

EARTH RESOURCES REGULATION

2013–2014 STATISTICAL REPORT



Executive Summary

In the 2013/14 financial year, activity and investment in the earth resources industries was generally subdued, continuing the trend observed in the previous financial year. The petroleum and geothermal sector again witnessed limited activity, and mineral exploration expenditure continued to fall. Brown coal production remained relatively stable, despite the production interruptions.

In the petroleum sector, production remained limited to production and injection at the Iona gas storage facility and carbon dioxide production at Boggy Creek, both of which are located in the onshore Otway Basin area. No hydrocarbon discoveries were reported.

Investment in geothermal energy resource exploration was low, totalling \$908,000, thus below the exploration expenditure reported in 2012/13 (\$1.1 million). No wells were drilled during the year, as a result of the moratorium on fracking and onshore natural gas exploration. There was no geothermal energy production.

Petroleum and geothermal licensing activity was minimal, with just two onshore petroleum exploration permits granted in the course of 2013/14, though three applications were received (two for offshore petroleum exploration permits and one for an offshore petroleum production licence).

Minerals licensing activity in 2013/14 remained somewhat subdued compared to previous years, with a continued fall in the total number of applications received, though the number of grants was up in relation to 2012/13, and the first retention licence grant was issued in 2013/14. The total number of licences at the end of June 2014, however, was down by 43 to 494, on account of expirations and surrenders.

In the minerals sector, the general production trend over the past three to five years has reflected fluctuating demand. Production of brown coal in the Latrobe Valley fell to its lowest level since 1995/96, partly due to changing energy demand and sources. Gold production also fell, though only slightly, with volumes down to 225,148 ounces (from 225,776 in 2012/13). Gold production values, however, experienced a sharper decline, falling to 303.4 million from 333.1 million. Production of heavy minerals sands, on the other hand, recovered significantly, reflecting higher overseas demand.

Mineral exploration and mining expenditures both fell, reflecting the subdued industry conditions. The largest falls in exploration expenditure were in the gold and brown coal sectors, with increases in the base metals and antimony.

Volume sales of extractive industry (quarry) products in 2013/14 fell by around 7.1 million tonnes, or 18% on a year-on-year (y-o-y) basis, reflecting fluctuating domestic demand from the building and construction sector. Value sales experienced a smaller y-o-y decrease (falling by 9% to \$677 million).

In 2013/14, state revenue (rent, royalty and administrative charges) derived from the earth resources sector totalled \$50.1 million, down from \$57.2 million collected in 2012/13. The fall was primarily due to lower royalties resulting from the slowing down of the mining and extractive industry production, while petroleum royalties remained unchanged.

1. Introduction

The Statistical Report is a compilation of data as reported by Victoria's earth resources industry. The report includes data on production, exploration, expenditure, licensing, revenues and regulatory actions.

Victoria's earth resource industry production includes:

- gas and carbon dioxide – from onshore;
- brown coal – used almost exclusively for power generation;
- gold;
- antimony;
- industrial minerals – including gypsum, feldspar, rutile, zircon, ilmenite and kaolin; and
- rock, sand and clay – used mainly for building and road construction.

Earth Resources Regulation Branch in the Department of Economic Development, Jobs, Transport and Resources (DEDJTR) - previously known as the Department of Primary Industries (DPI) and the Department of State Development, Business and Innovation (DSDBI) - is responsible for the Regulation of the minerals, extractives, petroleum, pipelines, geothermal and carbon storage industries in Victoria and offshore (Victorian) waters. The Branch provides a consistent and transparent tenement management regime, together with monitoring and enforcement that ensure these industries comply with their obligations and meet community expectations.

The responsibility for the petroleum, pipelines and carbon storage industries in offshore (Commonwealth) waters was transferred to the National Offshore Petroleum Title Administrator (NOPTA) on 1 January 2012, and these are no longer reported on in this publication. Historical information on petroleum industry activities and production in offshore (Commonwealth) waters is available in earlier editions of the Statistical Report or from the National Offshore Petroleum Titles Administrator (more information can be found at www.nopta.gov.au).

Earth Resources Regulation Branch administers the following Acts:

- *Mineral Resources (Sustainable Development) Act 1990* (MRSDA) (mineral exploration, mining and quarrying);
- *Offshore Petroleum and Greenhouse Gas Storage Act 2010* (OPGGSA) (petroleum exploration and development, greenhouse gas storage and pipelines in the Victorian offshore waters);
- *Petroleum Act 1998* (petroleum exploration and development onshore);
- *Pipelines Act 2005* (licensing and regulation of high pressure pipelines onshore);
- *Geothermal Energy Resources Act 2005* (geothermal energy exploration and development); and
- *Greenhouse Gas Geological Sequestration Act 2008* (greenhouse gas storage onshore).

2. Petroleum, Geothermal and Pipelines

2.1. Petroleum

Victoria's petroleum exploration and production is concentrated in the Otway and Gippsland Basins, with activities undertaken both onshore and in Victorian offshore waters.

Offshore activities concern waters effectively within three nautical miles of the coast, as covered by Victorian legislation. Waters greater than three nautical miles offshore from the coast are Commonwealth waters and are as such covered by Commonwealth legislation and therefore not included in this report.

2.1.1. Petroleum tenements

In 2013/14, two onshore exploration permits were granted. Two applications for an offshore exploration permit and one application for an offshore production licence were also received.

Table 2.1 Overview of petroleum tenements current as at 30 June 2014

	Petroleum Exploration Permits (PEPs)	Petroleum Retention Leases (PRLs)	Petroleum Production Licences (PPLs)
Onshore	11	3	13
Offshore (Vic)	1	2	0

Source: DEDJTR

Onshore

Table 2.2 Overview of onshore petroleum exploration permits (PEPs)

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
PEP Application Received	3	0	0	0	4	1	0	0
PEP Granted	2	1	0	0	1	0	2	2

Source: DEDJTR

Table 2.3 Overview of onshore petroleum retention licences (PRLs)

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
PRL Application Received	1	0	0	0	0	0	0	0
PRL Granted	2	1	0	0	0	0	0	0

Source: DEDJTR

No onshore petroleum production licences applications have been received or licences granted in the period between 2006/07 and 2013/14.

Offshore (State Waters)

No offshore petroleum production licences are current. One application for an offshore petroleum production licence and two applications for an offshore petroleum exploration permit were received in 2013/14.

Table 2.4 Overview of offshore petroleum exploration permits (VIC/P(V)s)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
VIC/P(V) Application Received	0	0	0	1	0	0	2
VIC/P(V) Granted	0	0	0	0	1	0	0

Source: DEDJTR

Table 2.5 Overview of offshore petroleum retention leases (VIC/RL(V)s)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
VIC/RL(V) Application Received	0	1	0	0	0	0	0
VIC/RL(V) Granted	0	1	0	0	0	0	0

Source: DEDJTR

Table 2.6 Overview of offshore petroleum production licences (VIC/L(V)s)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
VIC/L(V) Application Received	0	0	0	0	0	0	1
VIC/L(V) Granted	0	0	0	0	0	0	0

Source: DEDJTR

2.1.2. Petroleum exploration and development

The level of petroleum exploration activity was low. No drilling was performed in Victoria and seismic activity was limited.

Approximately \$6.7 million in expenditure was reported on onshore petroleum exploration permits and retention leases. Most of this expenditure was spent on the acquisition of the seismic surveys in the Otway Basin. The remaining expenditure was mostly accounted for by geological and geophysical studies, geophysical logging, flaring and administration.

Petroleum exploration activity in the offshore area was also limited.

Around \$1.036 million in expenditure was reported on offshore tenements. With no wells drilled or seismic surveys undertaken, most of this expenditure was represented by geological studies, seismic preparation, studies on licensing and permitting, studies on the subsurface, ongoing capital appraisal work and market studies.

Drilling

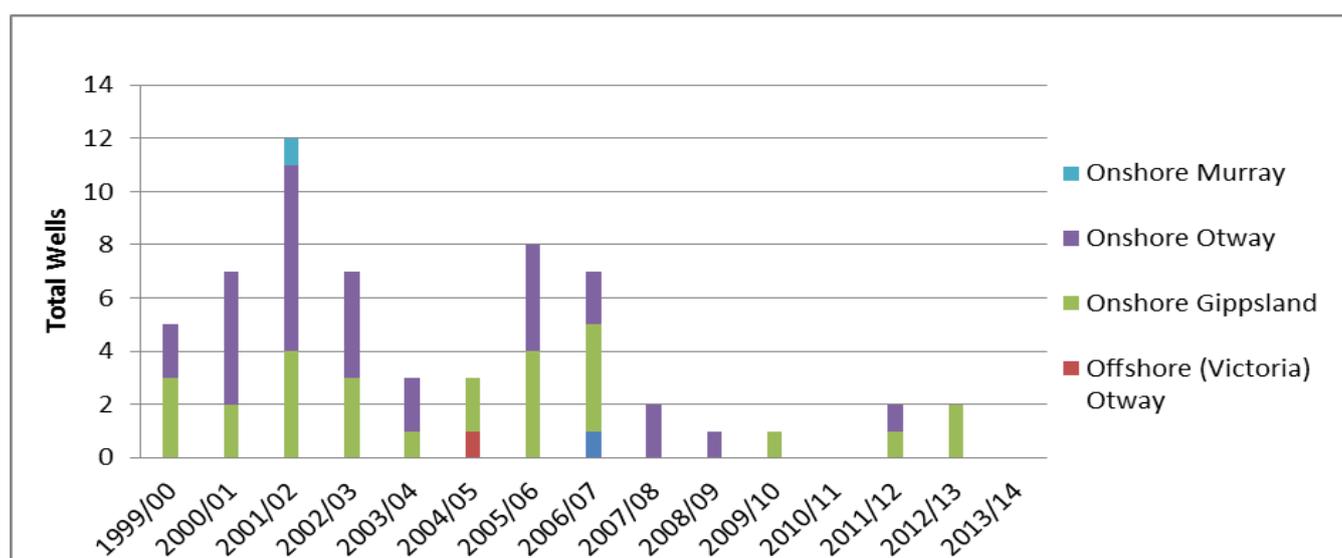
In the course of 2013/14, no onshore wells were drilled in Victoria as a result of the moratorium on onshore natural gas and hydraulic fracturing.

Table 2.7 Number of exploration wells drilled in Victoria over time

Year	Offshore (Victoria)		Onshore			Total wells
	Gippsland	Otway	Gippsland	Otway	Murray	
1999/00	0	0	3	2	0	5
2000/01	0	0	2	5	0	7
2001/02	0	0	4	7	1	12
2002/03	0	0	3	4	0	7
2003/04	0	0	1	2	0	3
2004/05	0	1	2	0	0	3
2005/06	0	0	4	4	0	8
2006/07	1	0	4	2	0	7
2007/08	0	0	0	2	0	2
2008/09	0	0	0	1	0	1
2009/10	0	0	1	0	0	1
2010/11	0	0	0	0	0	0
2011/12	0	0	1	1	0	2
2012/13	0	0	2	0	0	2
2013/14	0	0	0	0	0	0
Total	1	1	27	30	1	60

Source: DEDJTR

Graph 2.1 Number of exploration wells drilled over time



Source: DEDJTR

Geophysical Surveys

Three onshore 2D seismic surveys (two in Morgan, in the PEP150 and PEP151 area, and one in Ostrea, within the PEP168 area) were undertaken in the Otway Basin in 2013/14.

No other petroleum geophysical surveys were conducted in the course of 2013/14.

Hydrocarbon Discoveries

There were no hydrocarbon discoveries made onshore or offshore in 2013/14.

Production

Production is currently limited to carbon dioxide production at Boggy Creek and gas injection and production at the Iona gas storage facility, both of which are located in the onshore Otway Basin.

Table 2.8: Otway onshore production and injection 2013/14

Field	Condensate (bbl*)	Gas Production (MMscf**)	CO2 Prod. (tonnes)	Gas Injection (MMscf)	Comments
Iona	644.51	7,671.43	-	8,595.49	Gas storage
Boggy Creek	Negligible	-	37,145.8	-	CO2 production

Source: DEDJTR

*bbl = barrels

**MMscf = million standard cubic feet

2.2. Geothermal Energy

As at 30 June 2014, six geothermal energy exploration permits were current, following the surrender of seven permits in 2013/14. There were no granted geothermal energy retention leases or production licences. Any geothermal energy activities in Victoria remain limited to exploration.

2.2.1. Geothermal energy tenements

No geothermal energy tenements were applied for or granted in 2013/14.

Table 2.9 Overview of geothermal energy tenements

Description	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
GEP Application Received	20	26	0	0	0	0	0	0
GEP Granted	12	11	0	0	0	0	0	0

Source: DEDJTR

2.2.2. Geothermal energy exploration

Exploration activities in the geothermal energy sector in 2013/14 were subdued, with \$0.908 million reported on exploration permit expenditure. There were no exploration activities that involved drilling or geophysical surveys. Most of the reported activities comprised of geological and geophysical data compilation and analysis, geothermal modelling and administration.

2.3. Pipelines

Licences are granted for the construction and operation of high pressure pipelines, primarily to convey hydrocarbons, including natural gas, crude oil and petroleum products. Pipeline licences are granted onshore under the *Pipelines Act 2005* and offshore in Victorian waters under the *Offshore Petroleum and Greenhouse Gas Storage Act 2010*. Pipeline licences in offshore Victorian waters are used to convey onshore hydrocarbons originating from petroleum production facilities in offshore (Commonwealth) waters to onshore processing facilities.

In 2013/14, two pipeline licences were applied for, and one pipeline licence was granted.

Table 2.10 Onshore pipeline licences (PL) applications received and granted

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
PL Application Received	9	0	0	0	1	0	0	2
PL Granted	7	2	1	0	0	1	0	1

Source: DEDJTR

Table 2.11 Offshore pipeline licences (PL) applications received and granted (state waters)

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
PL Application Received	0	0	1	0	0	0	0	0
PL Granted	0	0	0	0	0	0	0	0

Source: DEDJTR

Table 2.12 Pipeline licences (PLs) current as at 30 June 2014

Tenement	Number of PLs
Onshore	214
Offshore (Vic)	13

Source: DEDJTR

3. Minerals

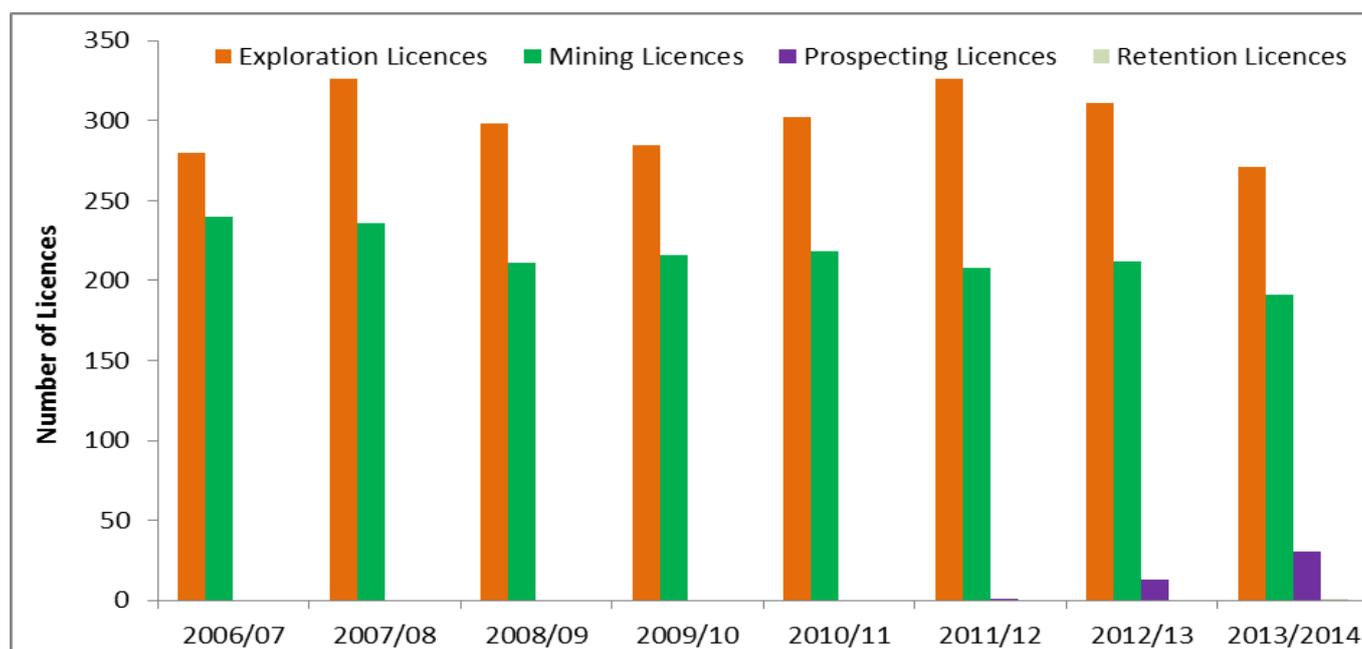
3.1. Mineral tenements

Table 3.1 Licences current as at 30 June

Tenement Type	2007	2008	2009	2010	2011	2012	2013	2014
Exploration Licences	280	326	298	285	302	326	311	271
Mining Licences	240	236	211	216	218	208	212	191
Prospecting Licences	n/a	n/a	n/a	n/a	n/a	1	13	31
Retention Licences	n/a	n/a	n/a	n/a	0	0	1	1
Totals	520	562	509	501	520	535	537	494
Change year-on-year (%)	-	8.1	-9.4	-1.6	3.8	2.9	0.4	-8.0

Source: DEDJTR

Graph 3.1 Licences current as at 30 June



Source: DEDJTR

The number of exploration, mining, prospecting and retention licences fell in relation to the previous year due to licence expirations and surrenders, and a reduction in the overall number of applications received for new licences.

As in the previous year, the majority of the applications for new licences under the MRSDA were made for exploration licences, although there was also a slight increase in the number of applications for prospecting (up from 13 to 17) and retention (up from 10 to 11) licences.

Table 3.2 New licence applications and licence renewals 2013/14

	Received	Granted / Renewed	Withdrawn	Refused
New Exploration Licence Applications	28	37	0	0
Renewal Exploration Licence Applications	59	57	0	0
Sub Total Exploration Licence Applications	87	94	0	0
New Mining Licence Applications	4	9	0	0
Renewal Mining Licence Applications	32	28	0	2
Sub Total Mining Licence Applications	36	37	0	2
New Prospecting Licence Applications	17	18	0	0
New Retention Licence Applications	11	1	0	0
Total	151	150	0	2

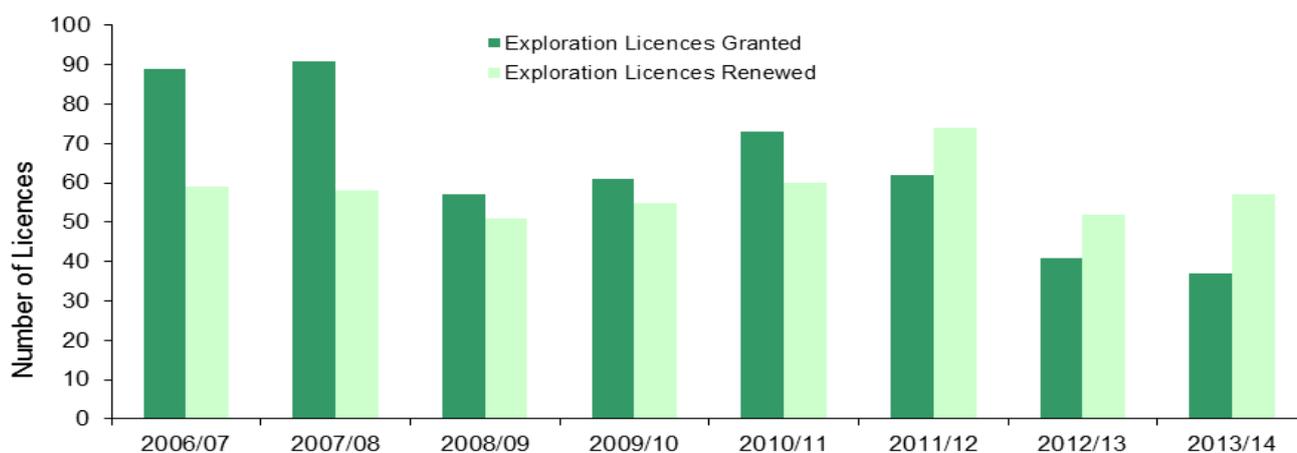
Source: DEDJTR

Table 3.3 Licences granted and renewed over time

Year	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Exploration Licences Granted	89	91	57	61	73	62	41	37
Exploration Licences Renewed	59	58	51	55	60	74	52	57
Subtotal Exploration Licences Granted and Renewed	148	149	108	116	133	136	93	94
Mining Licences Granted	19	11	14	15	20	12	11	9
Mining Licences Renewed	56	21	41	30	23	21	14	28
Sub Total Mining Licences Granted and Renewed	75	32	55	45	43	33	25	37
Prospecting Licences Granted	0	0	0	0	0	1	12	18
Retention Licences Granted	0	0	0	0	0	0	0	1
Total Licences	223	181	163	161	176	170	130	150

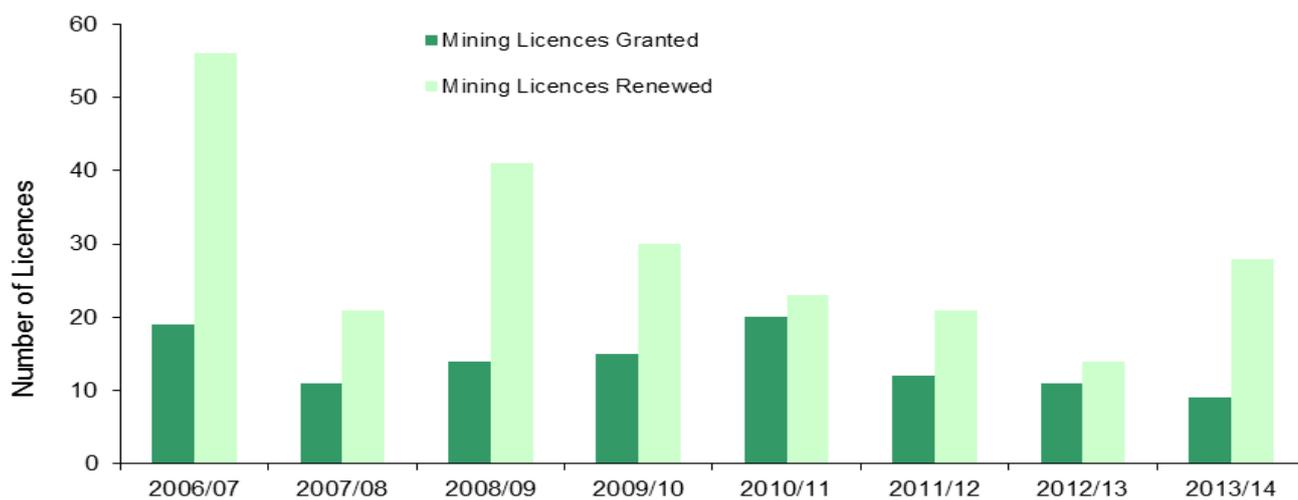
Source: DEDJTR

Graph 3.2: Exploration licences granted and renewed



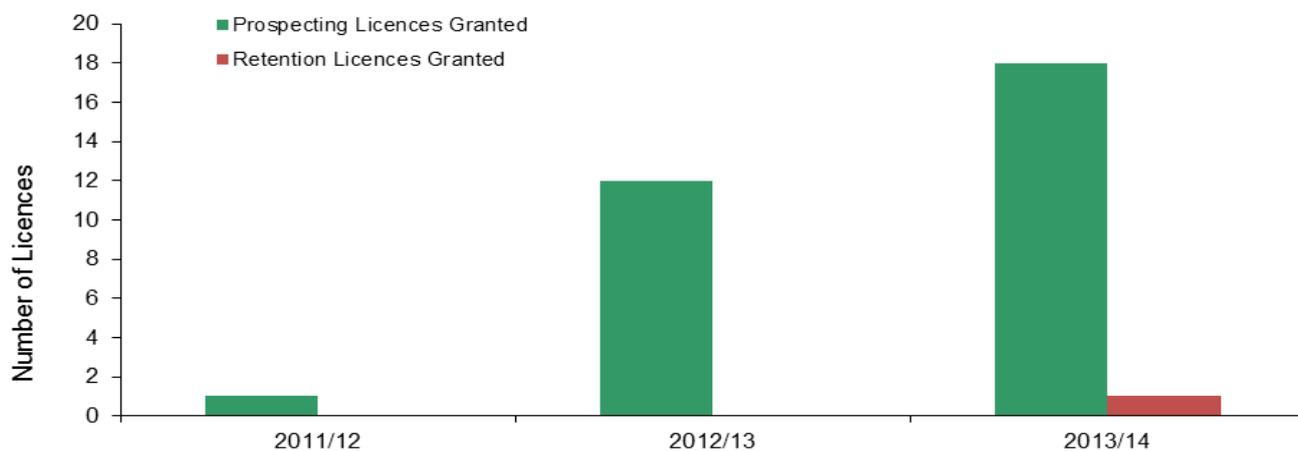
Source: DEDJTR

Graph 3.3: Mining licences granted and renewed



Source: DEDJTR

Graph 3.4: Prospecting* and retention licences granted



Source: DEDJTR

* Prospecting licence cannot be renewed.

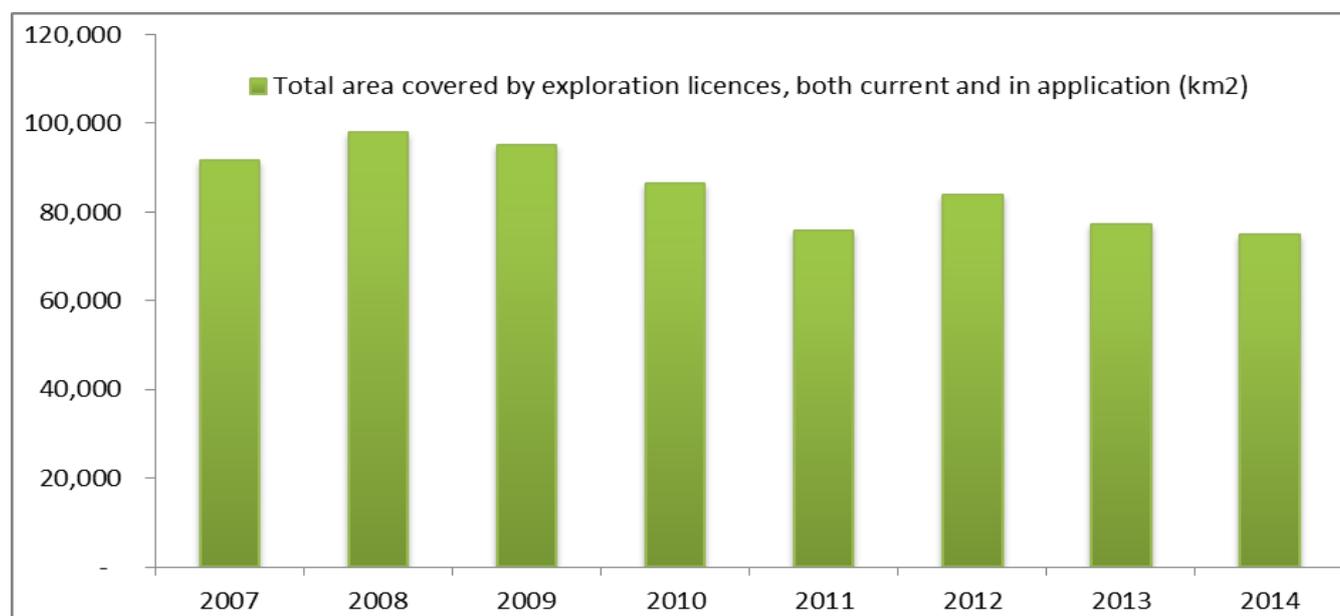
The total area of the state covered by exploration licences (current and in application) on 30 June 2014 was 75,018 km², which marked a marginal fall in relation to the previous year and mirrors a general downward trend observed over the five years to 2013/14, reflecting the wider state of the industry.

Table 3.5 Total area covered by exploration licences (current and in application as at 30 June)

	2007	2008	2009	2010	2011	2012	2013	2014
Total area (km ²)	91,500	98,086	95,240	86,365	75,753	83,900	77,366	75,018

Source: DEDJTR

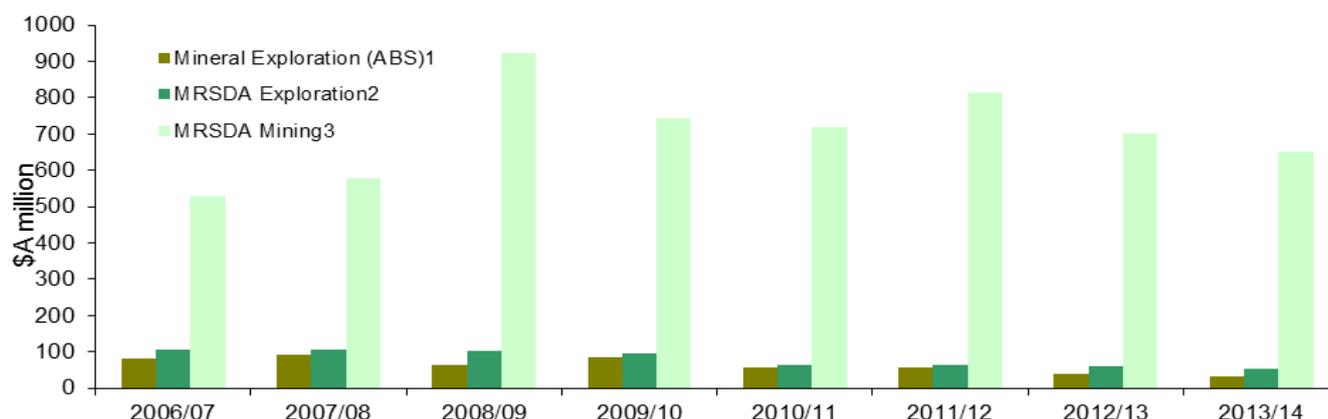
Graph 3.5: Total area covered by licences (current and in application as at 30 June)



Source: DEDJTR

3.2. Mineral exploration and mining expenditure

Mineral exploration expenditure is a lead indicator of mineral industry activity. ABS data shows a fall of 15.5% in Victorian exploration expenditure in 2013/14, compared to the previous year. While significant, this fall is reflective of falls in exploration expenditure Australia-wide over the same period, from \$3,055.4 million to \$2,108.8 million (30.9%). MRSDA data on mining also show a continuous decline in the dollar amounts spent on exploration and mining, in line with the trend observed in previous years, with exploration expenditure falling more dramatically (by 10% y-o-y, as compared to 7% for mining).

Graph 3.6: Expenditure on mineral exploration and mining development

Source: DEDJTR

¹ The Australian Bureau of Statistics (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 requirement 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 that of other States/NT. However, the MRSDA figures provide greater detail.

² The MRSDA exploration expenditure figure is derived from the activity reports required for the period 1 July-30 June. The MRSDA figure covers exploration carried out on exploration, mining and prospecting licences, and includes all expenditure on exploration licences (including overheads, wages/salaries, land access and rehabilitation expenses) and specified exploration expenditure on mining and prospecting licences.

³ 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 3.6 Expenditure on mineral exploration and mining development (\$A million)

Year	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Mineral Exploration (ABS) ¹	82.5	93.7	62.2	84.8	57.4	58.5	38.6	32.6
MRSDA Exploration ²	105.4	107.8	103.3	94.3	64.6	65.1	59.7	53.5
MRSDA Mining ³	527.8	576.6	923.3	742	719.2	813.8	701.2	650.3

Source: Figures collated from activity reports forwarded to DEDJTR required by the MRSDA, and ABS, Actual and Expected Private Mineral Exploration (Catalogue No. 8412.0)

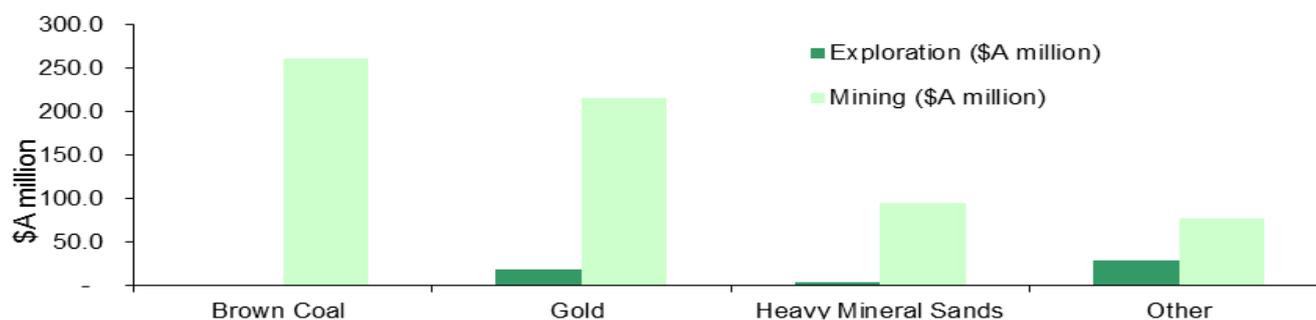
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³ The MRSDA mining expenditure figure covers all expenditure on mining and prospecting licences (including capital and operating expenses), less any specified exploration expenditure on mining and prospecting licences.

By sector, exploration on gold mining continues to account for the largest proportion of the total by single sector (over one third of the total exploration expenditure and also of the total mining expenditure). Exploration activities in the brown coal sector were considerably lower than in the previous year, reflecting wider industry trends.

Graph 3.7 Mineral exploration and mining development expenditure by sector (MRSDA) 2013/14

Source: DEDJTR

Table 3.7 Expenditure on mineral exploration and mining development by sector*

Sector	Exploration (\$A million)	As % of total	Mining (\$A million)	As % of total
Brown Coal	1.2	2.2	261.0	40.1
Gold	18.5	34.5	216.0	33.2
Heavy Mineral Sands	4.2	7.8	96.1	14.8
Other	29.6	55.4	77.3	11.9
Total	53.5	100.0	650.3	100.0

Source: DEDJTR

*Notes: Expenditures are allocated to commodity according to the primary nominated mineral commodity on the licence. Brown coal includes all coal types.

3.3. Mineral production

Victorian mineral production remains mostly brown coal, minerals sands, gold and, to a lesser degree, antimony.

Brown coal production remains dominated by the electricity generation companies in the Latrobe Valley, namely Hazelwood Power Corporation, Loy Yang Power Ltd and Yallourn Energy Pty Ltd. The other major brown coal miner was Alcoa Australia Ltd, which produced brown coal at Anglesea to generate electricity for its Point Henry aluminium smelter. The Maddingley Brown Coal Company produces a very small amount of coal at Bacchus Marsh, mainly for fuel and soil conditioning purposes.

Brown coal production in the Latrobe Valley fell by 1.5 million tonnes in 2013/14, though this was a marked recovery from the previous year's fall of nearly 9 million tonnes. The largest fall was reported by the Loy Yang mine, which is partly explained by portfolio effect, following the take-over by AGL in mid-2012 and the achievement of cost and product efficiencies. Output from the Hazelwood mine was also negatively impacted by the February/March 2013 fires. The production at the Yallourn mine, which had been significantly impacted by the collapse of the Morwell River Diversion in June 2012 that resulted in flooding of part of the mine, recovered somewhat, but remains significantly below the pre-flooding levels. Additionally, brown coal production fluctuations can partly be explained by the changes in energy demand and also by the changes in the mix of energy sources.

Gold production also fell, though only slightly, with volumes down to 225,148 ounces (from 225,776 in 2012/13). Gold production values, however, experienced a sharper decline, falling to 303.4 million from 333.1 million.

Volume production of minerals increased significantly in 2013/14, on account of investment in production of heavy mineral sands.

In terms of value of mineral production (excluding brown coal), the total fell significantly from \$1,007 million in 2011/12 to \$660 million in 2012/13. The decline continued into 2013/14, though not to the same degree, with the total value down to \$647 million.

Table 3.8 Mineral production over time*

Year	Fuel Minerals	Metallic Minerals				Heavy Mineral Sands			Industrial Minerals		
	Brown Coal	Gold	Anti-mony	Copper Concentrate	Zinc Concentrate	Zircon	Rutile	Ilmenite	Feldspar	Gypsum	Kaolin and fine clay
1993/94	49,683	125,960	-	16,287	1,012	-	-	-	-	176,800	105,400
1994/95	49,922	138,876	-	13,163	5,947	-	-	-	-	193,100	79,500
1995/96	54,281	155,550	-	1,338	6,384	-	-	-	-	198,667	55,065
1996/97	60,795	151,229	-	-	-	-	-	-	-	501,495	114,778
1997/98	65,274	160,122	-	-	-	-	-	-	25,703	479,820	166,100
1998/99	66,648	159,088	-	-	-	-	-	-	45,293	404,917	180,634
1999/00	67,363	154,043	-	-	-	-	-	-	46,162	462,806	201,436
2000/01	64,958	122,632	-	-	-	1,307	5,921	-	53,148	437,694	203,753
2001/02	66,661	112,283	-	-	-	3,702	16,805	28,123	56,757	600,931	202,370
2002/03	66,809	107,544	-	-	-	10,841	28,329	50,984	68,198	420,293	248,692
2003/04	66,343	104,188	-	-	-	4,645	11,239	19,978	69,552	439,906	251,392
2004/05	67,152	123,308	-	-	-	-	-	-	75,683	346,522	189,237
2005/06	67,737	203,352	-	-	-	-	-	-	69,876	416,294	149,218
2006/07	65,613	224,927	1,033	-	-	48,636	22,263	-	76,187	235,266	170,727
2007/08	66,033	181,100	1,468	-	-	140,853	72,166	13,503	75,384	395,717	151,669
2008/09	68,252	248,918	2,133	-	-	102,123	80,317	-	73,893	313,145	90,553
2009/10	68,750	241,965	2,357	-	-	90,671	117,314	27,904	66,507	315,509	92,862
2010/11	66,733	186,146	4,859	-	-	188,663	209,919	82,075	74,806	289,528	31,683
2011/12	69,124	211,201	5,007	-	-	187,538	261,744	42,814	95,310	630,258	80,202
2012/13	59,854	225,776	4,558	-	-	86,243	140,842	67,067	61,578	499,681	204,164
2013/14	58,001	225,168	5,336	-	-	128,064	243,355	563,371	44,254	454,526	167,333
Change year-on-year (%)	-3.10	-0.27	17.06	-	-	48.49	72.79	740.01	-28.13	-9.04	-18.04

Source: DEDJTR, Statutory returns under the MRSDA.

*Gold reported in ounces, brown coal in million tonnes, gypsum in cubic meters, and the remainder in tonnes.

Table 3.9 Mineral production sales values (A\$ million) 2013/14

Mineral	2012/13	2013/14	Change year-on-year (%)
Brown Coal*	n/a	n/a	n/a
Gold	333.1	303.4	-8.9
Antimony	30.8	12.5	-59.3
Heavy Mineral Sands	282.7	316.5	12.0
Industrial Minerals	12.8	14.1	9.8
Others	0.3	0.2	-47.6
Total (excl. brown coal)	659.7	646.6	-2.0

Source: DEDJTR, Statutory returns under the MRSDA.

*No unit value is assigned to brown coal for the purposes of determining its production value. Brown 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 brown coal.

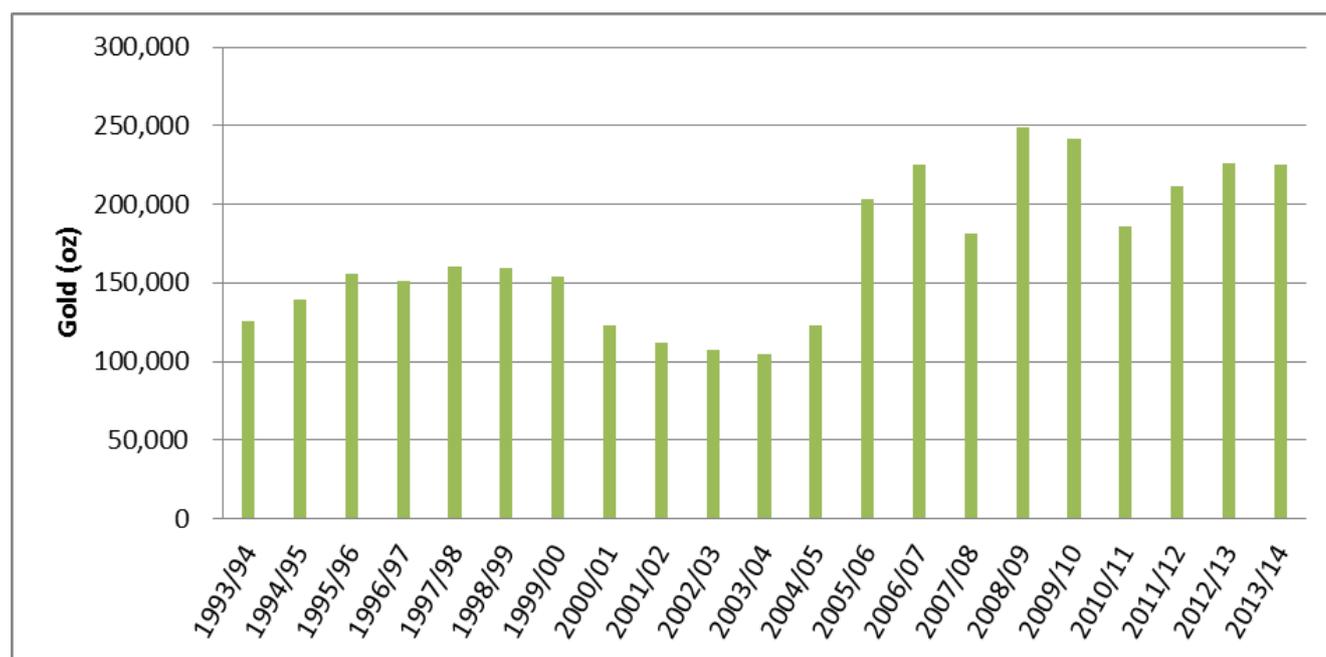
Table 3.10 Gold Producers (production more than 500 ounces) 2013/14

Producer	Location	Licence	Production (oz)	Value (\$Am)**
Fosterville Gold Mine Pty Ltd	Fosterville	MIN 5404	99,381	140.1
Stawell Gold Mines Pty Ltd	Stawell	MIN 5260	47,797	54.6
Balmaine Gold Pty Ltd	Ballarat	MIN 5396	39,095	55.2
Mandalay Resources Costerfield Operations Pty Ltd	Costerfield South	MIN 4644	34,555	48.6
Unity Mining Ltd	Bendigo	MIN5344	-	-
Other (in total)*			4,319	4.9
Total Production			225,148	303.4

Source: DEDJTR, Statutory returns under the MRSDA.

* Production of less than 500 ounces was reported from 18 producers

**Estimated value based on the reported average gold price of major producers

Graph 3.8 Gold production (ounces) by year

Source: DEDJTR

Table 3.11 Brown coal production (thousand tonnes) by year

Year	Maddingley Brown Coal Co. Bacchus Marsh	Alcoa Anglesea	SECV*	Loy Yang	Yallourn	Hazelwood	Annual Total
1993/94	31.00	1,093.00	48,559.00	-	-	-	49,683.00
1994/95	43.00	1,162.00	48,717.00	-	-	-	49,922.00
1995/96	40.00	836.00	-	25,000.00	17,460.00	10,945.00	54,281.00
1996/97	39.00	1,005.00	-	27,808.00	17,083.00	14,860.00	60,795.00
1997/98	28.00	1,030.00	-	29,766.00	17,924.00	16,525.00	65,274.00
1998/99	22.00	1,091.00	-	30,510.00	17,350.00	17,675.00	66,648.00
1999/00	4.00	926.00	-	30,865.00	16,098.00	19,470.00	67,363.00
2000/01	11.00	963.00	-	28,686.00	16,234.00	19,063.00	64,958.00
2001/02	10.00	1,069.00	-	30,949.00	15,650.00	18,982.00	66,661.00
2002/03	15.00	1,051.00	-	29,017.00	17,515.00	19,210.00	66,809.00
2003/04	18.00	1,107.00	-	29,577.00	16,585.00	19,056.00	66,343.00
2004/05	19.00	943.00	-	29,826.00	17,663.00	18,701.00	67,152.00
2005/06	22.00	1,101.00	-	30,937.00	16,933.00	18,743.00	67,737.00
2006/07	15.00	1,049.00	-	29,146.00	16,090.00	19,313.00	65,613.00
2007/08	16.00	1,066.00	-	30,745.00	15,467.00	18,739.00	66,033.00
2008/09	14.00	966.00	-	29,007.00	18,229.00	20,036.00	68,252.00
2009/10	11.00	1,077.00	-	30,446.00	17,685.00	19,531.00	68,750.00
2010/11	16.00	1,070.00	-	29,895.00	17,705.00	18,047.00	66,733.00
2011/12	21.00	1,022.00	-	30,237.00	17,404.00	20,440.00	69,124.00
2012/13	18.00	913.00	-	28,921.00	12,885.00	17,118.00	59,854.00
2013/14	18.77	1,034.30	-	26,966.65	13,494.25	16,486.94	58,000.91

Source: DEDJTR, Statutory returns under the MRSDA.

* State Electricity Commission of Victoria, disaggregated in 1994.

4. Extractive Industry

Extractive industries provide the raw materials for building and construction, which are vital to the State's development. The industry operates quarries that produce a range of "stone" products, predominantly being hard rock, clay, sand and gravel.

As at 30 June 2014, 881 quarries were operating under the MRSDA in Victoria. The total number of quarries has been relatively stable over the last decade.

Table 4.1 Status of extractive industry work authorities* as at 30 June 2014

Tenement	Proposal**	Application***	Current
Work Authority	120	15	881

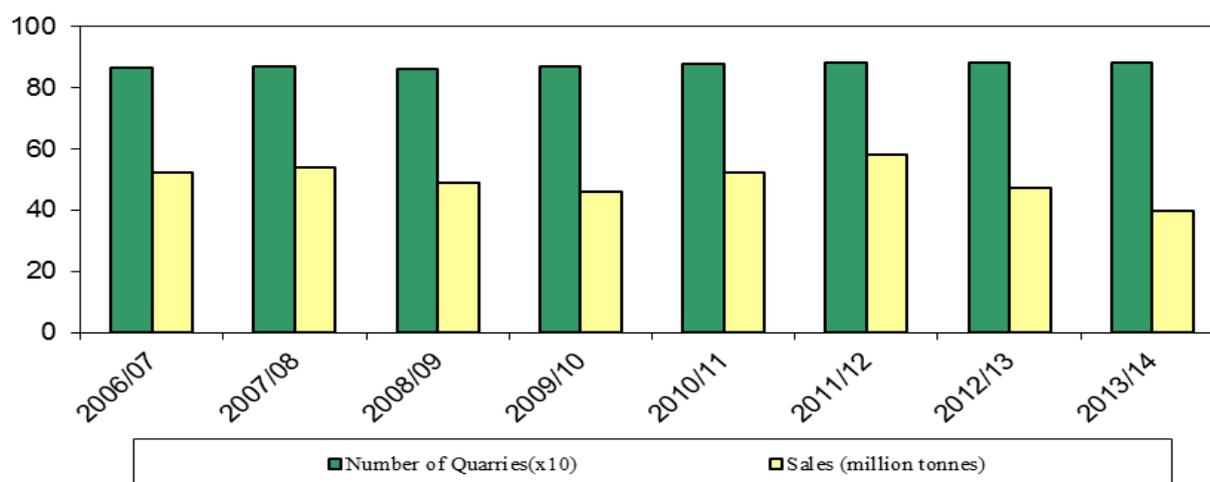
Source: DEDJTR

*A Work Authority is granted under the MRSDA.

** Work Authority is in proposal stage when an initial site meeting takes place attended by the Inspector and other relevant parties.

*** Application stage is when a Work Authority application is lodged with all requirements to obtain an approved Work Plan.

Graph 4.1 Extractive industry quarries and sales



Source: DEDJTR

Sales of quarry products fluctuate from year to year, reflecting domestic demand changes from the building and construction sector. The fall in demand in 2013/14 is explained by the continued slowing of activity related to major infrastructure projects, as was the case in 2012/3.

A total of 485 quarries reported production in 2013/14, with total sales volume being 40.33 million tonnes. In 2012/13, the number of producing quarries stood at 535, with volume output of 47.44 million.

Volume sales of extractive industry (quarry) products in 2013/14 fell by around 7.1 million tonnes, or 17% on a y-o-y basis, which is broadly in line with the previous year's trend (an 18% y-o-y drop). Value drop was less pronounced, at 9% y-o-y to \$676.55 million.

Table 4.2 Victorian extractive industries sales by product type 2013/14

Product Group	Product Type	Sales - volume (m tonnes)	Sales - value (\$Am)
Single size products	Aggregate	13.27	265.48
	Armour	0.16	6.80
Single size products total		13.44	272.28
Multi size products	Road base	4.89	82.05
	Road sub-base	8.88	128.50
	Fill	3.01	28.87
Multi size products total		16.78	239.42
Sand products	Concrete sand	6.24	103.44
	Fine sand	1.15	14.39
	Industrial	0.19	5.23
	Foundry	0.11	5.00
	Glass sand	0.20	0.00
Sand products total		7.89	128.06
Limestone Products	Cement	0.00	1.26
	Agriculture	0.46	8.53
	Lime	0.19	10.88
Limestone products total		0.65	20.68
Clay products	Brick	0.52	6.46
	Stoneware	0.00	0.00
	Tile/pipe	0.04	0.07
Clay products total		0.56	6.53
Miscellaneous	Dimension stone	0.00	0.69
	Unspecified	1.01	8.90
Miscellaneous total		1.01	9.59
GRAND TOTAL		40.33	676.55

Source: DEDJTR, statutory returns under the MRSDA.

Table 4.3 Victorian extractive industries sales by rock type 2013/2014

Product Group	Product Type	Sales - volume (m tonnes)	Sales - value (\$Am)
Hard Rock	BASALT	16.12	291.39
	DOLERITE	0.30	6.80
	GNEISS	0.01	0.08
	GRANITE	3.15	60.39
	HORNFELS	2.62	41.98
	MARBLE	-	-
	QUARTZITE	0.21	1.35
	RHYODACITE	1.40	30.51
	SCHIST	0.20	3.93
	SEDIMENTARY	2.37	25.92
	SLATE	0.00	0.04
	TRACHYTE	0.02	0.38
	Hard Rock Total		26.40
Soft Rock	CLAY & CLAY SHALE	0.61	3.02
	LIMESTONE	1.53	34.17
	SAND & GRAVEL	10.81	166.08
	SCORIA	0.64	7.95
	SOIL	0.02	0.15
	TUFF	0.31	2.40
Soft Rock Total		13.93	213.78
GRAND TOTAL		40.33	676.55

Source: DEDJTR, statutory returns under the MRSDA.

5. Revenue and Bonds

5.1. Revenue

In 2013/14, a total of \$50.1 million was collected from the industry in royalties, rentals, and levies, fees and charges under the Acts administered by the department. This compares with \$57.2 million collected in 2012/13.

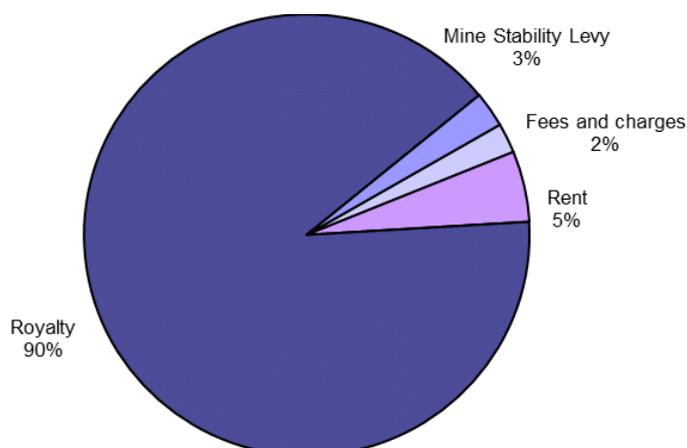
Royalties fell from \$51.9 million in 2012/13 to \$45.1 million, on account of lower production from the mining and extractive industry sectors. Petroleum royalties remained stable, again totalling \$0.1 million.

Table 5.1 Minerals, extractive and petroleum revenue 2013/14

Revenue Stream	Revenue (\$A million)
Fees and charges	1.1
Rent	2.6
Royalty	45.1
Mine Stability Levy	1.3
Total	50.1

Source: DEDJTR

Graph 5.1 Minerals, extractive and petroleum revenue 2013/14

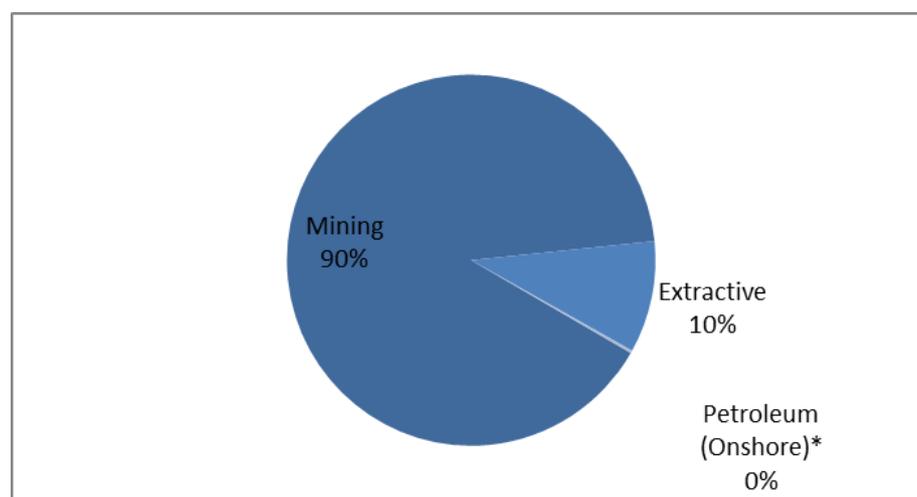


Source: DEDJTR

Table 5.2 Minerals, extractive and petroleum royalties 2013/14

Sector	Royalties (\$A million)
Mining	40.6
Extractive	4.4
Petroleum (Onshore)*	0.1
Total	45.1

Source: DEDJTR

Table 5.2 Minerals, extractive and petroleum royalties 2013/14

Source: DEDJTR

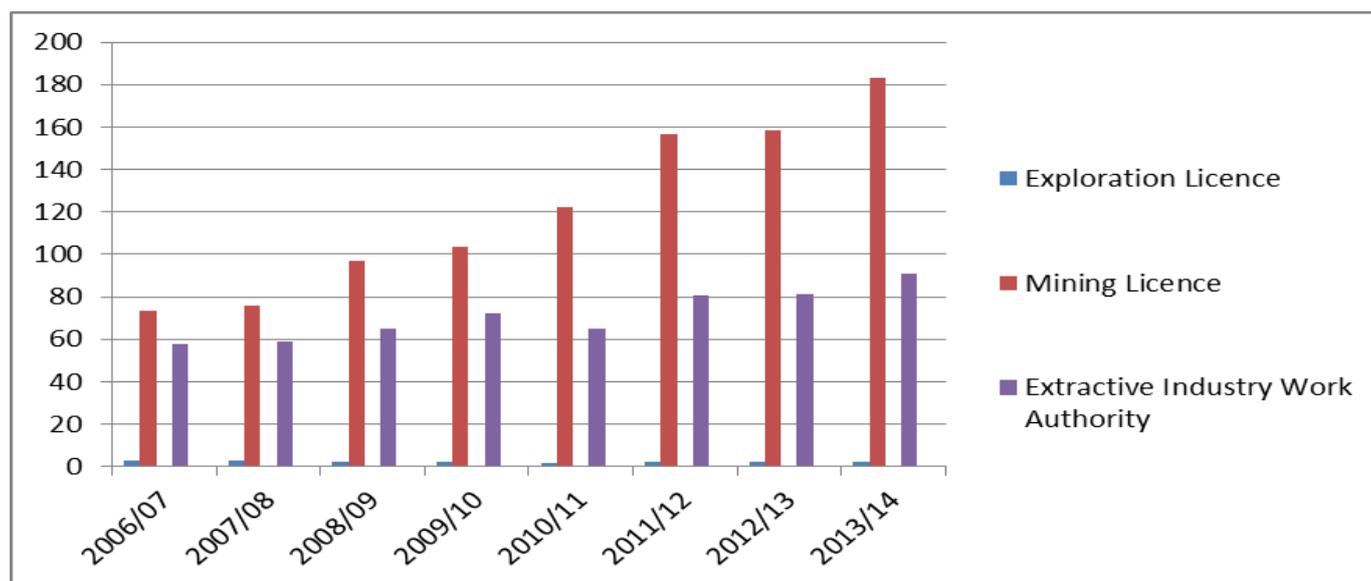
5.2. Rehabilitation Bonds

The sum of rehabilitation bonds held by the Department in 2013/14 was \$276.5 million. A reduction in the value of exploration licence bonds between 2012/13 and 2013/14 reflect the reduction in the number of exploration licences from 311 to 271 in the same period and also the return of bonds following the rehabilitation of the site, without necessarily the licence being cancelled or expired or surrendered. In contrast, the value of rehabilitation bonds held against mining licences and work authorities increased, reflecting the recalculation of the rehabilitation liability that exists on those sites, despite the reduction in the number of mining licences from 212 to 191.

Table 5.3 Value of rehabilitation bonds by authority type (\$A million) 2013/14

Year	Exploration Licence	Mining Licence	Prospecting Licence	Retention Licence	Extractive Industry Work Authority	Total
2006/07	2.8	73.7	n/a	n/a	57.5	134.0
2007/08	3.1	75.6	n/a	n/a	58.8	137.5
2008/09	2.0	97.1	n/a	n/a	64.9	164.0
2009/10	2.3	103.7	n/a	n/a	72.3	178.3
2010/11	1.9	122.1	n/a	n/a	65.0	189.0
2011/12	2.5	156.9	0	n/a	80.9	240.3
2012/13	2.4	158.3	0.025	n/a	81.0	241.7
2013/14	2.1	183.4	0.091	0.010	90.9	276.5

Source: DEDJTR

Graph 5.3 Value of rehabilitation bonds by authority type (\$A million) 2013/14*

Source: DEDJTR

*Prospecting and retention licence bonds not shown.

Table 5.4 Rehabilitation bond reviews over time

Year	Number of Bonds Reviewed	Result of Bond Review		
		Increase	No Change	Decrease
2006/07	258	65	190	3
2007/08	402	58	335	9
2008/09	382	49	323	10
2009/10	413	55	344	14
2010/11	185	15	166	4
2011/12	216	19	193	4
2012/13	258	37	220	1
2013/14	214	66	139	9

Source: DEDJTR

6. Monitoring, Compliance and Enforcement

The Earth Resources Regulation Branch continued to be responsible for the regulation of the earth resources industries in 2013/14. The Branch undertakes a monitoring and compliance program to ensure that authority holders comply with their obligations and meet community expectations. DEDJTR monitoring, compliance and enforcement activities under the MRSDA are summarized in the table below.

Table 6.1 Monitoring, compliance and enforcement activities 2013/14

Description	Total 2012/2013	Total 2013/2014	Change Year-on-Year (%)
Inspections and Site Visits	443	499	12.6
Completed Compliance Audits	62	50	-19.4
High Risk Issues Audits	105	112	6.7
Complaints Received	75	46	-38.7
Investigations Initiated	2	0	-100.0
MRSDA Notices Issued	26	26	0.0

Source: DEDJTR

