

# South Australia's Minerals Scorecard 2010–11

**Peta Abbot**  
*Mineral Industry Analyst*  
**Minerals and Energy Resources**  
**DMITRE**

# ***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 two minerals strategic development targets (South Australia’s Strategic Plan, 2007, 2011), 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 and Food Scorecard
- Measure progress over time
- Assist Industry and Government in development and planning

# ***The Minerals Industry ScoreCard***

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

## **SCORECARD 2010-11 REPORTS AGAINST 2007 TARGETS**

### **T1.17 Minerals exploration:**

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

### **T1.18 Minerals production:**

- Increase the value of minerals production to \$3bn by 2014

### **T1.19 Minerals processing:**

- Increase the value of minerals processing to \$1bn by 2014

## **SCORECARD 2011-12 REPORTS AGAINST 2011 TARGETS**

### **TARGET 41 – Minerals Exploration:**

- Exploration expenditure in South Australia to be maintained in excess of \$200m per annum to 2015

### **TARGET 42 – Minerals Production and Processing:**

- Increase the value of minerals production and processing to \$10bn by 2020

# Minerals Industry Value Chain – *Key Measures*



# 2010-11 Minerals Scorecard – Summary Table –

## Key Measures

SASP Target 41  
maintain \$200m  
by 2020

Sub target 42 \$8.2  
bn by 2020

Sub target 42  
\$1.8 bn by 2020

SASP Target 37  
contribute to  
(\$25b state  
exports  
by 2020)

SASP Target 42  
\$10b by 2020

MINERAL CATEGORY	MINERAL TENEMENT RENT EXPENDITURE	PUBLIC TARGETED GEO-INFORMATION EXPENDITURE	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
<b>METALLIC MINERALS</b>										
Copper	-	-	101,000,000	-	2,462,236,725	69,656,515	26,505,852	5,027,607	2,311,634,469	2,467,264,332
Gold	-	-	4,000,000	-	664,456,920	15,292,415	18,007,756	15,441,736	3,283	679,898,656
Silver	-	-	1,000,000	-	47,339,720	1,267,671	220,268,734	220,268,734	115,352,516	267,608,454
Iron ore - haematite	-	-	48,000,000	-	773,679,316	10,663,231	-	-	950,533,671	773,679,316
Iron ore - magnetite	-	-	-	-	167,090,351	2,160,742	-	256,297,251	-	423,387,602
Lead	-	-	1,000,000	-	16,418,240	246,274	239,378,376	239,378,376	450,428,166	255,796,616
Zinc	-	-	1,000,000	-	25,489,789	389,561	33,758,947	33,758,947	74,677,936	59,248,736
Nickel	-	-	1,000,000	-	-	-	-	-	-	-
Other Metallics	-	-	42,700,000	-	-	-	-	-	120,254	-
<b>TOTAL</b>	-	-	<b>199,700,000</b>	-	<b>4,156,711,061</b>	<b>99,676,409</b>	<b>537,919,665</b>	<b>770,172,651</b>	<b>3,902,750,295</b>	<b>4,926,883,712</b>
<b>ENERGY MINERALS</b>										
Uranium Oxide	-	-	54,000,000	-	268,917,316	9,412,106	-	-	268,917,316	268,917,316
Black Coal	-	-	1,000,000	-	71,618,809	1,765,864	-	-	-	71,618,809
Other Coal	-	-	-	-	-	-	-	-	33,690,590	-
<b>TOTAL</b>	-	-	<b>55,000,000</b>	-	<b>340,536,125</b>	<b>11,177,970</b>	-	-	<b>302,607,906</b>	<b>340,536,125</b>
<b>INDUSTRIAL MINERALS</b>										
Dolomite	-	-	-	-	5,274,440	184,605	-	3,692,108	-	8,966,548
Gypsum	-	-	-	-	9,372,536	326,605	-	30,620,388	4,012,007	39,992,923
Heavy Mineral Concentrate	-	-	-	-	182,218,734	2,733,281	-	-	-	182,218,734
Ilmenite	-	-	-	-	-	-	-	-	-	-
Leucoxene	-	-	-	-	-	-	-	-	-	-
Limestone	-	-	-	-	31,130,559	92,443	-	52,774,177	-	83,904,736
Rutile	-	-	-	-	-	-	-	-	-	-
Salt	-	-	-	-	21,892,884	510,896	-	9,093,003	2,912,773	12,799,881
Silica	-	-	-	-	12,537,926	9,589	-	12,094,096	-	24,632,023
Zircon	-	-	-	-	-	-	-	-	-	-
Other Industrial Materials	-	-	-	-	3,299,964	214,643	-	-	8,006,266	3,299,964
<b>INDUSTRIALS TOTAL</b>	-	-	-	-	<b>265,727,044</b>	<b>4,072,062</b>	-	<b>90,087,766</b>	<b>14,931,046</b>	<b>355,814,809</b>
<b>CONSTRUCTION MATERIALS</b>										
Dimension Stone	-	-	-	-	4,743,151	40,499	-	7,630,767	1,769,816	12,373,918
Dolomite-Limestone	-	-	-	-	95,974,714	1,870,549	-	45,564,686	-	141,539,400
Quartzite-Sandstone	-	-	-	-	32,935,695	788,976	-	1,304,781	-	31,630,914
Natural Sand	-	-	-	-	28,108,571	1,106,537	-	35,122,123	17,955	63,230,694
Other Rock Materials	-	-	-	-	23,081,729	517,226	-	-	2,348	23,081,729
Other Clay Products	-	-	-	-	3,980,335	157,508	-	2,783,795	-	6,764,130
Other Construction Materials	-	-	-	-	-	-	-	-	-	-
<b>CONSTRUCTION TOTAL</b>	-	-	-	-	<b>188,824,194</b>	<b>4,481,296</b>	-	<b>89,796,590</b>	<b>1,790,119</b>	<b>278,620,783</b>
<b>GEMSTONES</b>										
Opal	-	-	-	-	11,644,000	-	-	-	2,737,346	11,644,000
Diamonds	-	-	-	-	-	-	-	-	149,296	-
Other	-	-	-	-	25,075	878	-	-	-	25,075
<b>TOTAL</b>	-	-	-	-	<b>11,669,075</b>	<b>878</b>	-	-	<b>2,886,642</b>	<b>11,669,075</b>
<i>Not Elsewhere Classified</i>				530,120,000						
<b>ALL MINERALS</b>	<b>7,277,915</b>	<b>2,451,000</b>	<b>254,700,000</b>	<b>530,120,000</b>	<b>4,963,467,498</b>	<b>119,408,615</b>	<b>537,919,665</b>	<b>950,057,007</b>	<b>4,224,966,008</b>	<b>5,913,524,505</b>

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



**PACE** 2020  
exploration  
mining  
energy  
global



Government of South Australia  
Department for Manufacturing,  
Innovation, Trade, Resources and Energy

# Minerals Scorecard 2009–10 – Summary Data

Key Measure	Data Source	2010-11 \$m	2009-10 \$m	Change direction	Change \$m	% change
Mineral Tenement Rent Expenditure	PIRSA – TMS data	\$7.28	\$6.44	↑	\$0.8	12.9%
Public Targeted Geo-information Expenditure	PIRSA	\$2.45	\$3.14	↓	\$0.7	-18.3%
Private Exploration Expenditure (T1.17)	ABS Cat. 8412	\$254.7	\$167.9	↑	\$86.8	51.7%
New Capital Expenditure	ABS Cat. 5625	\$530	\$457	↑	\$73	16.0%
Mine Gate Production Value (T1.18)	PIRSA MER Report Book 2009/21	\$4 963	\$3283	↑	\$1680	51.2%
Royalties payable	PIRSA	\$119.4	\$75.2 <sup>a</sup>	↑	\$44	58.7%
Commodity Import Value	PIRSA	\$537.9	\$444.8	↑	\$93.1	17%
Net off-site Refining Value (T1.19)	PIRSA estimate	\$950	\$949	↑	\$1	<1%
Commodity Export Value	ABS Cat. 5368 and PIRSA	\$4226	\$2825	↑	\$1401	49.6%
Net Mineral Industry Value (T1.18 + T1.19)	PIRSA	\$5913	\$4232	↑	\$1681	28%

# Factors influencing the 2010–11 Minerals ScoreCard

The continued success of the Minerals industry in South Australia in 2010–11 was intrinsically linked to, and driven by:

- **The governments PACE initiative**: credited with providing incentives for stimulating and maintaining exploration. (e.g.. South Australia was the only Australian State in which greenfields exploration expenditure was greater than brownfields).
- **Exploration discoveries** (evidence of advanced exploration –12 maiden resource figures released to the ASX) during the period that have maintained investor confidence and confirm the State’s mineral endowment.
- The **stable and progressive regulatory environment** ensured a steady stream of projects progressing to development stage and capital expenditure, which increased despite no single large capital projects during this period.
- The **global demand** for South Australian mineral resources remains high evident by increasing international investment in SA Mineral projects.
- **New mines, mine expansions** and **sustained high commodity prices** (particularly copper, iron ore and gold), have led to increased production and exports.

2010-11

High  
commodity  
prices  
sustained

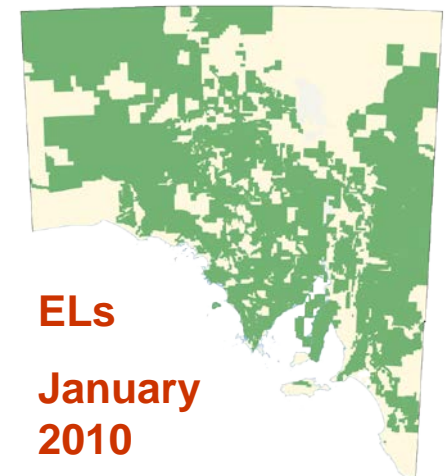
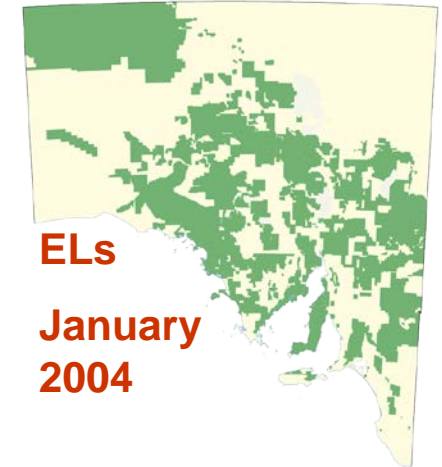
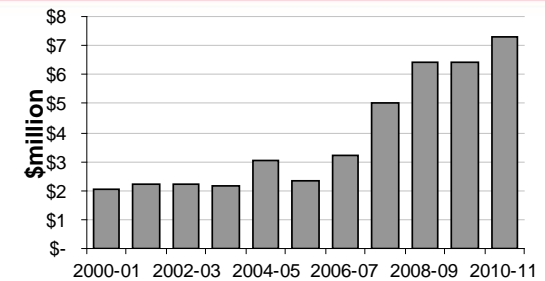


# Mineral Tenement Rent Expenditure

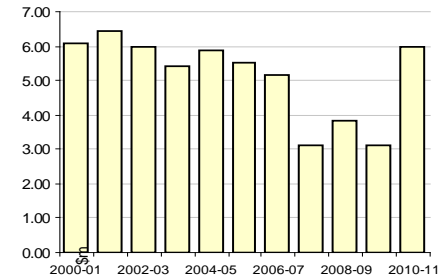
## \$6.44m

Mineral Tenement Rent Expenditure increased from \$6.44m in 2009-10 by \$0.8m (12.9%), to \$7.28m in 2010-11.

- 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)



## Public Targeted Geo-information expenditure \$6.0 m



Government funded initiatives play a crucial role in stimulating mineral exploration expenditure.

Current Initiative:

- *PACE 2020* – PACE Exploration, PACE Global and PACE Mining (\$10.2m)

Past Initiatives:

- 2004–2011 – PACE (\$30.9)
- 1998–2002 – TEISA (\$10m)
- 1992–1996 – SAEI (\$23.5m)



**PACE** 2020 exploration  
mining  
energy  
global

**PACE DISCOVERY DRILLING 2012**  
Call For Project Proposals

OPENS: 2 December 2011  
CLOSES 31 January 2012

for Further information call  
+61 8 8463 3159

Download more information [HERE](#)

Completed Proposals to:  
Miles Davies  
General Manager – PACE 2020  
DMITRE  
Level 4, 101 Grenfell Street  
Adelaide SA 5000  
Phone: +61 8 8463 3159  
Miles.Davies@sa.gov.au



Government  
of South Australia  
Department for Manufacturing,  
Innovation, Trade,  
Resources and Energy



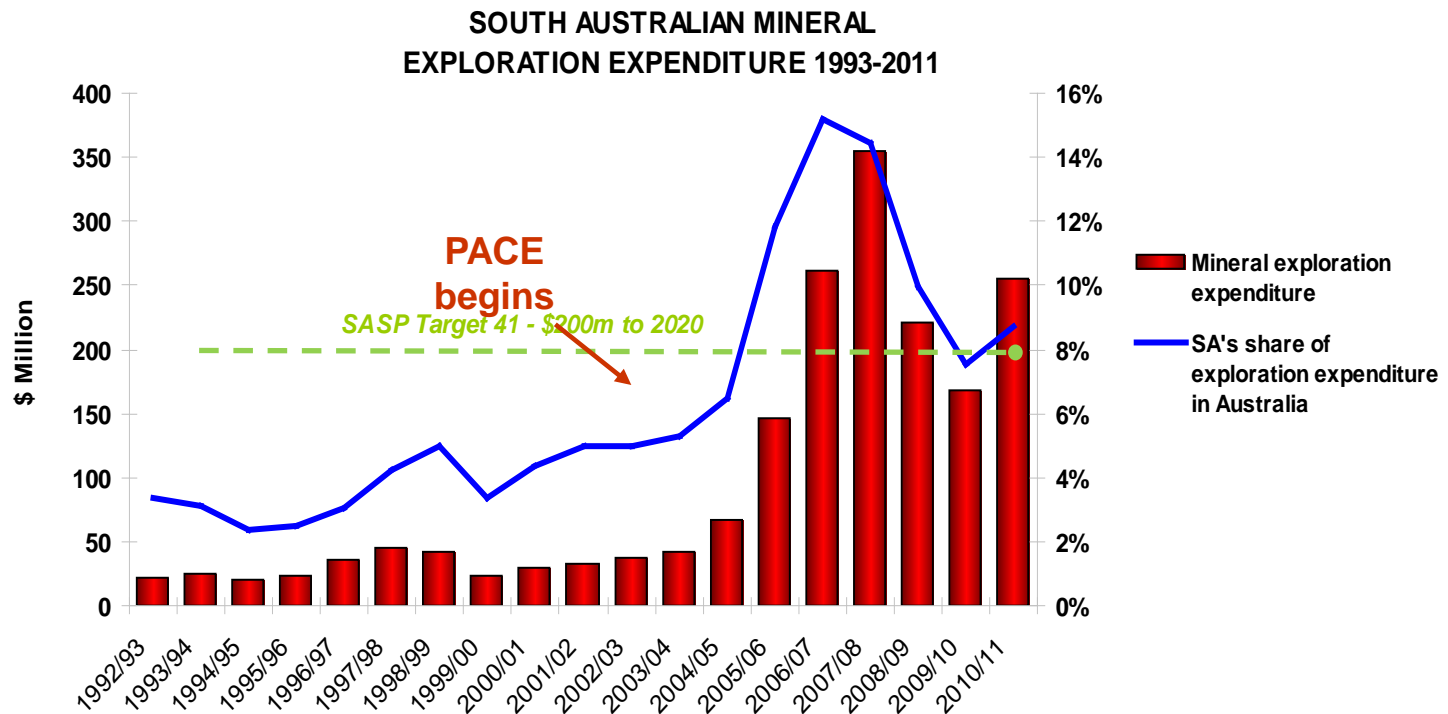
Government of South Australia  
Department for Manufacturing,  
Innovation, Trade, Resources and Energy

# Private Exploration Expenditure – \$254.7m

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

**NEW SASP Target 41 – maintain \$200m until 2015**

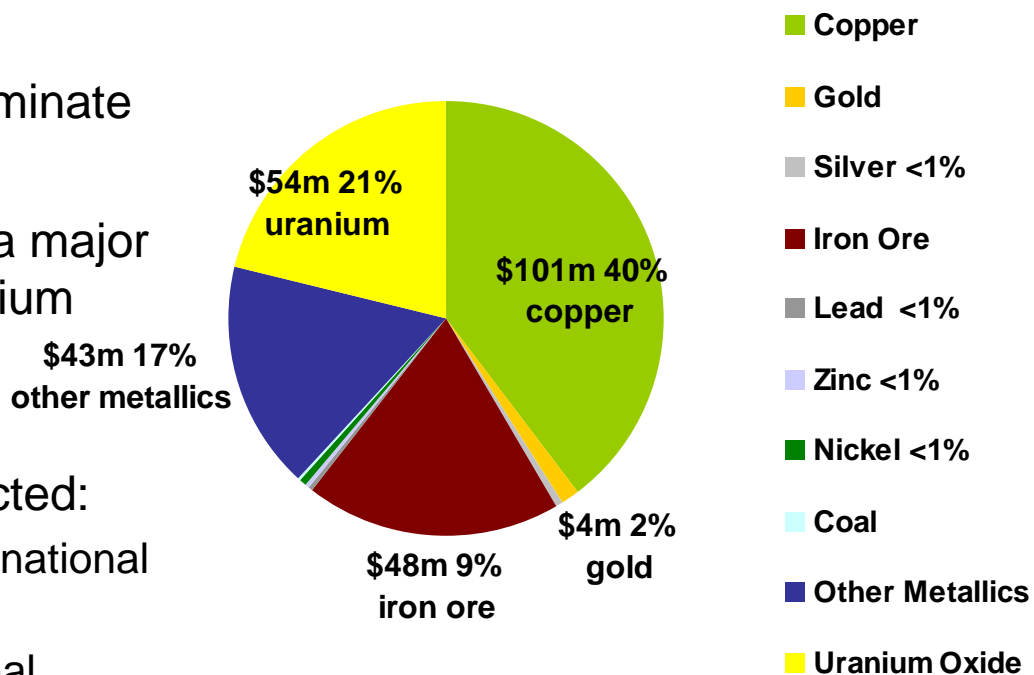
- Increased from \$167.9m in 2009-10 by \$86.8m (51.7%) to \$254.7 m in 2010-11
- Private mineral exploration has exceeded the SASP target: T1.17 of \$100m for the fifth successive year
- South Australia's share of national expenditure in 2010–11 was 8.7% c.f. 15.2% 4 years ago



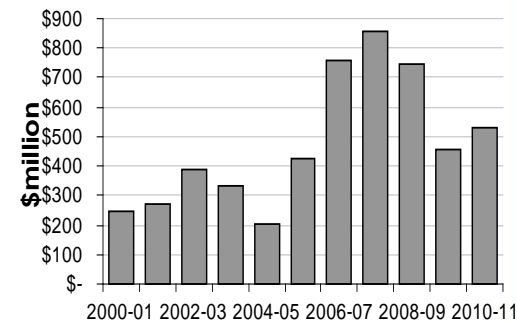
# Private Exploration Expenditure – \$254.7m

Mineral Exploration Expenditure –  
Copper, Uranium and Iron Ore dominate

- South Australia continues to be a major destination for Copper and Uranium exploration
- In 2010-11 South Australia attracted:
  - Almost a third, \$101m (31%) of national Copper Exploration
  - A quarter, \$54m (25%) of national Uranium Exploration

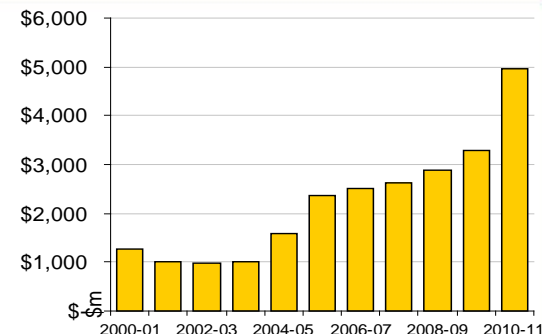


## Private New Capital Expenditure – \$530m



- Increased from \$457 million in 2009-10 by \$73m (16%) to \$530m in 2010-11
- This increase occurred as a result of several small to mid-size capital projects were constructed
- New Capital Expenditure for the 2010–11 has primarily been associated with construction of:
  - Kanmantoo (Hillgrove Resources) – \$144m copper-gold mine
  - Honeymoon (Uranium One) – \$118m uranium mine
  - Ankata (OZ Minerals) – \$135m expansion of Prominent Hill copper-gold mine
  - Cairn Hill (IMX Resources) – \$15m iron ore (magnetite – copper – gold) mine

***Mine Gate Production Value 2010-11:\$4.96bn***  
***SASP target T1.18 – \$3bn by 2014***  
***(achieved for the second successive year)***

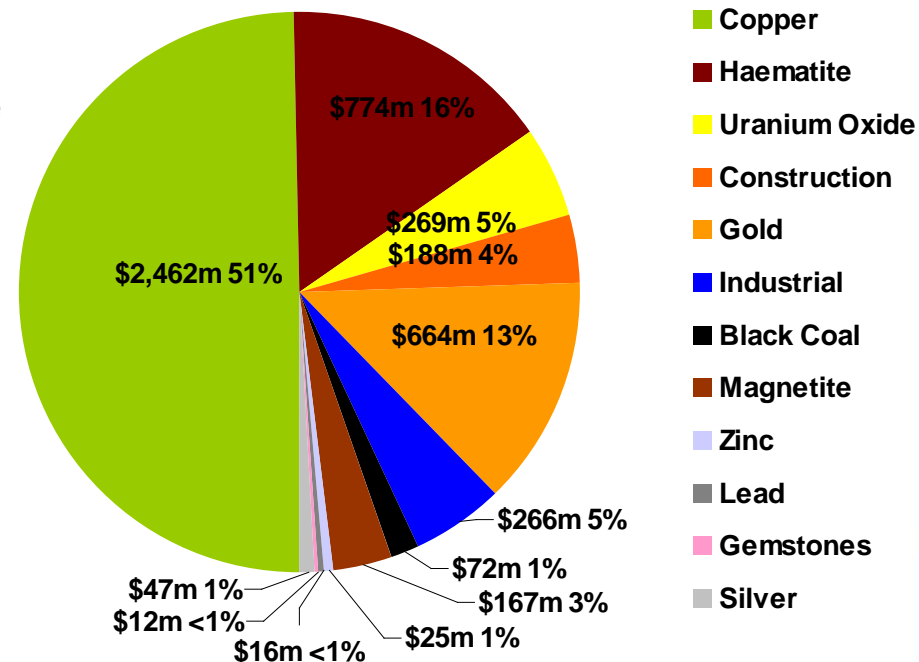


- Mineral production rose significantly from \$3.283 billion in 2009-10 by \$1.680 billion (51.2%), to reach \$4.96 billion in 2010-11
- Growth due to:
  - Sustained high commodity prices (copper, iron ore and gold)
  - Return to near capacity production at Olympic Dam coupled with the second full year production at Prominent Hill and increased production of haematite from the Middleback Ranges
- The SASP target was surpassed by \$2 billion indicating that it is on track to achieving NEW SASP Target 42, released in September, of \$10bn by 2020 of combined mineral production and processing, of which production is currently the major component

# Mine Gate Production Value – \$4.96bn

**SASP target – \$3bn by 2014 (achieved for second successive year)**

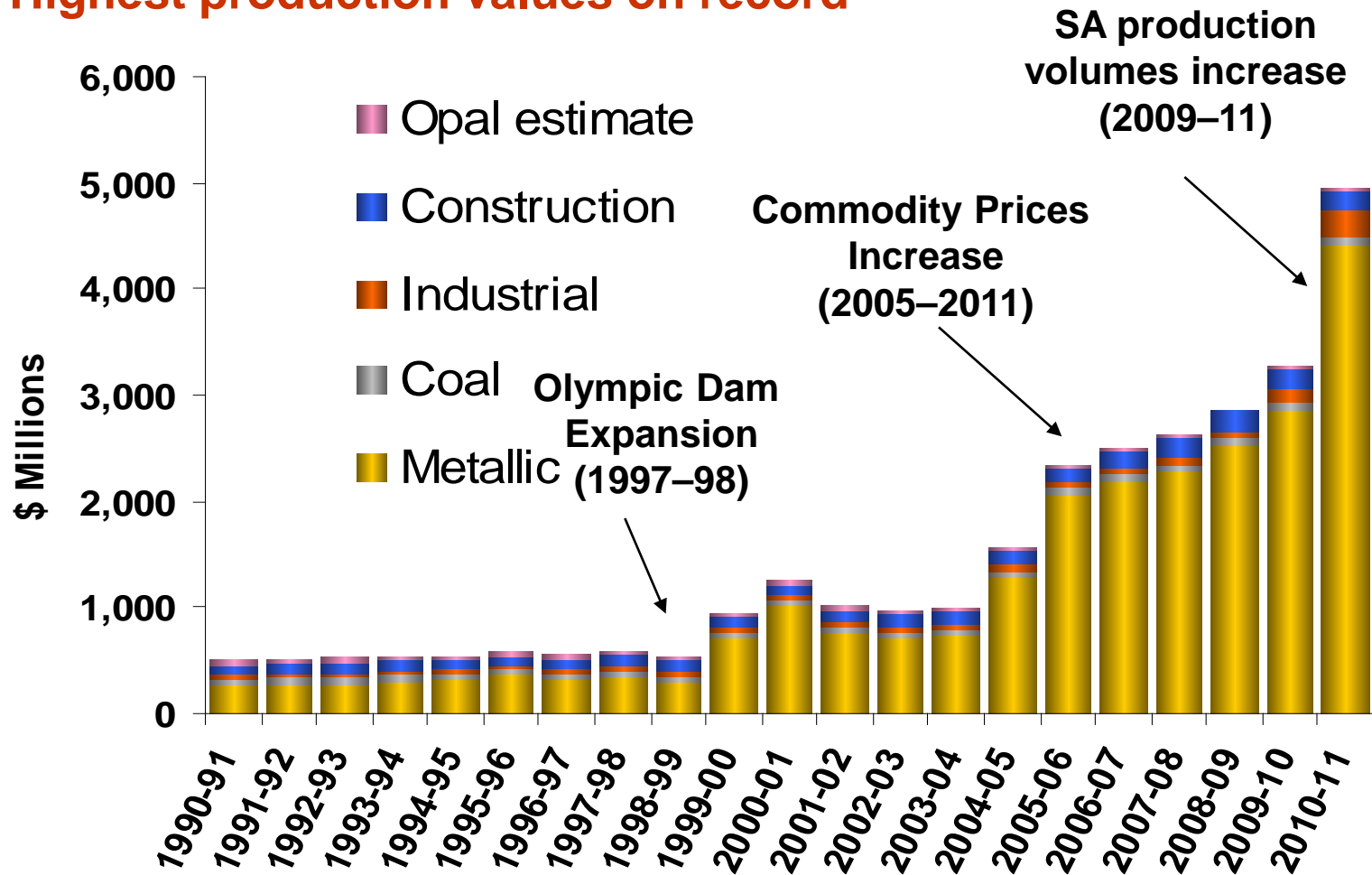
- Copper production value of \$2.462bn (294 140 t) (a significant increase of \$879m). Vast majority from Olympic Dam and Prominent Hill.
- Iron ore production from OneSteel's Middleback Ranges totaled \$941m (increase of \$277m). Due to record high prices for iron ore volumes have remained steady from OneSteel but increased overall due to Cairn Hill magnetite production
- Gold production totaled \$665m (473 000 oz) (an increase of \$319m). This significant increase due to very high gold prices and return to production at Olympic Dam
- Uranium production \$269m (4 276 t). Increase due to return to near capacity production at Olympic Dam



# Mine Gate Production Value – \$4.96 bn

SASP target – \$3bn by 2014 (achieved for second successive year)

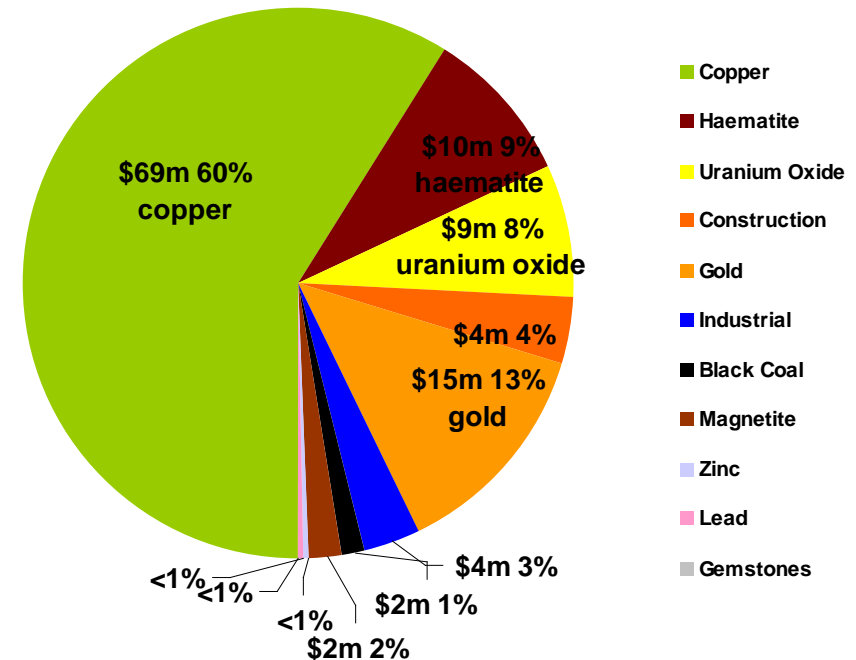
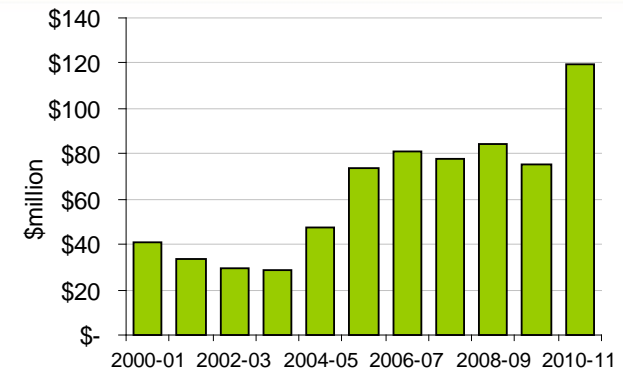
- Highest production values on record



## State Royalties Payable – \$119.4\*m

- Mineral Royalties Payable increased to \$119.4m, an increase of \$44.2m (51%). Due to increase in mineral production from new and existing mines
- Royalty receipts received during the period as reported to treasury – totaled \$102.1m

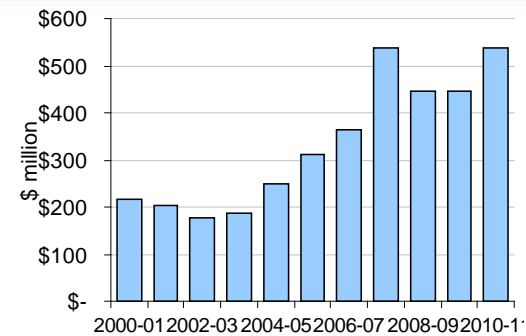
*\*NB—This figure is for royalties payable on mine gate sales during the period 2010/11 but not received during this period. In addition gross royalties are quoted and include funds hypothecated for EARF*



## Commodity Import Value – \$356.7m

- The estimated value of ore imported by Nyrstar for refinement at its Port Pirie smelter. The decrease in commodity import value of \$88m 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

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

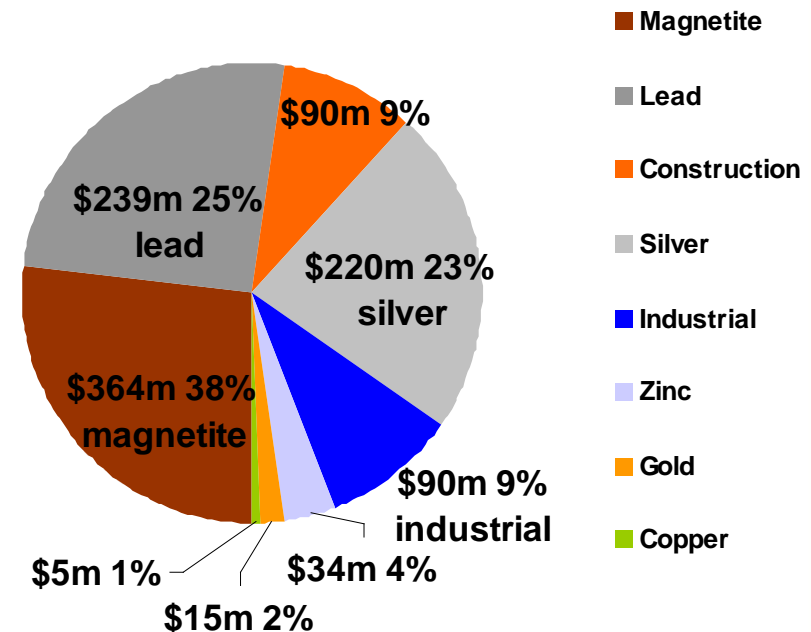
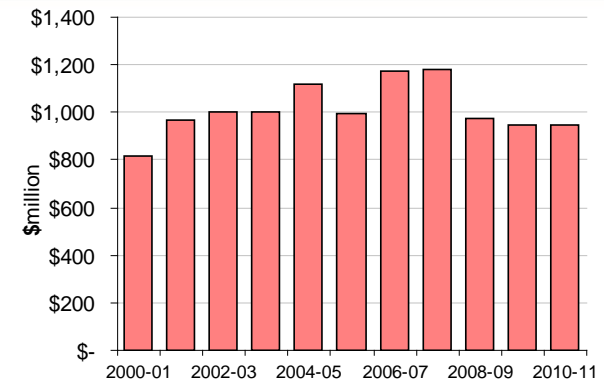


## **Net off-site refining value – \$950m** **SASP Target T1.19 – \$1bn by 2014**

The estimated Net off-site refining value increased marginally by \$0.4m (<1%) to \$950m

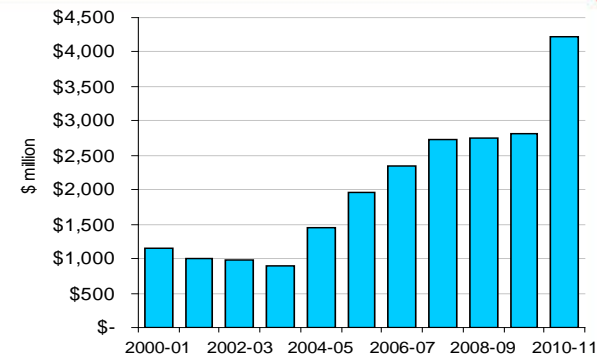
This was the result of a reduction in the amount of steel produced at OneSteel's Whyalla Steelworks for the second successive year and lower volumes of lead and zinc produced at Nyrstar's Port Pirie Smelter.

Capacity has remained steady over the past 9 years and the SASP target of \$1bn by 2014 although not achieved in the past three years was achieved in 2007–08, 2006–07, 2004–05 and 2003–04



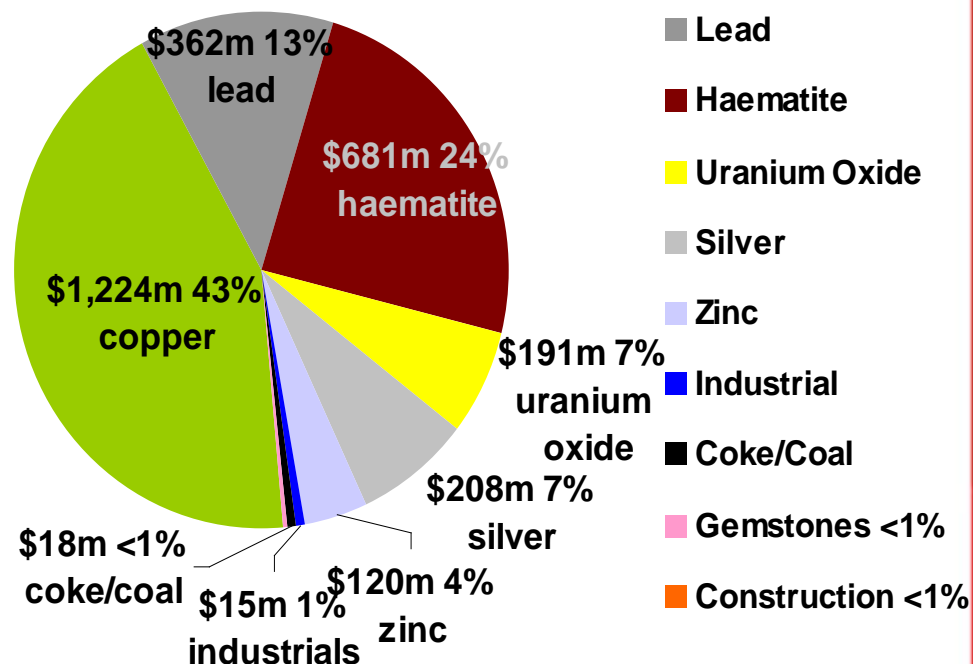
# Mineral Export Value – \$4.225bn

Mineral Exports rose considerably from \$2.825 billion in 2009-10 by \$1.5 bn (49.6%) to reach \$4.226 billion in 2010-11



Major commodities exported:

- \$2312m – Copper
- \$951m – Haematite Iron Ore
- \$450m – Lead
- \$115m – Silver
- \$289m – Uranium

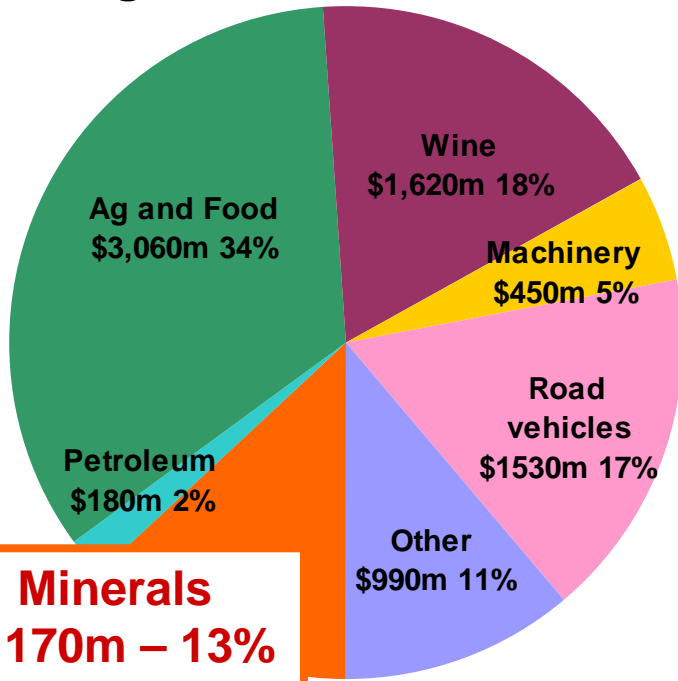


The majority of minerals exported are from the states mines but a significant portion of exports also come from refined minerals produced at Port Pirie.

# South Australian Exports – 2003–04 and 2010/11

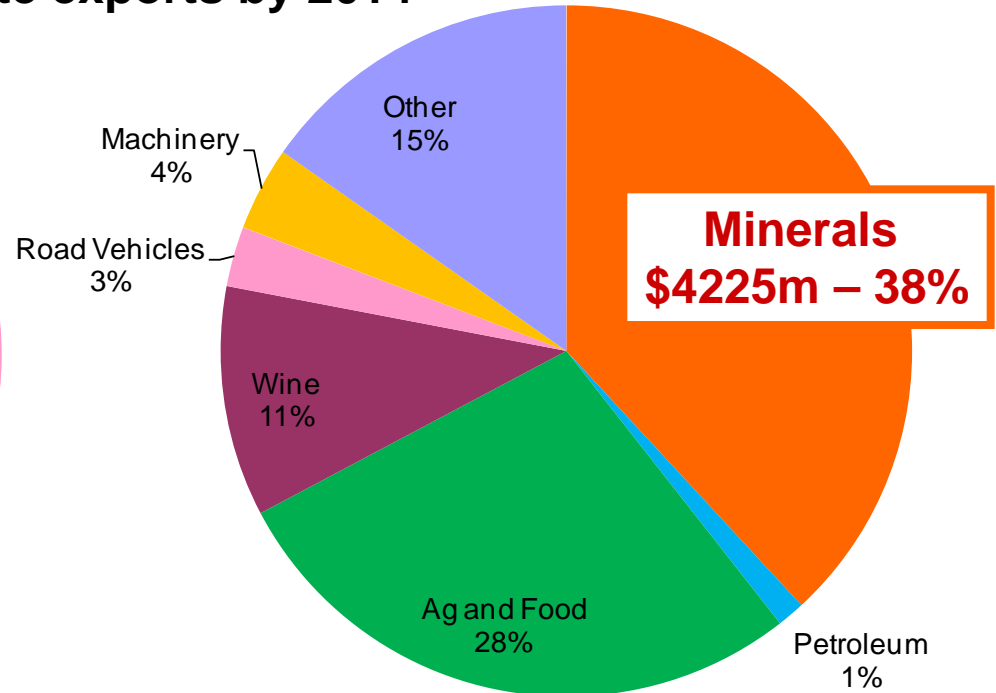
**Mineral exports** are the largest single sector contributing to South Australian exports, at just over a third (38%) of total state exports of \$11.2bn (2010-11)

Mineral exports are the major contributor to achieving:  
**SASP Target T1.14 of \$25bn in State exports by 2014**



**2003-04**

**Total Exports = \$9 billion**



**2010-11**

**Total Exports = \$11.2 billion**

Source: ABS Cat No 1307 unpublished



**PACE** 2020  
 exploration  
 mining  
 energy  
 global



Government of South Australia  
 Department for Manufacturing,  
 Innovation, Trade, Resources and Energy

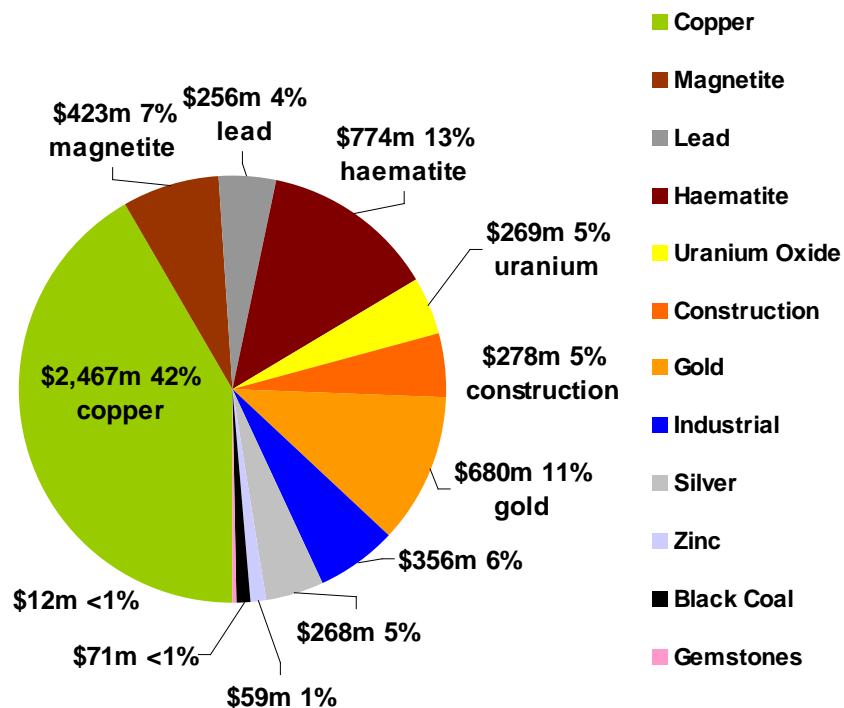
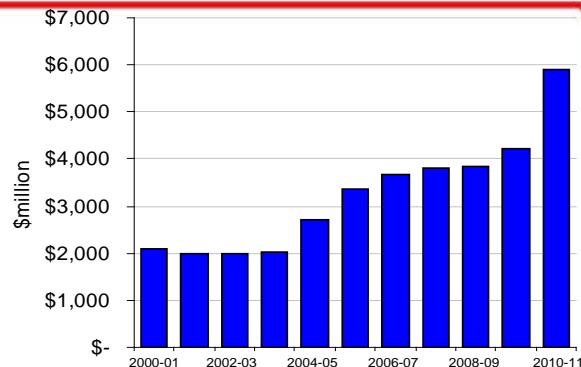
# Net Mineral Industry Value – \$5.914bn

**NEW SASP Target – \$10bn by 2020**

Net-mineral industry value (NMIV)

= Mine gate production (\$4.224bn) + Net off-site refining (\$950m)

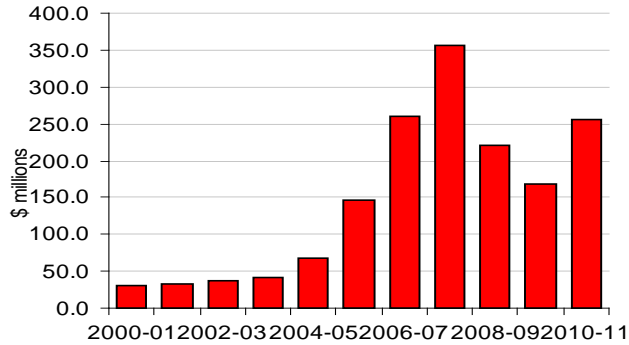
- NMIV increased from \$4.232 billion in 2009-10 by \$1 680 m (39.7%) to \$5.913 billion in 2010-11.
- Due to increased minerals production and steady net off-site refining.
- **The 2010–11 achievement of ~\$6bn places the State in a good position to achieve the target of \$10bn by 2020**



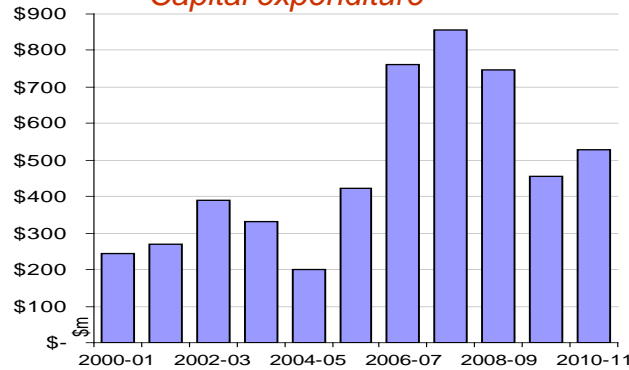
# South Australian Minerals Industry Indicators 2001–2011

Lead indicators – influenced by fluctuating economic conditions

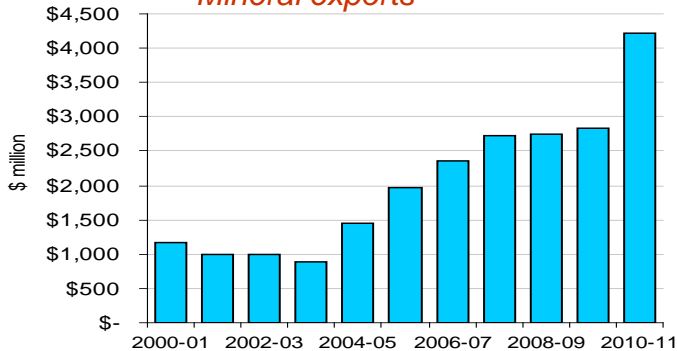
Mineral exploration



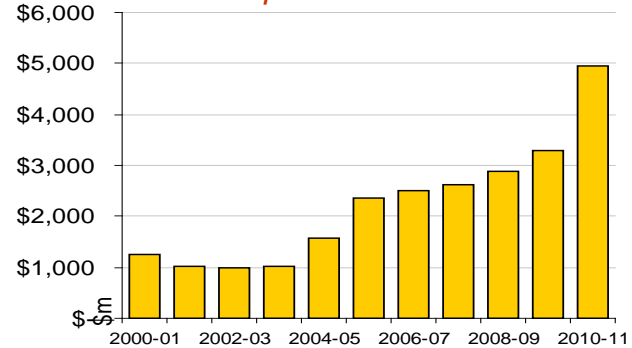
Capital expenditure



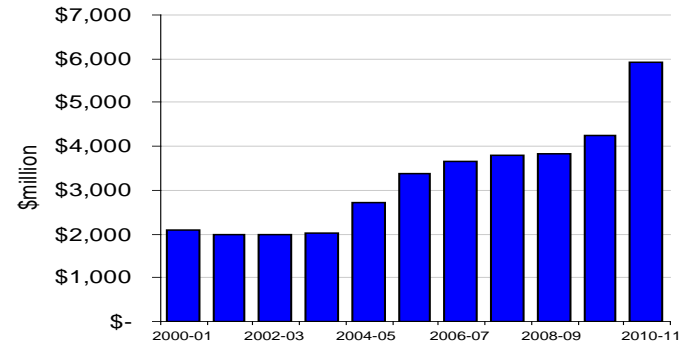
Mineral exports



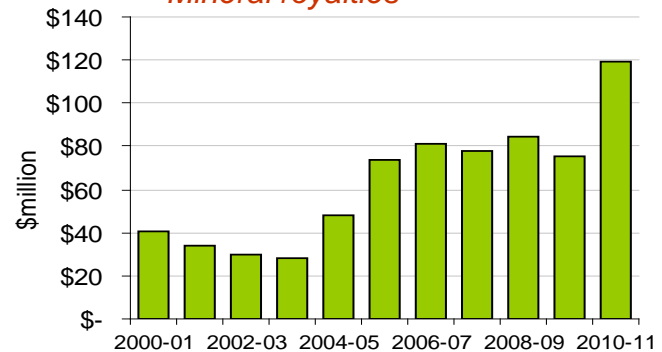
Mineral production value



Net minerals industry value



Mineral royalties



# ***Other MINING Industry measures***

## **Gross State Product (GSP) – Mining Industry**

- The State's Mining Industry contributed \$3.895bn (4.3%) to the State's Gross State Product of \$90.172bn in 2010-11.
- The mining industry achieved the highest percentage growth (38.9%) of all sectors contributing the State's total GSP (GVA:CP) in 2010–11
- The State's Mining Industry increased its contribution to the Gross State Product (GVA:CP\*) from \$2.836bn in 2009–10 by \$1.059bn (38.9%) to \$3.895bn in 2010–11
- The State's total GSP (GVA:CP) rose by \$2.559 billion (7.0%), from \$84.269bn in 2009-10 to \$90.172bn in 2010–11.

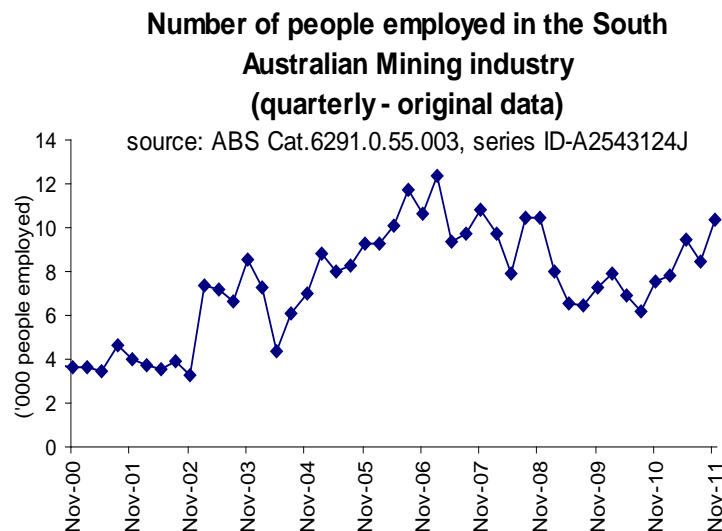
*\*gross value added current prices*

# Other MINING Industry measures

## Labour Force – Mining component

At August 2011 the number of employees in the Mining Industry in SA was 10 404 (according to the ABS) which is the highest it has been since the GFC. The return to these higher levels of employment in the mining industry is thought to be related to:

- An increase in the number of major mines operating and under construction.
- A return to the high levels of mineral exploration experienced before the GFC.



# ***South Australian Strategic Plan (SASP) 2010–11 Achievements***

SASP TARGET T1.17 – Exploration to 2010, >\$100m

**ACHIEVED 2010–11: \$254.7m**

SASP TARGET T1.18 – Production by 2014

**ACHIEVED 2010–11: \$4.225bn**

SASP TARGET T1.19 – Processing by 2014

**NOT ACHIEVED 2010–11: \$950m**

SASP TARGET T1.14 – Exports by 2014,  
Contribute to \$25B SA total

**2010–11 \$4.225bn minerals /(\$11.2bn state)**

# ***NEW SASP Targets – Tracking towards 2015 and 2020***

## ***NEW TARGETS RELEASED IN SEPTEMBER 2011***

### **TARGET 41 – Minerals Exploration:**

- Exploration expenditure in South Australia to be maintained in excess of \$200m per annum to 2015

### **TARGET 42 – Minerals Production and Processing:**

- Increase the value of minerals production and processing to \$10bn by 2020

**The 2010–11 value of ~\$6bn places the State in a good position to achieve the target of \$10bn by 2020**

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

# Outlook 2011–12

**‘Lag’ value chain measures** – Mineral Production and Mineral Exports will continue to be positively influenced by sustained volumes from existing mines and some increases from new mines (e.g.. Honeymoon). The sustained value of mineral production and mineral exports depends heavily on commodity prices remain stable for 2011–12, particularly for major commodities explored for and produced in South Australia – copper, gold, iron ore, uranium and heavy mineral sands.

Growth is likely in Net-Offsite Refining if steel production returns to previous higher outputs. In the longer term growth is anticipated in Net-Offsite Refining from the proposed Rare Earth Element (REE) processing plant to be established at Whyalla by Arafura Resources.

**‘Lead’ value chain measures** – Mineral Exploration Expenditure and New Capital Expenditure (CAPEX) are expected to remain steady with these values more susceptible to being influenced by changes in the global economic climate.