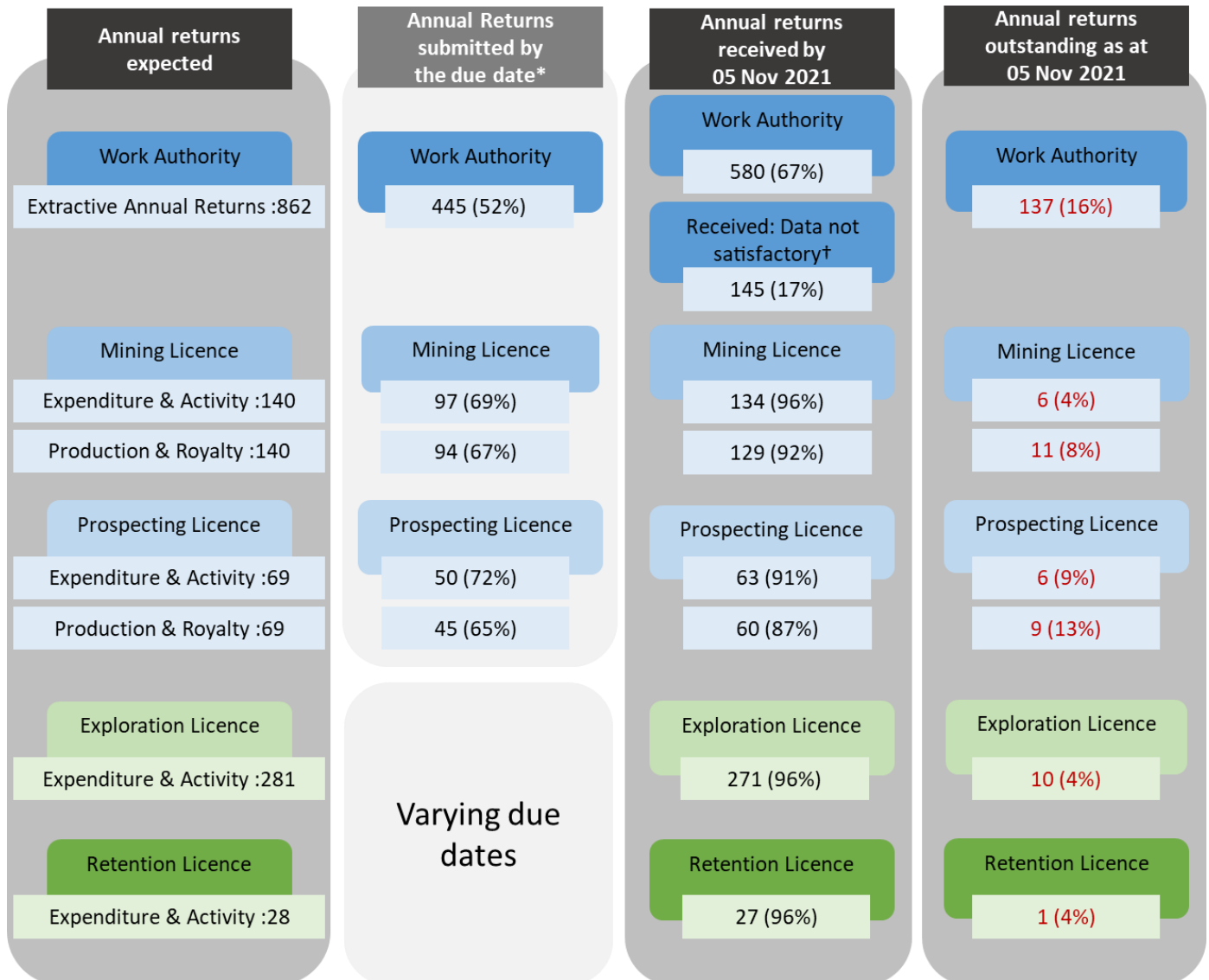


## 7.1 Industry annual returns submission rate

Annual report requirements:

All tenement holders are obliged to submit an annual report on their activities by the due date even if no work has been undertaken in the financial year. The information is used to monitor industry activities, specify regulatory fees and royalties, and inform management of Victoria's earth resources sector by understanding the state of the industry and aiding further investment and jobs.

**Table 7.1.1 MRSDA tenements FY2020-21 annual report submission rate as at 05 Nov 2021**



\*Due date: Work authority 31 July 2021; mining and prospecting 28 July 2021.

\*Annual returns submitted includes regulator approved extensions.

†Annual returns received, data not satisfactory: Some components of the annual return were not satisfactory and therefore awaiting more details to be provided by tenement holders. The data from these records are included in this report.

Authorised by the Victorian Government  
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