

South Australia's Minerals Scorecard 2009-10

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PIRSA

PACE

plan for accelerating exploration

HOT PROSPECTS



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The Minerals Industry ScoreCard

“If you don’t measure it, you can’t manage it”

The Mineral Value-Chain ScoreCard, initiated in 2002, provides information regarding the performance of South Australia’s mineral industry. The ScoreCard measures give critical information on strategic development targets (SASP), as well as assisting in the development of programs designed to aid expansion of the mineral industry.

ScoreCards introduced to:

- Better understand volumes and values of different industries at the different levels of the value chain
- Evaluate and compare contributions (identify opportunities) by sectors.
 - Mineral Scorecard, Wine Scorecard & Food Scorecard
- Measure progress over time
- Assist Industry & Government in development and planning



The Minerals Industry ScoreCard

“If you don’t measure it, you can’t manage it”

The Mineral value-chain ScoreCard, initiated in 2001, provides information regarding the performance of South Australia’s mineral industry across the exploration, investment, production, processing and export stages of wealth creation. In doing so, the ScoreCard measures give critical information on the three minerals strategic development targets (South Australia’s Strategic Plan, 2007), as well as assisting in the development of programs designed to aid expansion of the mineral industry.

- **T1.17 Minerals exploration:**

Exploration expenditure in South Australia to be maintained in excess of \$100 million per annum until 2010.

- **T1.18 Minerals production:**

Increase the value of minerals production to \$3 billion by 2014.

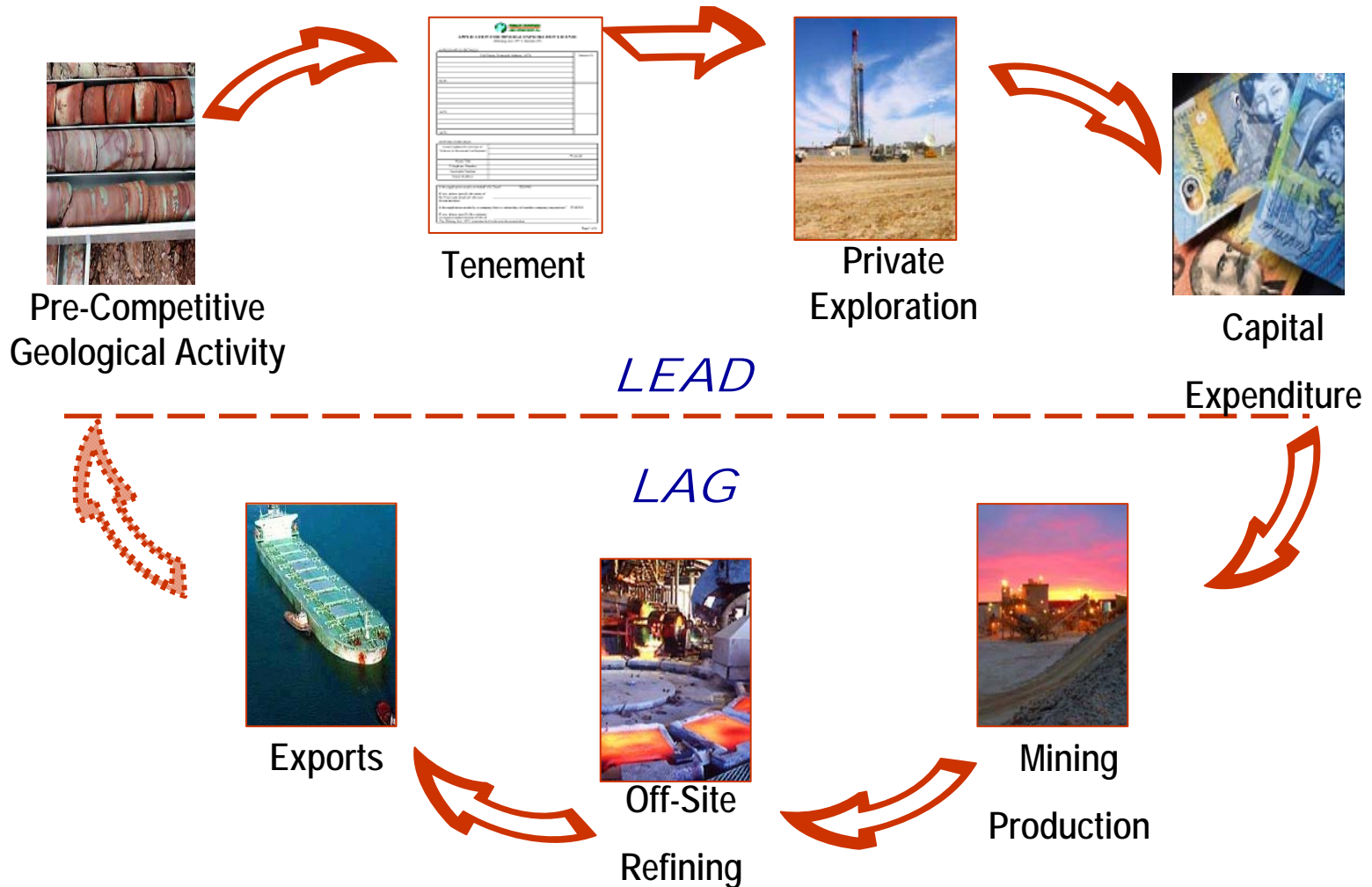
- **T1.19 Minerals processing:**

Increase the value of minerals processing to \$1 billion by 2014.



Minerals Industry Value Chain

Key Measures



2009-10 Minerals Scorecard – Summary Table

Key Measures

MINERAL CATEGORY	MINERAL TENEMENT RENT EXPENDITURE	PUBLIC TARGETED GEO-INFORMATION EXPENDITURE	T1.17 (\$100m by 2014)		T1.18 (\$3b by 2014)		T1.19 (\$1b by 2014)		T1.14 contribute to (\$25b state exports by 2014)	T1.18+T1.19 (\$4b by 2014)
			PRIVATE EXPLORATION EXPENDITURE	NEW CAPITAL EXPENDITURE	MINE GATE PRODUCTION VALUE	ROYALTY RETURN VALUE	COMMODITY IMPORTS VALUE	NET OFF-SITE REFINING VALUE	EXPORTS (overseas) VALUE	NET MINERAL INDUSTRY VALUE
METALLIC MINERALS										
Copper	-	-	62,000,000	-	1,583,152,262	37,591,102	23,292,312	3,768,550	1,224,114,120	1,586,920,812
Gold	-	-	18,900,000	-	345,000,954	8,528,157	11,487,192	16,496,939	30,308	361,497,893
Silver	-	-	1,000,000	-	31,912,830	635,167	148,348,199	135,773,658	208,151,154	167,686,488
Iron ore - haematite	-	-	16,100,000	-	537,211,535	8,561,063	-	-	680,659,725	537,211,535
Iron ore - magnetite	-	-	-	-	126,797,762	2,117,016	-	322,025,258	-	448,823,020
Lead	-	-	1,000,000	-	17,629,738	264,446	222,366,056	222,354,594	361,805,798	239,984,332
Zinc	-	-	1,000,000	-	48,908,912	1,243,436	39,293,260	40,379,183	120,772,287	89,288,095
Nickel	-	-	800,000	-	-	-	-	-	-	-
Other Metallics	-	-	11,200,000	-	-	-	-	-	205,940	-
TOTAL	-	-	112,000,000	-	2,690,613,993	58,940,387	444,787,021	740,798,181	2,595,739,332	3,431,412,174
ENERGY MINERALS										
Uranium Oxide	-	-	52,700,000	-	191,634,218	6,707,198	-	-	191,016,316	191,634,218
Black Coal	-	-	600,000	-	60,476,555	2,145,337	-	-	-	60,476,555
Other Coal	-	-	-	-	-	-	-	-	18,888,085	-
TOTAL	-	-	53,300,000	-	252,110,773	8,852,535	-	-	209,904,401	252,110,773
INDUSTRIAL MINERALS										
Dolomite	-	-	-	-	4,515,927	158,057	-	3,161,149	-	7,677,076
Gypsum	-	-	-	-	8,337,637	291,817	-	29,857,087	5,013,653	38,194,723
HMS (undifferentiated)	-	-	2,600,000	-	48,768,429	731,526	-	-	-	48,768,429
Ilmenite	-	-	-	-	-	-	-	-	-	-
Leucoxene	-	-	-	-	-	-	-	-	-	-
Limestone	-	-	-	-	33,799,689	81,028	-	59,573,902	-	93,373,592
Rutile	-	-	-	-	-	-	-	-	-	-
Salt	-	-	-	-	16,256,924	474,073	-	2,737,683	2,812,157	18,994,608
Silica	-	-	-	-	12,708,704	360,114	-	13,106,191	-	25,814,895
Zircon	-	-	-	-	-	-	-	-	-	-
Other Industrial Materials	-	-	-	-	6,786,311	214,643	-	-	6,755,480	6,786,311
INDUSTRIALS TOTAL	-	-	2,600,000	-	131,173,621	2,311,260	-	108,436,012	14,581,290	239,609,634
CONSTRUCTION MATERIALS										
Dimension Stone	-	-	-	-	5,617,796	37,741	-	4,755,210	1,975,066	10,373,007
Dolomite-Limestone	-	-	-	-	96,935,144	2,118,401	-	49,277,201	-	146,212,345
Quartzite-Sandstone	-	-	-	-	33,834,087	874,601	-	455,555	7,382	34,289,641
Natural Sand	-	-	-	-	31,022,817	1,359,758	-	46,705,872	21,735	77,728,688
Other Rock Materials	-	-	-	-	27,023,468	639,442	-	-	-	27,023,468
Other Clay Products	-	#REF!	-	-	2,404,125	85,380	-	793,802	29,844	1,610,322
Other Construction Materials	-	-	-	-	-	-	-	-	-	-
CONSTRUCTION TOTAL	-	#REF!	-	-	196,837,436	5,115,322	-	100,400,035	2,034,027	297,237,471
GEMSTONES										
Opal	-	-	-	-	12,370,000	-	-	-	2,191,503	12,370,000
Diamonds	-	-	-	-	-	-	-	-	142,395	-
Other	-	-	-	-	6,595	231	-	-	-	6,595
TOTAL	-	-	-	-	12,376,595	231	-	-	2,333,898	12,376,595
<i>Not Elsewhere Classified</i>										
					457,040,000					
ALL MINERALS	6,449,143	3,136,000	167,900,000	457,040,000	3,283,112,418	75,219,734	444,787,021	949,634,229	2,824,592,948	4,232,746,647

Commodity based data, in some areas only total data is currently available



Minerals Scorecard 2009-10 – SUMMARY DATA

<i>Key Measure</i>	<i>Data Source</i>	<i>2009-10 \$m</i>	<i>2008-09 \$m</i>	<i>Change direction</i>	<i>Change \$m</i>	<i>% change</i>
Mineral Tenement Rent Expenditure	PIRSA – TMS data	\$6.44	\$6.42	↑	\$0.02	0.3%
Public Targeted Geo-information Expenditure	PIRSA	\$3.14	\$3.84	↓	\$0.70	-18.3%
Private Exploration Expenditure (T1.17)	ABS Cat. 8412	\$167.9	\$220.7	↓	-\$52.8	-24%
New Capital Expenditure	ABS Cat. 5625	\$457	\$746	↓	-\$289	-38.7%
Mine Gate Production Value (T1.18)	PIRSA MER Report Book 2010/21	\$3283	\$2873	↑	\$409.7	14.3%
Royalties payable	PIRSA	\$75.2 ^a	\$84.3 ^a	↓	-\$9.1	-10.8%
Commodity Import Value	PIRSA	\$357	\$445	↓	-\$88.1	-19.8%
Net off-site Refining Value (T1.19)	PIRSA estimate	\$869	\$973	↓	-\$103	-10.6%
Commodity Export Value	ABS Cat. 5368 and PIRSA	\$2825	\$2744	↑	\$80	2.9%
Net Mineral Industry Value (T1.18 + T1.19)	PIRSA	\$4152	\$3846	↑	\$306.3	8.0%

^a Gross royalties payable (but not received) during the period



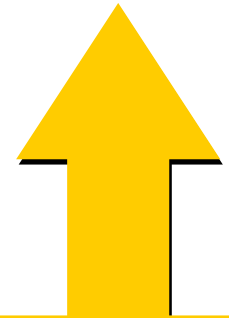
South Australia's Minerals Scorecard 2009-10

Factors influencing the 2009-10 Minerals ScoreCard

Scorecard measures in 2009-10 indicate a return to the favourable conditions for the minerals industry that existed before the Global Financial Crisis (GFC).

South Australia achieved record levels of Mineral Production (achieving T1.18 for the first time) despite the significant impact of major shaft failure at the states largest producing mine, Olympic Dam. Moderate increases were achieved in Mine Gate Production and Exports, while decreases were recorded for the second successive years in the areas of Mineral Exploration and Off-site mineral refining.

The Minerals industry economic recovery continued to rebound throughout 2009-10 driven by high commodity prices. Those significantly positively impacting on South Australia were copper, iron ore and gold and evident in increased mineral production and exports.



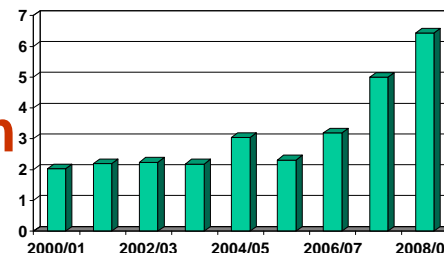
2009-10

Commodity prices rebound and increase



Key Measure

Mineral Tenement Rent Expenditure \$6.44m



Mineral Tenement Rent Expenditure increased marginally by \$0.02 m (0.3%) to \$6.44m

Rental expenditure collected by PIRSA for:

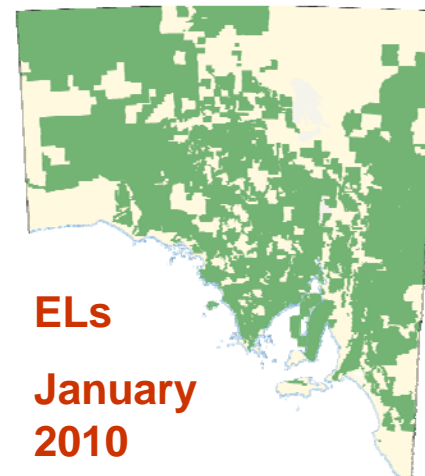
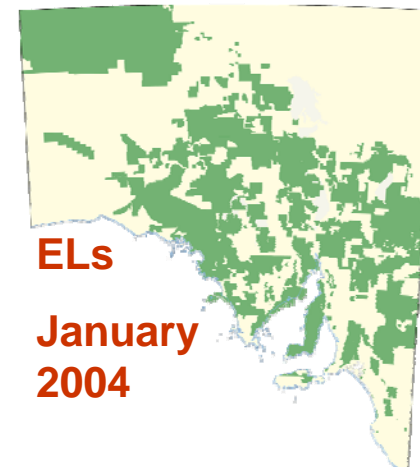
Exploration Licences

Mining Leases

Mineral Claims

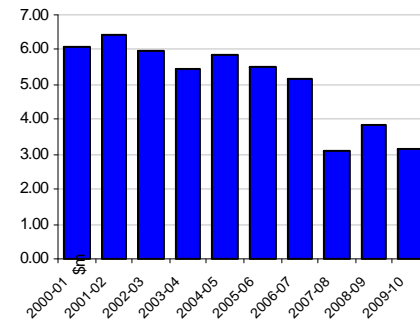
Extractive Leases

(In areas of freehold land, 95% of the rental collected is refunded to the landowner, excluding exploration licence fees)



Key Measure

Public targeted geo-information expenditure
\$3.1m



Government funded initiatives ie. **PACE 2020** play a crucial role in stimulating mineral exploration expenditure. In line with PACE budget allocations, the level of PACE expenditure in 2009-10 was \$3.1m.

Current Initiative:

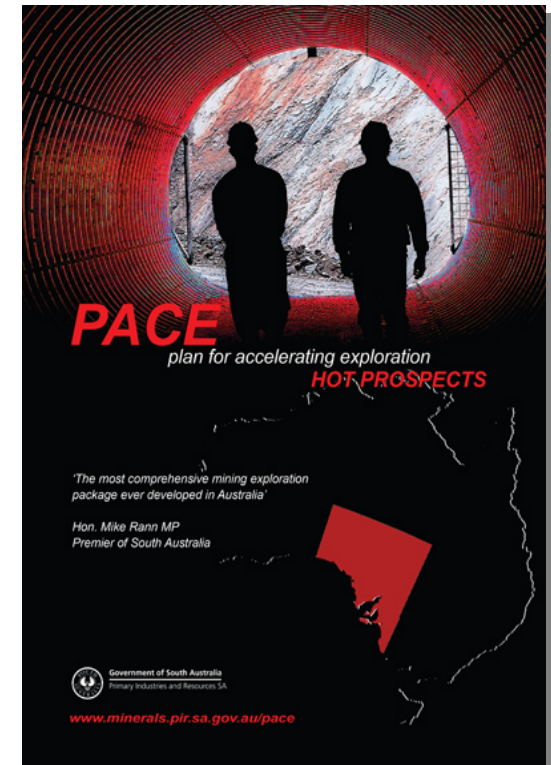
PACE 2020 – PACE Exploration, PACE Global and PACE Mining (\$24.6m)

Past Initiatives:

2004-2010 - PACE

1998-2002 – TEISA (\$10m)

1992-1996 – SAEI (\$23.5m)



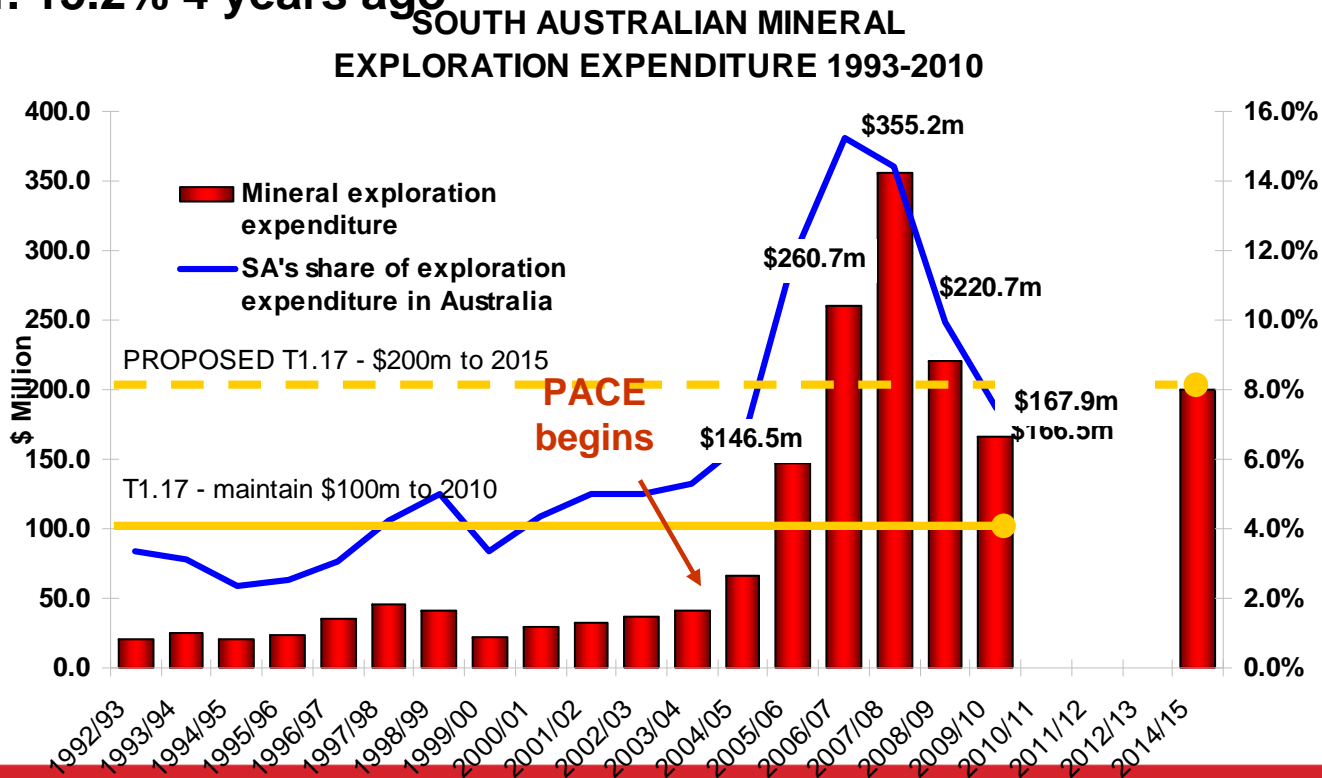
Private Exploration Expenditure - \$167.9m

SASP Target T1.17 - maintain \$100m until 2010

Decreased by \$52.8m (24%) to \$167.9m.

Private mineral exploration has exceeded the SASP target: T1.17 of \$100m for the fifth successive year

South Australia's share of national expenditure in 2009/10 was 7.5% c.f. 15.2% 4 years ago



Key Measure

Private Exploration Expenditure - \$167.9m

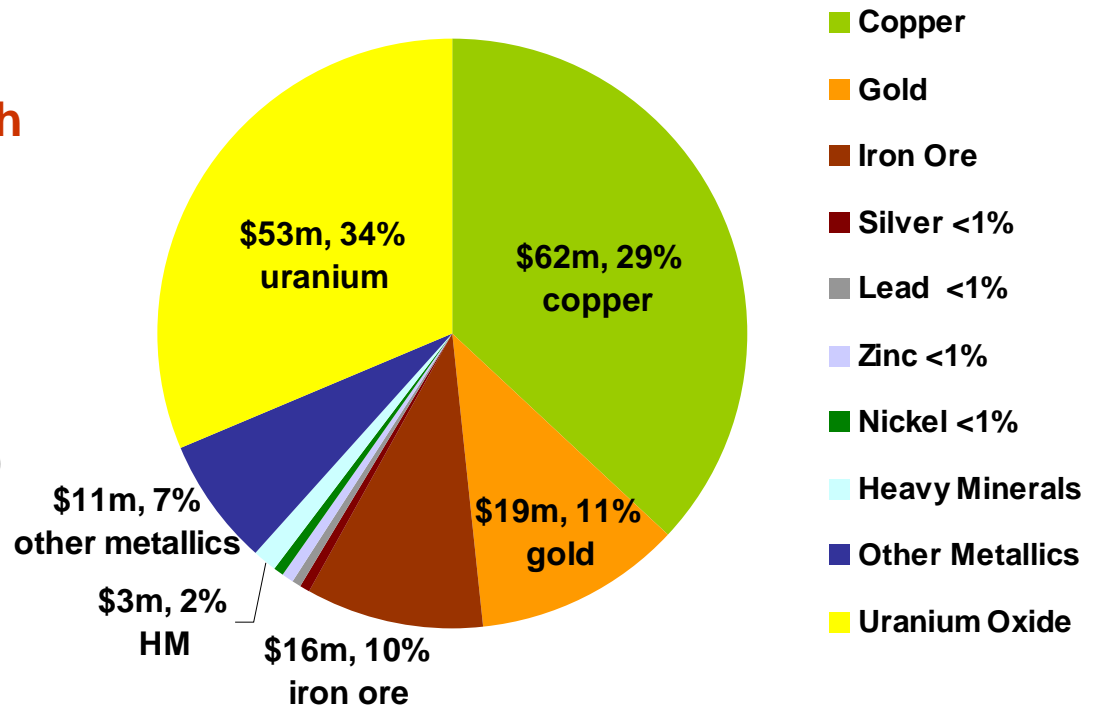
Mineral Exploration Expenditure -

Copper, Uranium, Gold and Iron Ore dominate

In Addition in 2009/10 South Australia attracted:

Over one quarter (26%), \$62m, of national Copper Exploration

Over one third, \$51m (38%) of national Uranium Exploration

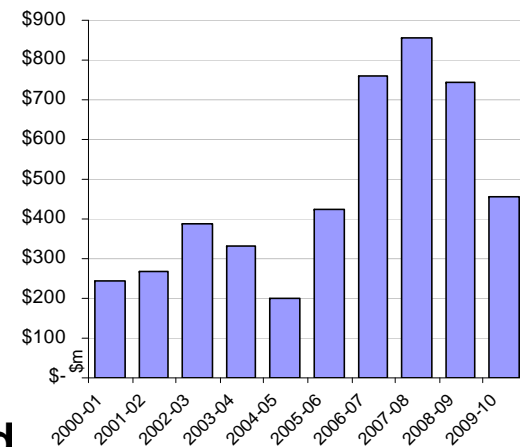


Key Measure

Private New Capital Expenditure - \$457m

Decreased by \$289m (38.7%) to \$457m.

This decrease was expected as the significant spending at Prominent Hill (\$1175m) was completed in the previous year (2008-09).



New Capital Expenditure for the 2009-10 financial year has primarily been associated with construction of:

- Jacinth-Ambrosia (Iluka Resources) - \$390m heavy mineral sands mine
- Cairn Hill (IMX Resources) – \$15m iron ore (magnetite) and copper-gold mine
- Kanmantoo (Hillgrove Resources) - \$99.5m copper-gold mine
- White Dam (Polymetals/Exco Resources) - \$23.5m gold mine

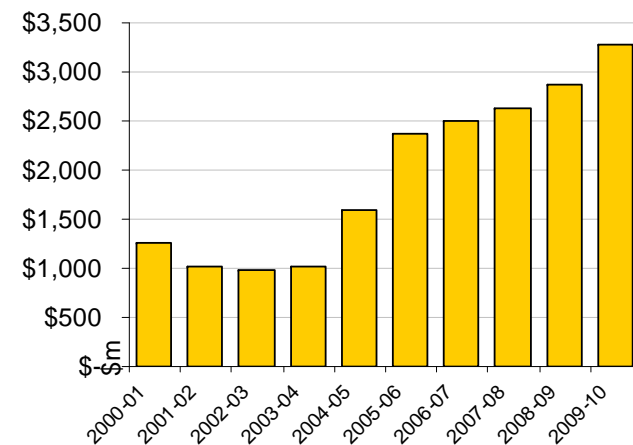


Key Measure

Mine Gate Production Value - \$3.283 bn

SASP target - \$3 bn by 2014

(ACHIEVED FOR FIRST TIME 2009/10)



Values rose significantly by \$409.7m (14.3%) to reach \$3.283 b in 2009-10.

Growth due to:

- higher commodity prices
- increased value of copper, iron ore and gold
- first full year production at Prominent Hill and increased production of haematite from the Middleback Ranges.

Overall increase in mineral production despite significant decrease in production (Cu, Au, U, Ag) at Olympic Dam - shaft failure led to around half the anticipated production for the year.

BHP Billiton - Olympic Dam reported production in 2009/10 of 103 300 t Cu (cathode), 2 279 t U3O8, 65 494 oz Au (bullion), 500 000 oz Ag (bullion).



Key Measure

Mine Gate Production Value - \$3.283 bn

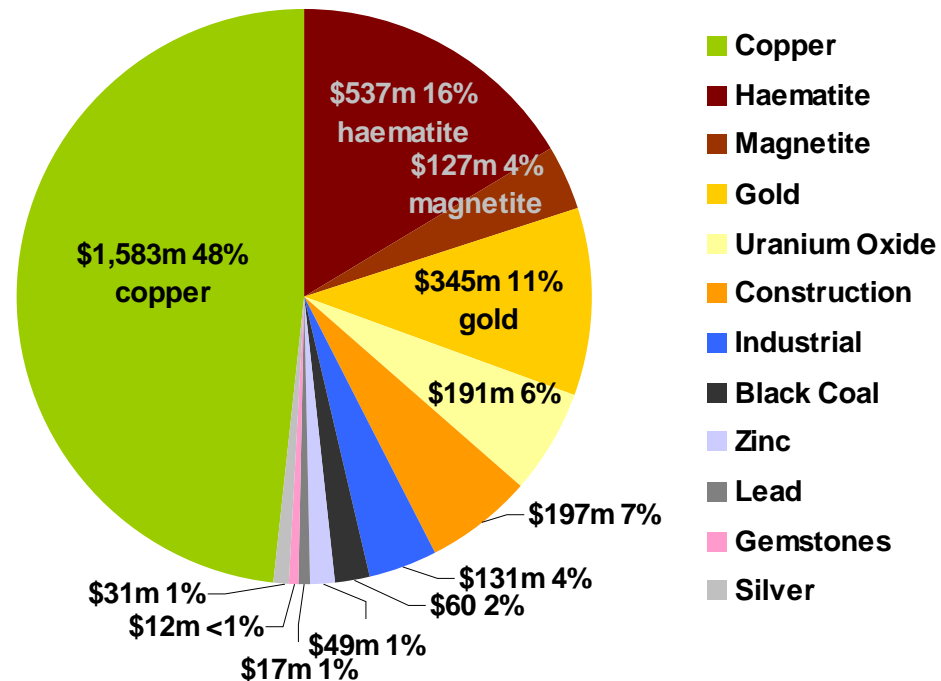
SASP target -\$3 bn by 2014 (ACHIEVED FOR FIRST TIME 2009/10)

Copper production value of **\$1.583 billion** (a significant increase of \$226m). Significant reduction in copper production at Olympic Dam buoyed by outstanding production from South Australia's new major copper mine—Prominent Hill.

Iron ore production from OneSteel's Middleback Ranges totalled **\$537 m** (year on year increase of \$137m). This increase is due to record high prices for iron ore together with increased volumes of hematite iron ore exports

Gold production totalled **\$345m** (an increase of \$84 m compared with the 2008-09 total of \$261 m). This significant increase despite lower production levels at Olympic Dam and was offset by high gold prices.

Uranium production **\$191 m** (decrease of \$165m, almost half the previous year \$357m). Due to Olympic Dam main shaft failure.

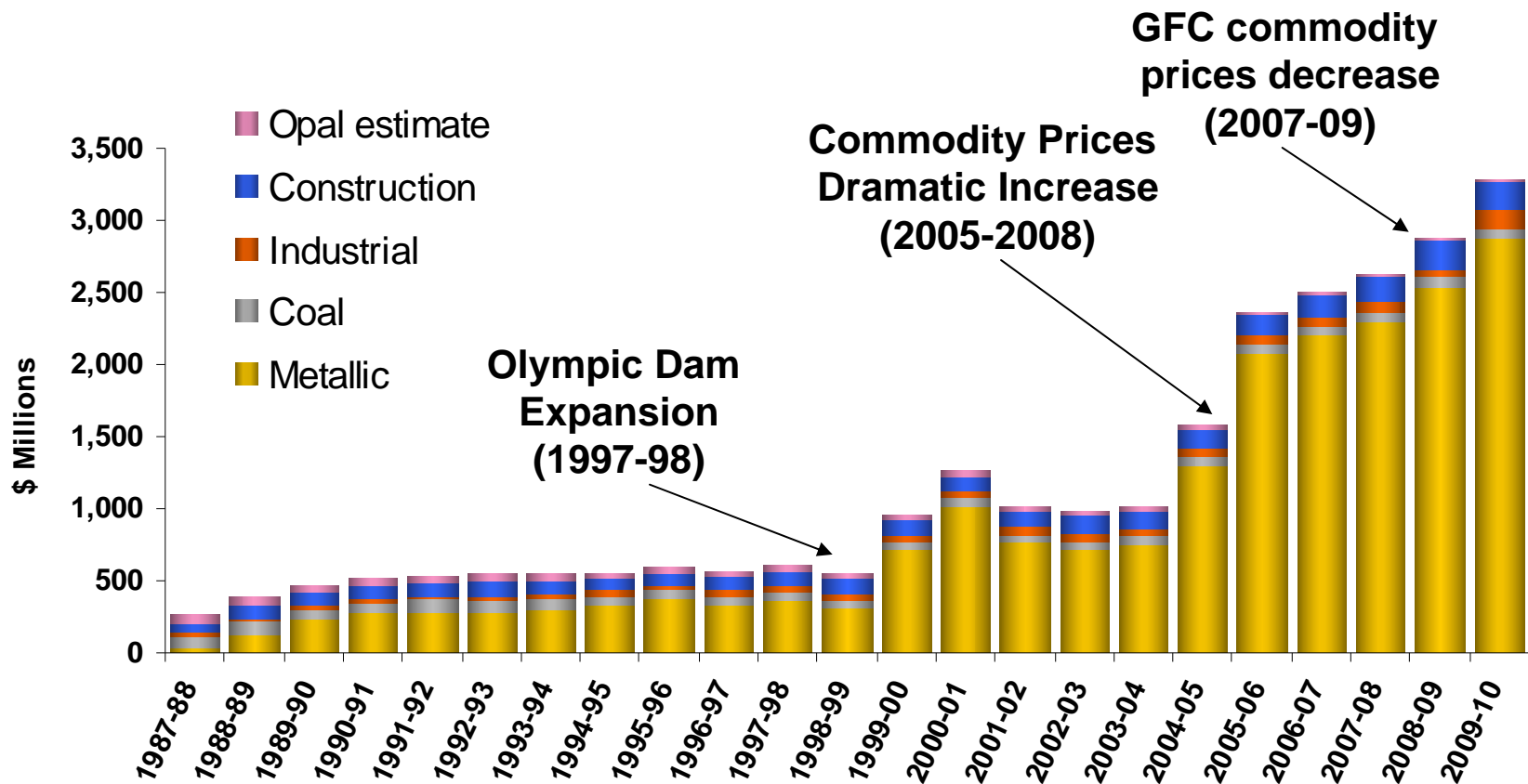


Key Measure

Mine Gate Production Value - \$3.283 bn

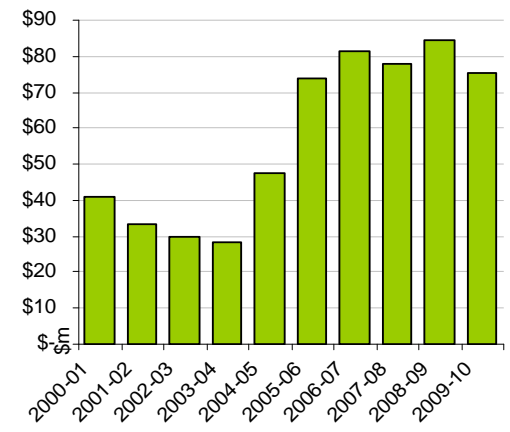
SASP target -\$3 bn by 2014 (ACHIEVED FOR FIRST TIME 2009/10)

➤ Highest production values on record



Key Measure

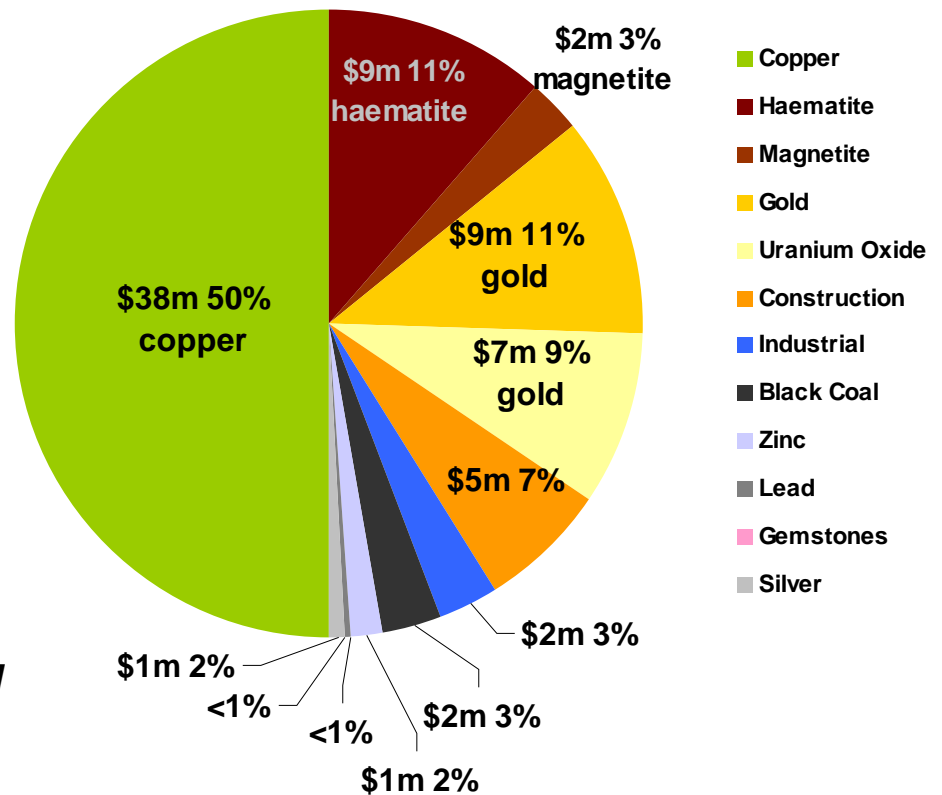
State Royalties Payable - \$75.2* m



Mineral Royalties Payable decreased by \$9.1m (10.8%). The decrease is primarily due to the shaft failure at Olympic Dam resulting in lower royalties payable on reduced production. (Fig. 5).

**NB- This figure is for royalties payable on mine gate sales during the period 2009/10 but not received during this period. In addition gross royalties are quoted and include funds hypothecated for EARF.*

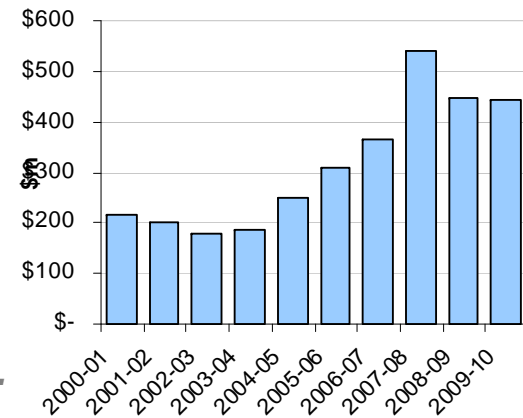
Royalty receipts received during the period as reported to treasury - totaled \$68.3m



Key Measure

Commodity Import Value - \$444.8m

This measure is calculated and subtracted from off-site refining in order to obtain a Net Off-site Refining measure.



The estimated value of ore imported by *Nyrstar* for refinement at its Port Pirie smelter. The slight decrease in commodity import value of \$1m is related to the decrease in the estimated cost of the ore.



South Australia's off-site refineries include:

- *Nyrstar's* Port Pirie lead, zinc, silver, copper and gold smelter.
- OneSteel's Whyalla steelmaking facility
- Olympic Dam processes small amount of Prominent Hill ore
- Many small industrial minerals processors



Key Measure

Net off-site refining value - \$949.6 m
SASP Target \$1 bn by 2014

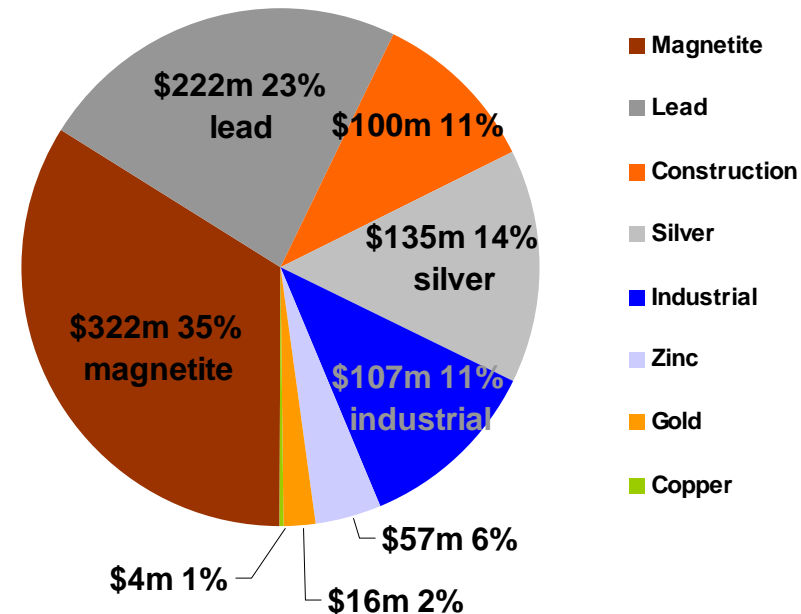
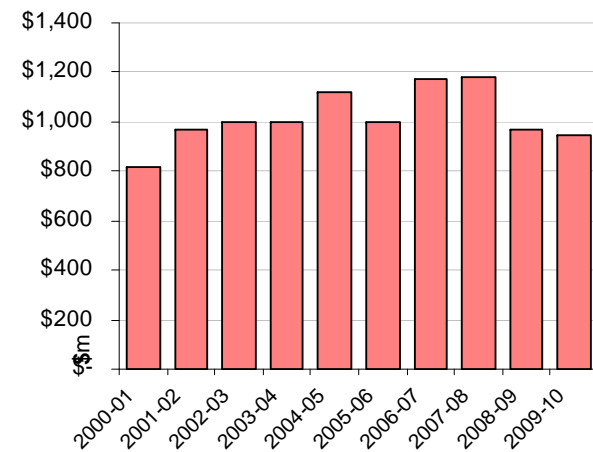
The estimated Net off-site refining value decreased by \$24m (2.4%) to \$949.6 billion.

This was the result of a reduction in the amount of steel produced at OneSteel's Whyalla Steelworks and lower volumes of lead and zinc produced at Nyrstar's Port Pirie Smelter.

Capacity has remained steady over the past 9 years and the **SASP target of \$1bn by 2014** although not achieved in 2009-10 & 2008-09 was achieved in 2007-08, 2006-07, 2004-05 & 2003-04

Net Off-site refining records the value of mineral refinement from the following sources:

- *Nyrstar's Port Pirie Smelter (Zn-Pb, Ag & Au)*
- *OneSteel's Whyalla iron-ore smelting (does not include steel manufacturing)*
- *Industrial minerals and construction materials*



Key Measure

Mineral Export value - \$2.825 bn

Mineral Exports rose by \$80m (2.9%) to reach \$2.825 billion in 2009-10.

Minerals continue to comprise the single largest export category for the State, accounting for 35% of SA's total merchandise export value.

Mineral exports represent the single major contributor to achieving the **SASP Target T1.14 of \$25 billion in State exports by 2014.**

Major commodities exported:

\$1224m - Copper

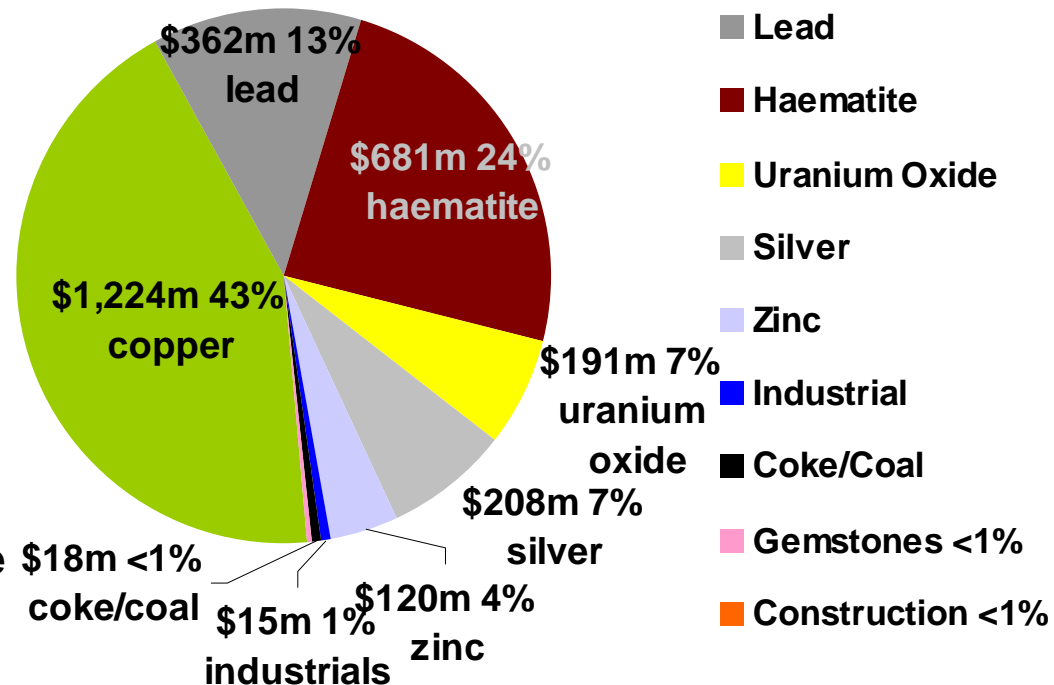
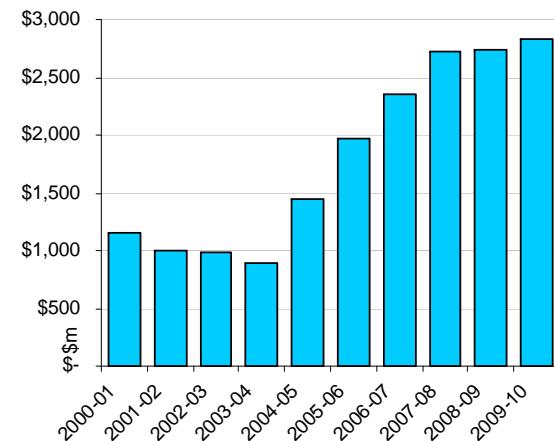
\$680m - Haematite Iron Ore

\$361m - Lead

\$208m - Silver

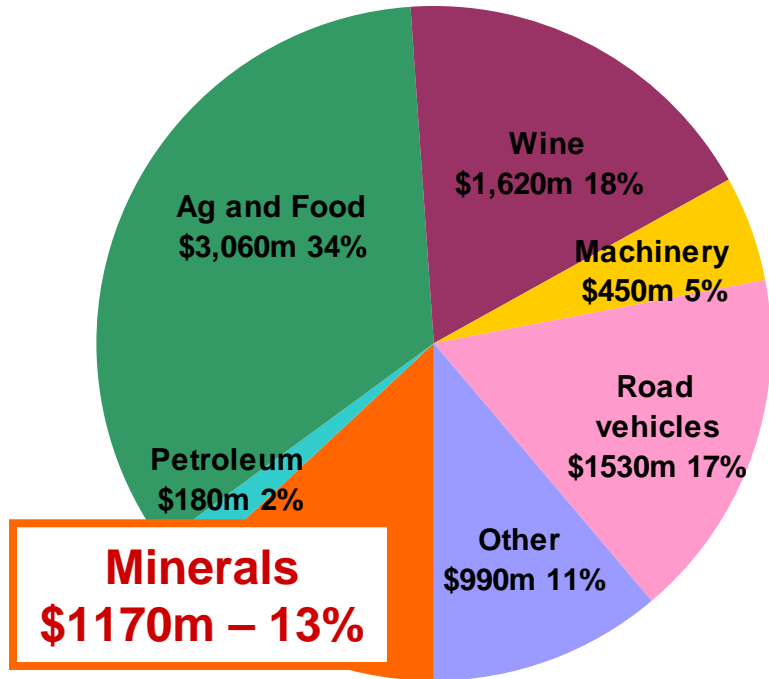
\$191m - Uranium

The majority of minerals exported are from minerals produced at the states mines but a significant portion of exports also come from refined minerals produced at Port Pirie.



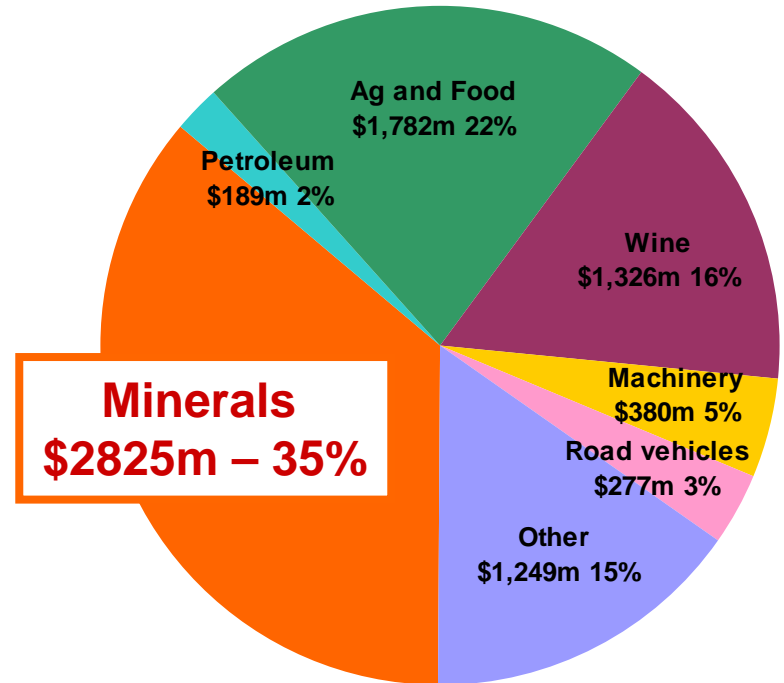
South Australian Exports – 2003/04 and 2009/10

Mineral exports are the largest single sector contributing to South Australian exports, at just over a third (35%) of total state exports of \$8.1 billion (2009/10)



2003/04

Total Exports = \$9 billion



2009/10

Total Exports = \$8.1 billion



Key Measure

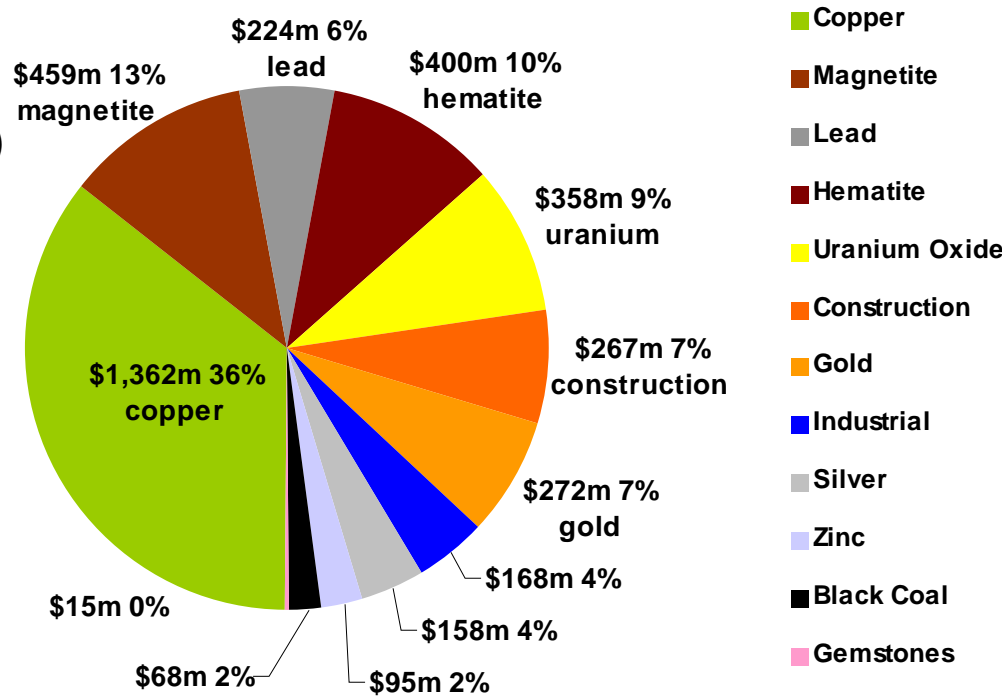
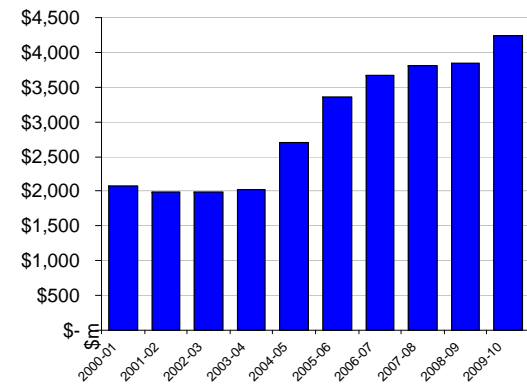
Net Mineral Industry Value - \$4152m

Net-mineral industry value (NMIV)
= Mine gate production (\$2.873m)
+ Net off-site refining (\$973m).

NMIV increased by \$40.3m (1.1%)
to \$3.846 billion.

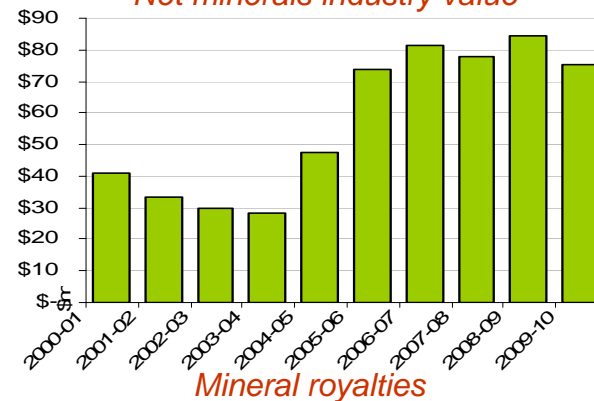
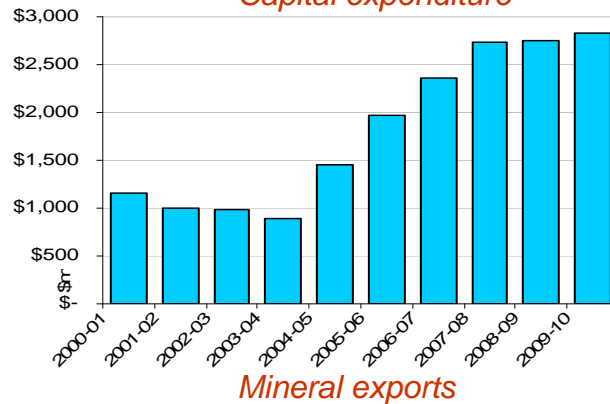
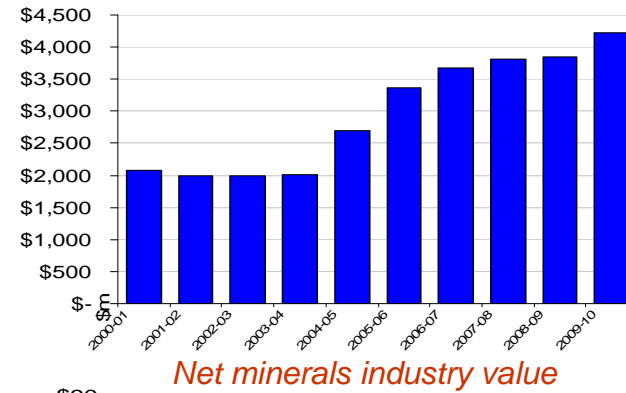
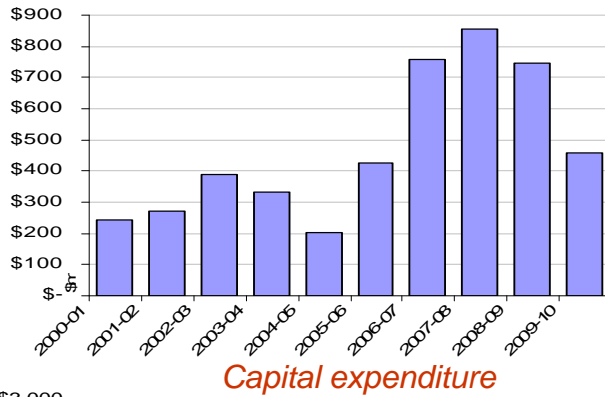
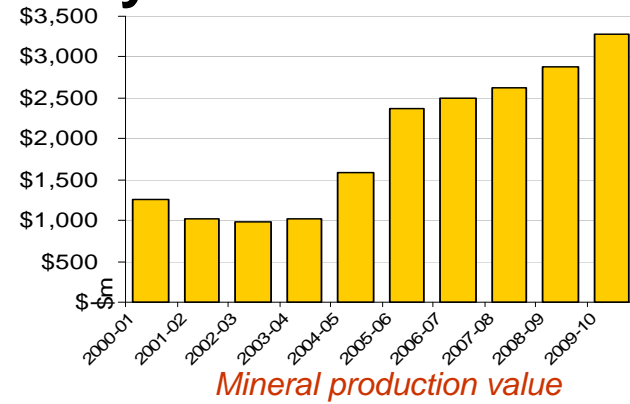
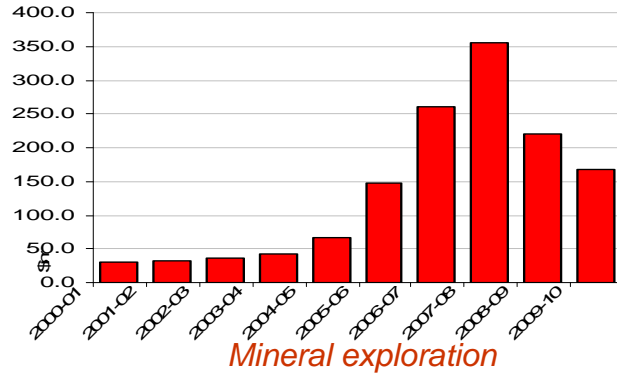
Overall industry increase despite
the GFC and the decrease in net
off site refining.

Driven by increased value of
mineral production (increased
iron ore, first copper from
Prominent Hill and higher values
for uranium and gold).



Lead indicators – influenced by fluctuating economic conditions

South Australian Minerals Industry Indicators 2001-2010



Other MINING Industry measures

Gross State Product (GSP) – Mining component

The SA Mining Industry contributed \$2.836 bn - 3.8%, (gross value added current prices) to the State's GSP (\$80 bn) in 2009-10

c.f. (Ag, forestry & fishing = \$3.5bn(4.7%) & Manufacturing = \$8.5 bn(11.4%)

Labour Force – Mining component

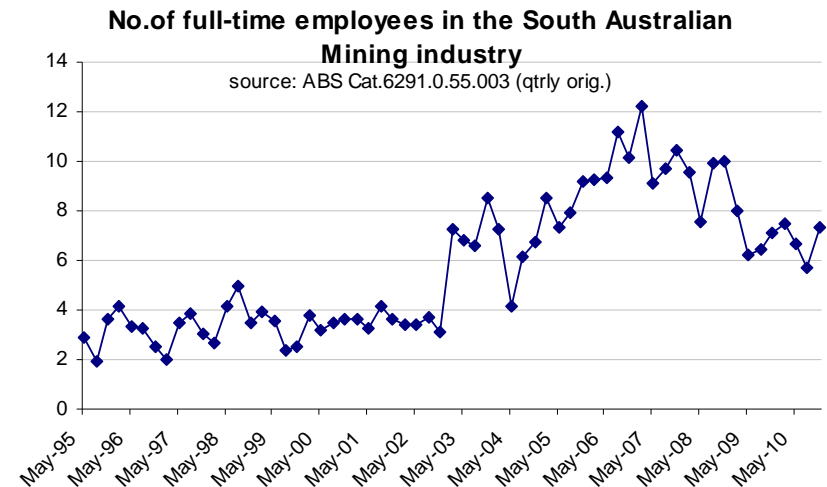
The 2010 annual average number of employees in the Mining Industry in SA remained low - 7189 for the second consecutive year despite other economic indications that the economy is recovering from the GFC. This lower than expected annual mining employment figure reported by the ABS for 2010 is thought to be related to:

A reduction in workforce due to the Clarke shaft outage at the state's major producing mine - Olympic Dam.

Mineral and Petroleum exploration expenditure was lower for 2009-10 quarter indicating lower levels of activity and therefore fewer people were likely to have been employed in this sector of the mining industry during this period.

Drop in workforce at Jacinth-Ambrosia post mine construction (from 280 to 100).

Cooper Basin floods in 2010 severely restricting petroleum industry activities.



Outlook 2010-11

In 2010-11 'lag' value-chain areas of production and export will be positively influenced by increased volumes from existing mines, inaugural production from new mines, and sustained high commodity prices for copper, gold, iron ore, uranium and heavy mineral sands:

- OneSteel - increased haematite iron ore exports to be sustained (6 Mtpa)
- Prominent Hill – full year production of copper, gold and silver
- Jacinth/Ambrosia – first full years production
- Olympic Dam – return to near capacity production of copper, uranium, gold and silver as a result of haulage shaft repair completion in mid-2010
- Increased mineral exports are anticipated to follow the expected increases in production resulting in increased iron ore, copper, gold, uranium and silver exports.

Limited growth is expected in the 'lead' value-chain measure - capital expenditure

- Large projects such as Prominent Hill (\$1175m) and Jacinth-Ambrosia (\$390m) have completed their capital spending.
- Large capital projects (>\$200m) don't occur every year, however there are 20-30 smaller capital projects that PIRSA is working with developers on to ensure they progress within timeframes.
- The upside is that as these large mineral projects have completed their capital spending and have gone into production that the 'lag' value chain measures mineral production/exports, royalties, will translate into long term benefits for the state including an expanded service industry and jobs.



South Australian Strategic Plan (SASP) Targets

PACE

plan for accelerating exploration

HOT PROSPECTS



Government of South Australia
Primary Industries and Resources SA

www.minerals.pir.sa.gov.au

SASP Targets

- The industry remains on-track to achieving and maintaining the current SASP Targets, with continued steady results expected in exploration, production, processing and exports.

CURRENT SASP TARGETS

SASP TARGET T1.17 - Exploration to 2010, >\$100M (2009-10 \$167.9M)

SASP TARGET T1.19 – Processing by 2014, \$1B (2009-10 \$869.8M)

SASP TARGET T1.18 - Production by 2014, \$3B (2009-10 \$3.283B)

**SASP TARGET T1.14 – Exports by 2014, Contribute to \$25B SA total
(2009-10 \$2.824B minerals /\$8.1B state)**

NEW TARGETS TO BE RELEASED EARLY 2011

