OXFORD
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AUSTRALIA

LABOUR & MATERIALS COST ESCALATION FORECASTS TO 2027/28

PREPARED BY OXFORD ECONOMICS AUSTRALIA FOR:
ESSENTIAL SERVICES COMMISSION OF SOUTH AUSTRALIA

FINAL REPORT – OCTOBER 2023

Oxford Economics Australia

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October 2023

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The modelling and results presented here are based on information provided by third parties, upon which Oxford Economics Australia has relied in producing its report and forecasts in good faith. Any subsequent revision or update of those data will affect the assessments and projections shown.

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1. EXECUTIVE SUMMARY

Oxford Economics Australia (OEA) was engaged by the Essential Services Commission of South Australia (ESCOSA) to provide a report on forecasts and projections of non-labour input prices, overall construction costs and labour costs relevant to opex and capex in the provision for retail drinking water and sewerage services in South Australia. These forecasts and projections aim to provide context and background, and can, to the extent relevant, help to inform ESCOSA in their development of a revenue determination for SA Water for the next 4-year revenue determination period (2024/25 to 2027/28). The forecasts in this report were finalised in mid-August 2023. For the avoidance of doubt, it is noted that these are the forecasts and projections of OEA. They do not represent the forecasts, projections and views of ESCOSA, nor the forecasts, projections and views of the South Australian Government.

Overall, the economic outlook is for much lower price escalation than that observed over the past two years, but which is unlikely to go back to the low inflationary environment that persisted over most of the 2010s.

In our assessment, there are various economic factors that will impact the outlook for non-labour input prices, construction costs and labours costs. On the one hand, the constrained commodity supplies stemming from the Ukraine conflict, and covid related acute supply chain pressures (i.e., bottlenecks in the supply of commodities, intermediate goods and freight transport amid strong demand from the global economic recovery) which significantly pushed up global and local commodity and construction (and other) prices over 2021 and 2022, have abated appreciably over the past 6-12 months. This has meant that price growth for most commodities and materials are now coming down (or turning negative), although some commodity and construction prices will likely see further growth over 2024.

On the other hand, labour market pressures and consequent wage increases will likely be slow to abate. Wages growth is likely to peak over the next 1-2 years, underpinned by tight labour market conditions and skill shortages (particularly in the mining and construction sectors, which will likely flow-on to the utilities sector). Notwithstanding higher interest rates weighing on domestic demand, the unemployment in Australia will likely remain historically low for the short to medium term, and there are likely to be lags in the wage-setting process, particularly in the enterprise bargaining segment. Accordingly, wage growth will likely be slow to come down to 'normal' levels.

Another factor which will add to materials (and consumer) inflation in the near term will be the depreciation of the Australian dollar (A$) over the past year, which will likely pass through to the domestic prices of imported goods. But OEA forecasts that the A$ will begin to appreciate from here, slowly at first, and then rising as US interest rates fall. The appreciation of the A$ over the medium term will help alleviate price pressures beyond FY24.

Tables 1.1 and 1.2 (below) provide a summary of OEA's forecasts. Key points are included below. The remainder of the discussion is in the body of the report.

- For **water and sewerage supply related labour** (mainly for opex), OEA forecasts that total wage costs for the South Australian Electricity, Gas, Water and Waste Services (**EGWWS** or 'Utilities') sector — expressed in Wage Price Index (WPI) terms — will average 3.7% per annum over the four-year regulatory period from FY25 to FY28 inclusive, slightly below the Australian EGWWS WPI average of 3.8% over the same period. In real terms, the South Australian EGWWS WPI is forecast to average 1.0% p.a. over the four years to FY28 (see table 1.1).

- Over the regulatory period (FY25 to FY28), Australian **EGWWS** WPI growth is expected to remain higher than the All Industries WPI average, with the Australian All Industries WPI forecast to average 3.3% over the five years to FY28. This means that the Australian EGWWS WPI is expected to be 0.4% higher than the All Industries average, similar to the historical difference of the past decade. The forecast real growth in Australian EGWWS WPI would be 1.0% over the 4-year regulatory period to FY28, which is similar to the 1.0% p.a. averaged over the decade to 2020 (see table 1.1).

- Given service providers outsourced labour is mostly supplied by firms in the construction industry, OEA proxy **external labour cost escalation** by wages growth (as measured by the WPI) in the South Australian construction industry. Our forecast is for the Australian and **South Australian Construction WPI** to average 3.7% p.a. and 3.5% p.a. respectively over the four-year period to FY28, or 1.0 and 0.8% in real terms (see table 1.1). While this is a marked improvement on the past five years, it is still well down on the 4.3% annual national average (nominal terms) of the decade to 2011/12.

- **Construction materials prices** have increased significantly over the past 18-24 months and, although they are expected to ease over the short-to-medium term, on the back of higher interest rates and a slowing in domestic demand, prices will remain elevated (particularly compared to the five years to FY21). Strong wages growth and fairly strong levels of construction activity will, in OEA's view, tend to limit price declines across a number of input materials and overall construction indices. Also, price declines of some materials can be limited where there may be a concentration of market power in their supply (e.g., bitumen).

Table 1.1 Summary – Labour Cost Escalation Forecasts: South Australia & Australia

(per cent change, year average, year ended June)

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	4 yr Avg (e)
				Actuals				Forecasts		Next Regulatory Period			
NOMINAL PRICE CHANGES													
1. Electricity Network-Related Labour													
EGWWS WPI - South Australia (a)	**2.0**	**2.0**	**2.5**	**2.6**	**1.7**	**1.4**	**3.7**	**4.2**	**4.1**	**3.9**	**3.5**	**3.4**	**3.7**
EGWWS WPI - Australia (b)	2.2	2.0	2.8	2.7	1.8	1.5	3.5	4.2	4.1	3.9	3.6	3.4	3.8
2. Contractor Labour Cost Escalation													
Construction WPI - South Australia (c)	**1.4**	**1.6**	**1.8**	**1.4**	**1.3**	**2.0**	**2.3**	**3.7**	**3.9**	**3.6**	**3.4**	**3.3**	**3.5**
Construction WPI - Australia (b)	1.7	1.9	1.9	1.5	1.3	2.6	3.7	4.3	4.1	3.9	3.5	3.4	3.7
Consumer Price Index (headline) (d)	1.7	1.9	1.6	1.3	1.6	4.4	7.0	4.2	3.2	2.7	2.5	2.5	2.7
REAL PRICE CHANGES (f)													
1. Electricity Network-Related Labour													
EGWWS WPI - South Australia (a)	**0.2**	**0.1**	**0.9**	**1.2**	**0.1**	**-3.0**	**-3.3**	**0.0**	**0.9**	**1.2**	**1.0**	**0.9**	**1.0**
EGWWS WPI - Australia (b)	0.5	0.0	1.1	1.3	0.2	-2.9	-3.5	0.0	0.9	1.2	1.1	0.9	1.0
2. Contractor Labour Cost Escalation													
Construction WPI - South Australia (c)	**-0.3**	**-0.4**	**0.1**	**0.0**	**-0.3**	**-2.5**	**-4.8**	**-0.5**	**0.6**	**1.0**	**0.9**	**0.8**	**0.8**
Construction WPI - Australia (b)	0.0	-0.1	0.2	0.2	-0.3	-1.8	-3.3	0.1	0.9	1.2	1.0	0.9	1.0

Sources: Oxford Economics Australia, ABS

(a) Electricity, Gas, Water and Waste Services (EGWWS) Wage Price Index (WPI) for South Australia.
(b) Australian sector wage forecasts provided for comparison.
(c) Construction Sector WPI for South Australia.
(d) Inflation forecasts are RBA forecasts for the next 2-3 years from latest 'Statement of Monetary Policy'. Beyond that, inflation forecasts are based on the mid-point of RBA inflation target (2.5%).
(e) Average Annual Growth Rate for 2024/25 to 2027/28 inclusive, ie for next regulatory period.
(f) Real price changes are calculated by deducting the inflation rate from nominal price changes.

Table 1.2 Commodity and Materials Price Forecasts

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Average 25-28	Average 21-24	Average 17-20
		Actuals						Forecasts		Next Regulatory Period					
Commodity Prices (a)															
Copper (A$/tonne)	7126	8700	8591	8438	10655	13304	12320	12366	12318	12220	12146	12441	12281	12161	8214
Copper (US$/tonne)	5376	6746	6146	5663	7962	9657	8297	8443	8838	8969	8915	9131	8963	8590	5983
Aluminium (A$/tonne)	2349	2751	2683	2496	2715	3983	3475	3401	3412	3435	3471	3511	3457	3394	2570
Aluminium (US$/tonne)	1773	2133	1920	1675	2029	2891	2340	2322	2448	2521	2548	2577	2523	2396	1875
Oil (A$/barrel)	66.3	82.2	96.1	76.9	72.5	125.7	128.9	120.5	114.1	109.6	109.3	105.7	109.7	111.9	80.4
Oil (US$/barrel)	50.0	63.7	68.7	51.6	54.2	91.2	86.8	82.3	81.9	80.5	80.2	77.6	80.0	78.6	58.5
Exchange rate (US$/A$) (b)	0.75	0.78	0.72	0.67	0.75	0.73	0.67	0.68	0.72	0.73	0.73	0.73	0.73	0.71	0.73
% ch															
Copper (A$/tonne)	6.2	22.1	-1.3	-1.8	26.3	24.9	-7.4	0.4	-0.4	-0.8	-0.6	2.4	0.2	11.0	6.3
Aluminium (A$/tonne)	10.8	17.1	-2.5	-7.0	8.8	46.7	-12.8	-2.1	0.3	0.7	1.1	1.1	0.8	10.2	4.6
Oil (A$/barrel)	10.9	23.9	16.9	-19.9	-5.8	73.4	2.6	-6.5	-5.3	-3.9	-0.4	-3.3	-3.2	15.9	8.0
Nominal Fuel Prices (AUD) (c)															
Petrol (cents/litre) (SA)	118.4	128.1	141.3	136.9	125.1	166.2	177.3	171.5	161.0	157.1	155.7	153.9	156.9	160.0	131.1
Diesel (cents/litre) (SA)	121.7	133.3	146.6	136.1	120.6	170.4	199.2	176.5	168.2	162.7	161.1	159.0	162.7	166.7	134.4
% ch															
Petrol (cents/litre) (SA)	4.0	8.2	10.3	-3.1	-8.6	32.8	6.7	-3.3	-6.1	-2.4	-0.9	-1.2	-2.6	6.9	4.9
Diesel (cents/litre) (SA)	4.0	9.5	10.0	-7.2	-11.4	41.3	16.9	-11.4	-4.7	-3.3	-0.9	-1.3	-2.6	8.8	4.1
Nominal Material Producer Price Indices (PPI)															
Steel Beams and Sections PPI (Australia) (d)	105.0	107.3	112.7	112.9	118.7	155.2	162.7	149.8	152.0	155.2	159.6	167.1	158.5	146.6	109.4
Steel Pipe & Tube PPI (Australia) (e)	105.2	99.2	105.7	103.5	104.2	147.9	156.6	131.3	124.1	121.4	120.8	121.6	122.0	135.0	103.4
Concrete, Cement & Sand PPI (SA) (d)	101.7	104.2	105.9	104.9	104.3	105.3	109.9	115.4	118.3	120.6	123.5	127.3	122.4	108.8	104.2
Polyethylene Pipe Index (Australia) (f)	109.5	113.3	118.8	106.2	103.1	119.7	124.9	120.8	119.5	119.3	120.6	121.1	120.1	117.1	112.0
Chemical Prices (Australia) (e, g)	99.7	107.5	123.8	119.2	119.1	128.5	180.2	183.6	168.1	163.1	166.9	166.9	166.2	152.9	112.5
Electricity Prices (SA) (h)	124.4	142.4	154.3	150.7	136.4	140.0	156.2	174.3	170.4	167.0	165.7	171.9	168.8	151.7	143.0
% ch															
Steel Beams and Sections PPI (Australia) (d)	3.5	2.2	5.0	0.2	5.1	30.8	4.8	-7.9	1.4	2.2	2.8	4.7	2.8	8.2	2.7
Steel Pipe & Tube PPI (Australia) (e)	5.9	-5.7	6.6	-2.2	0.7	42.0	5.9	-16.2	-5.4	-2.2	-0.6	0.7	-1.9	8.1	1.2
Concrete, Cement & Sand PPI (SA) (d)	1.7	2.4	1.7	-1.0	-0.5	1.0	4.4	4.9	2.5	1.9	2.4	3.1	2.5	2.4	1.2
Polyethylene Pipe Index (Australia) (f)	-3.8	3.5	4.8	-10.5	-2.9	16.0	4.4	-3.3	-1.1	-0.2	1.1	0.4	0.1	3.5	-1.5
Chemical Prices (Australia) (e, g)	-1.7	7.9	15.2	-3.7	-0.1	7.9	40.3	1.9	-8.5	-3.0	2.3	0.0	-2.3	12.5	4.4
Electricity Prices (SA) (h)	7.0	14.4	8.4	-2.3	-9.5	2.6	11.6	11.6	-2.2	-2.0	-0.8	3.7	-0.3	4.1	6.9
Nominal Broad Construction Price Indice															
Water Supply & Sewerage Engineering Construction IPD (i)	168.4	170.7	176.0	180.8	184.7	194.4	207.4	215.0	221.0	227.5	234.3	241.8	231.2	200.4	174.0
% ch															
Water Supply & Sewerage Engineering Construction IPD (i)	0.1	1.3	3.1	2.7	2.2	5.2	6.7	3.6	2.8	2.9	3.0	3.2	3.0	4.4	1.8
Consumer Price Index - headline (j)	1.7	1.9	1.6	1.3	1.6	4.4	7.0	4.2	3.2	2.7	2.5	2.5	2.7	4.3	1.7
Real Commodity Price Changes (k)															
Copper (A$/tonne)	4.4	20.2	-2.9	-3.1	24.6	20.4	-14.4	-3.8	-3.6	-3.5	-3.1	-0.1	-2.6	6.7	4.6
Aluminium (A$/tonne)	9.1	15.2	-4.1	-8.3	7.2	42.3	-19.8	-6.3	-2.9	-2.0	-1.4	-1.4	-1.9	5.8	3.0
Oil (A$/barrel)	9.2	22.0	15.3	-21.3	-7.4	68.9	-4.5	-10.7	-8.5	-6.6	-2.9	-5.8	-5.9	11.6	6.3
Real Fuel Prices (AUD) (l)															
Petrol (cents/litre) (SA)	2.3	6.3	8.6	-4.4	-10.2	28.4	-0.3	-7.5	-9.3	-5.1	-3.4	-3.7	-5.4	2.6	3.2
Diesel (cents/litre) (SA)	2.3	7.6	8.3	-8.5	-13.0	36.9	9.9	-15.6	-7.9	-6.0	-3.4	-3.9	-5.3	4.5	2.4
Real Material Producer Price Indices (PPI) (l)															
Steel Beams and Sections PPI (Australia) (d)	1.8	0.2	3.4	-1.2	3.5	26.4	-2.2	-12.1	-1.8	-0.5	0.3	2.2	0.1	3.9	1.1
Steel Pipe & Tube PPI (Australia) (e)	4.2	-7.6	4.9	-3.5	-0.9	37.5	-1.1	-20.4	-8.6	-4.9	-3.1	-1.8	-4.6	3.8	-0.5
Concrete, Cement & Sand PPI (SA) (d)	0.0	0.5	0.0	-2.3	-2.1	-3.5	-2.6	0.7	-0.7	-0.8	-0.1	0.6	-0.2	-1.9	-0.4
Polyethylene Pipe Index (Australia) (f)	-5.5	1.5	3.2	-11.9	-4.6	11.6	-2.7	-7.5	-4.3	-2.9	-1.4	-2.1	-2.7	-0.8	-3.2
Chemical Prices (Australia) (e, g)	-3.4	5.9	13.5	-5.1	-1.7	3.4	33.2	-2.3	-11.7	-5.7	-0.2	-2.5	-5.0	8.2	2.8
Electricity Prices (SA) (h)	5.3	12.5	6.8	-3.7	-11.1	-1.8	4.6	7.4	-5.4	-4.7	-3.3	1.2	-3.0	-0.2	5.2
Real Broad Construction Price Indice (l)															
Water Supply & Sewerage Engineering Construction IPD (i)	-1.7	-0.6	1.5	1.4	0.5	0.8	-0.3	-0.6	-0.4	0.2	0.5	0.7	0.3	0.1	0.2

Source: ABS, Oxford Economics Australia

(a) Forecasts from September quarter 2023 to FY28 come from latest monthly Consensus Economics publication, "Energy & Metals Consensus Forecasts".
(b) Forecasts from December quarter 2023 to FY28 come from latest monthly Consensus Economics publication, "Asia Pacific Consensus Forecasts".
(c) Historical figures (terminal gate prices) come from Australian Institute of Petroleum.
(d) Historical figures come from Table 18 of ABS release 6427 "Input to the House construction industry".
(e) Historical figures come from Table 12 of ABS release 6427 "Output of Manufacturing Industries".
(f) Polyethylene pipe prices are proxied using Manufacturing Wages, Road Transport Output PPI and Polymers of ethylene - primary forms (HTISC code 3901). Polymers of ethylene -
primary forms is primarily driven by Crude Oil.
(g) Chemical prices are proxied by the Australian Basic Chemical Manufacturing Producer Price Index (PPI). Historical figures come from Table 12 of ABS release 6427 "Output of Manufacturing Industries".
(h) Electricity prices are proxied by the Electricity Input to the Manufacturing Industries PPI. Historical figures come from Table 13 of ABS release 6427 "Input to the Manufacturing industries".
(i) Historical figures come from the ABS Engineering Construction Service series, provided as an unpublished 'Special Run' series.
(j) Inflation forecasts are RBA forecasts for the next 2-3 years from latest 'Statement of Monetary Policy'. Beyond that, inflation forecasts are based on the mid-point
 of RBA inflation target (2.5%).
(k) Real price changes are calculated by deducting the inflation rate from nominal price changes.

2. INTRODUCTION

Oxford Economics Australia (OEA) was engaged by the Essential Services Commission of South Australia (ESCOSA) to provide a report on forecasts and projections of non-labour input prices, overall construction costs and labour costs relevant to opex and capex in the provision for retail drinking water and sewerage services in South Australia. These forecasts and projections aim to provide context and background, and can, to the extent relevant, help to inform ESCOSA in their development of a revenue determination for SA Water for the next 4-year revenue determination period (FY25 to FY28). Forecasts of both nominal and real cost escalators are provided. The forecasts in this report were finalised in mid-August 2023. For the avoidance of doubt, it is noted that these are the forecasts and projections of OEA. They do not represent the forecasts, projections and views of ESCOSA, nor the forecasts, projections and views of the South Australian Government.

The Australian Bureau of Statistics is the primary data source for the consumer price index, wages, employment, real gross value added and investment (including engineering construction) data, and for a range of other economic variables. The data used in the projections is the latest available as at mid-August 2023 and includes the June quarter 2023 Consumer Price Index (CPI), Wage Price Index (WPI) and June Quarter 2023 National Accounts data releases. Other inflation and interest rate data were sourced from the Reserve Bank of Australia.

Forecasts of the economic variables in this report were mostly sourced from OEA reports, including the *Australian Macro Service*, *Long Term Forecasts: 2022 – 2036, Engineering Construction in Australia 2022-2036* and *Building in Australia 2022-2036*, along with other unpublished forecasts and from OEA internal research and modelling.

The previous Executive Summary section presented an overview of the outlook for the labour, materials and other input costs including numerical forecasts.

Section 3 provides a macroeconomic outlook for Australia and South Australia. This section has forecasts of key economic variables plus a discussion of the drivers and logic underpinning the projections, to provide context for the economic outlook for labour, materials and construction costs.

Section 4 discusses OEA's national wage and CPI projections and discusses the use of the Reserve Bank of Australia forecasts of the CPI for the deflation of nominal wages and materials. Forecasts of the All Industries WPI are provided in Section 4. Note that most of the references to historical data and forecasts of wages in Sections 4 and 5 are in nominal terms unless specifically stated that the data/forecasts are in real (inflation-adjusted) terms.

Sections 5 provides the forecasts and rationale of the wage projections for the Electricity, Gas, Water and Waste Services (EGWSS) and Construction sectors for Australia and South Australia, as measured by the WPI.

Section 6 provides the forecasts and rationale for commodities and materials escalation, including a discussion of global and local supply chain pressures.

Appendices include an explanation of different wage measures and wage models.

3. MACROECONOMIC OUTLOOK

3.1 AUSTRALIA MACROECONOMIC FORECASTS

Australian economy now slowing, but recession not expected in the near-term

Real Gross Domestic Product (GDP) has recovered well from the COVID-related slump in 2020, posting growth of 2.2%,3.7% and 3.4% over FY21, FY22 and FY23 respectively, with Gross National Expenditure (GNE: domestic demand plus change in stocks) experiencing faster growth of 3.7%, 5% and 3.6% respectively in those years.

GDP growth has slowed, falling back from 0.7% q/q/ in each of the September and December quarters 2022 to 0.4% q/q in each of the March and June quarters 2023, with through-the year (y/y) at 2.1% in the June quarter, compared to 2.6% y/y/ in the December quarter and 6% y/y in the September quarter 2022. In the June quarter 2023, activity was well supported by investment and net exports. An improvement in weather conditions and a drawdown of inventories boosted mining exports. Meanwhile, the recovery in the services balance gained pace in Q2 due to strong inward tourist and student flows. However, consumption growth remains meagre, with high inflation and the drag from higher interest rates weighing heavily on discretionary spending.

Household consumption increased by just 0.1% q/q in Q2. The divergent trends between discretionary and essential spending continued to widen, with the recent contraction in discretionary spending worsened in Q2 to a 0.5% q/q decline despite a pickup in vehicle sales. The savings rate has fallen below its pre-pandemic level, meaning the scope for households to fund consumption by saving less is becoming more limited. However, the tight labour market, rising wage growth, and strong population growth will all support spending over the next year.

Private business investment activity was relatively strong over the first half of 2023, increasing by 4.6%. Some of this strong performance reflects the clearing of some supply bottlenecks. Machinery and equipment investment was particularly strong in Q2 due to businesses taking delivery of new vehicles. Moreover, the cessation of tax incentives for equipment spending has brought forward some activity and will make momentum over the second half of 2023 patchier. Mining investment picked up over FY21 and FY22, and into FY23. With prices for a number of commodities expected to remain at healthy levels over the medium term and strong demand for renewable energy related minerals, we expect further investments to get underway and mining investment to continue to rise and remain strong through most of this decade. Overall, new business investment increased 6% in each of FY22 and FY23, with around 4% growth expected in each of FY24 and FY25, before growth eases. The recovery in business investment will not only drive near term demand but will increase the economy's productive capacity in the long run.

Public investment is still being well supported by transport infrastructure and health projects, although some commitments have been wound back. Despite the considerable backlog of work still to be done, dwelling investment continues to falter, contracting by a further 0.2% q/q in Q2, although this was driven by another sharp fall in alterations and additions activity. There remains a substantial backlog of work to be done in new dwellings, but the realisation of these projects remains constrained by stretched capacity, compounded by a spate of recent insolvencies in the construction sector.

Import demand was broadly flat in the quarter, meaning the goods trade made a positive contribution to growth. Services exports continued to recover sharply from the pandemic, increasing by a remarkable 12.1% q/q in Q2. Growth was driven by tourist and student flows, with the number of international students in the country surpassing its pre-pandemic level. The outlook for services exports remains positive, but growth will slow from here.

We expect that some of the factors that supported growth in the first half of 2023 will prove to be temporary and that momentum will slow in the second half. Investment in machinery and equipment is likely to pull back, and the recovery in the services balance does not have as far to run. Nevertheless, population growth remains strong, which is supporting growth in household spending and will add to demand for housing and infrastructure going forward.

Figure 3.1 Australia – Basic Economic Indicators
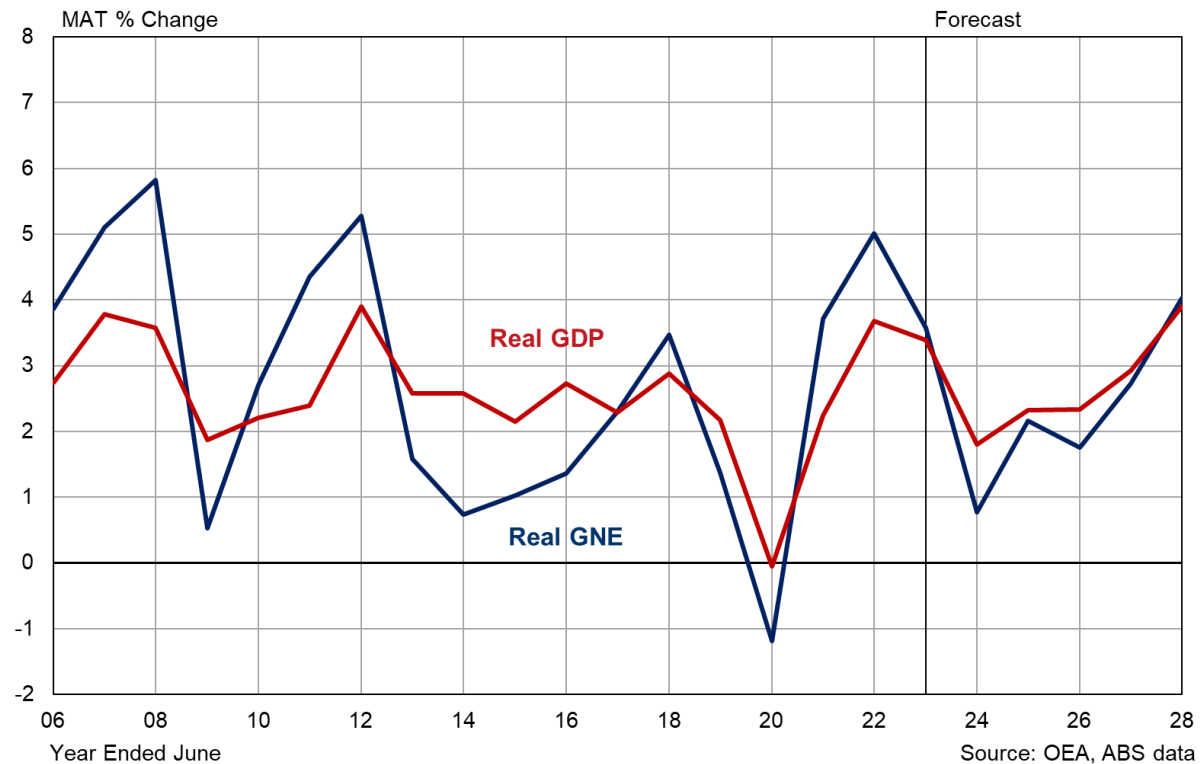
The labour market continues to track strongly. Employment growth was an exceptional 4.2% in FY23, with the unemployment rate sitting in a narrow band between 3.4-3.7% and averaging 3.5%, while the participation rate is at record highs. Labour demand remains very strong – employment growth was 3.0% y/y in August while job vacancies are still at high levels, suggesting further solid growth in employment in the near term (see chart 4.2). Faster population growth has facilitated strong jobs growth. This strength is the best insurance the economy has against a drastic collapse in growth. But it is adding to inflationary pressures in the economy. While the labour market continues to track in such a strong position, there will continue to be upward pressure on wage growth, and wages growth will pick up further in FY24.

One main negative influence on economic growth in the near-term is the progressive tightening of fiscal policy, which will see government consumption expenditure wound back. However, the tax cuts slated for July 2024 represent a reversal of this tightening stance and also represent an upside risk to inflation.

After rate hikes at 10 consecutive meetings, the RBA finally paused its hiking cycle in April, but then added another 0.25% increase in May and June, before pausing again over July, August and September. The official cash rate now at 4.1%. Price growth has peaked, and while the resolution of supply-side issues will relieve some of the inflation, it's the breadth and persistence of core inflation pressures that are causing most of the bank's concerns. The pickup in wage growth and emergence

of strong demand pressures in rental markets pose upside risk to the inflation outlook. Inflation remains uncomfortably high, and the very tight position of both labour and rental markets means there is lots of scope for an upside surprise to core inflation. It's still possible there may be another one or two rate hikes in the near-term. There is also an elevated risk that the tax cuts of July 2024 may induce another one or two rate hikes, particularly if core inflation has not been markedly reduced by early 2024.

Global Economic Outlook

Our baseline forecast for global GDP growth is 2.5% in calendar 2023, 2.6% for FY23 and a weak 2% in FY24, following 3.1% in calendar 2022 (and 4.3% in FY22). Growth is then predicted to improve to 2.5% in FY25 and 3% in FY26. Although economic data continue to paint a relatively downbeat picture, it doesn't suggest that economies are entering a deeper slump. Growth will still remain weak through 2023, particularly in the US, Canada and most of Europe where growth will be between 0.5% and 1.5% over the next two years.

Offsetting the weakness of advanced economies will be strong Chinese GDP growth, forecast to increase by 5% in calendar 2023 (after 3% in 2022), 4.4% in FY23 and 4.7% in FY24, before easing back to around 4.5% over FY25 to FY29. However, recent problems in China's property sector and some weakness in data releases is of concern, although we think that China will take action to keep its economy growing in the near-term. The stronger outlook for China will also improve the outlook in the rest of Asia. Overall, we think that the balance of risks is now less tilted to the downside and believe that the risks of a substantial global economic slump have diminished over the past few months.

High and rising US interest rates and increased uncertainty has seen a broad-based appreciation of the US dollar since late 2021, which has pushed down the value of the Australian dollar to around US$0.68 since mid-2022, with another downshift recently to below US$0.65. Our outlook is for the AUD to remain weak over 2023 and 2024, before appreciating gradually to US$0.73 by mid-decade as US interest rates fall faster than Australian rates, with an average of US$0.73 projected over the second half of the decade.

Beyond the near-term weakness, we expect global growth will return to its trend pace of around 3% by mid-decade, and gradually slow over the long term as resident population growth eases. Australia's trading partner growth (weighted by exports) is forecast to grow at a faster pace over the next 5-20 years (between 0.5 to 1% higher), due to the high weights of China, East Asia and India (all of which are expected to outpace the average pace of global growth) in Australia's export mix.

Domestic demand and GDP to weaken sharply in FY24, improving in FY25

Australian domestic demand is forecast to slow from 3.4% in FY23 to 0.8% in FY24, with a partial rebound to 2.1% in FY25. Net exports are expected to provide a positive contribution over the next two years, as tourism and education boost exports, while imports weaken due to slowing domestic demand and a low A$. GDP growth is forecast to be 1.8% in FY24 and 2.3% in FY25.

Housing investment is expected to decline over FY24 and FY25 as the current backlog of work is finished and high interest rates impact new dwelling construction and alterations and additions activity. On the other hand, we expect further moderate growth in business investment in FY24 and FY25 as some deferred investment is undertaken, although some sectors, such as hotel construction and other tourism-related investment, will take longer to recover. Private sector engineering construction will remain buoyant due to higher levels of electricity and telecommunications infrastructure and higher levels of mining investment, particularly oil and gas. Meanwhile, public investment is expected to see moderate growth over the next two years to FY25, as a large pipeline of transport infrastructure and social and institutional buildings projects come through. Meanwhile,

government recurrent expenditure is expected to weaken sharply as governments attempt budget repair. With employment growth expected to slow as investment and government spending eases, household consumption expenditure growth will also slow sharply over FY24, with higher inflation and higher interest rates also weighing on spending. Tax cuts slated for July 2024 will boost spending in FY25, although there is still some uncertainty around these tax cuts.

Trade volumes will be a mixed bag. We expect mining export volumes to pick up over the next 2-3 year as new capacity comes onstream. Rural exports bounced back over calendar 2021 and will remain strong over FY23 and into FY24, with bumper seasons in the eastern states boosting grain, other crops and dairy exports. Meat exports will strengthen too. Manufacturing exports will remain constrained due to weak global growth but will pick up over FY25 and FY26 as overseas conditions improve. Overall merchandise export volumes will continue to display moderate growth over FY23 to FY26. Meanwhile, growth in import volumes will weaken sharply in FY24 before improving in FY25, in line with domestic demand. Net exports are expected to make a positive contribution to growth over FY24 and in FY25.

Table 3.1 Australia - Key Economic Indicators, Financial years

Year Ended June	2017	2018	2019	2020	2021	2022	2023	Forecasts 2024	2025	2026	2027	2028
Total New Private Investment (+)	**-1.9**	**3.6**	**-2.8**	**-3.4**	**3.6**	**6.0**	**1.0**	**1.1**	**-0.1**	**1.4**	**5.3**	**8.5**
New Public Investment (+)	**8.5**	**11.3**	**4.7**	**0.1**	**4.2**	**7.1**	**5.4**	**1.4**	**2.7**	**-1.0**	**-2.7**	**1.0**
Gross National Expenditure (GNE)	**2.3**	**3.5**	**1.4**	**-1.2**	**3.7**	**5.0**	**3.6**	**0.8**	**2.2**	**1.8**	**2.7**	**4.0**
GDP	**2.3**	**2.9**	**2.2**	**-0.1**	**2.2**	**3.7**	**3.4**	**1.8**	**2.3**	**2.3**	**2.9**	**3.9**
Inflation and Wages												
CPI (Yr Avg) - RBA forecasts (*)	1.7	1.9	1.6	1.3	1.6	4.4	7.0	4.2	3.2	2.7	2.5	2.5
Wage Price Index (Yr Avg)(**)	2.0	2.1	2.3	2.1	1.5	2.4	3.5	4.0	3.8	3.6	3.3	3.2
Average Weekly Earnings (Yr Avg)(^)	2.0	2.4	2.7	3.9	2.7	1.9	3.4	4.3	4.4	4.2	3.7	3.3
Employment												
– Employment Growth (Yr Avg)	1.5	3.0	2.3	0.5	0.5	3.3	4.3	2.4	1.3	0.9	1.0	1.8
– Employment Growth (May/May)	2.1	2.6	2.7	-5.7	8.2	3.4	3.4	1.6	1.2	0.7	1.4	2.1
– Unemployment Rate (May) (%)	5.5	5.4	5.2	7.0	5.1	3.9	3.6	3.8	4.0	4.4	4.3	3.9
Labour Productivity Growth												
– Total	0.8	-0.1	-0.2	-0.5	1.7	0.4	-0.9	-0.6	1.0	1.5	1.9	2.0
– Non-farm	0.6	0.0	0.1	-0.3	1.2	-0.1	-0.7	-0.4	1.0	1.6	1.9	2.1

Source: OEA, ABS and RBA

+Expenditure on new assets (or construction work done). Excludes sales (or purchases) of second hand assets.

*Headline CPI forecasts based on Reserve Bank of Australia's forecasts to December 2025 quarter. Beyond this, we have used
   the the mid-point of the Reserve Bank's 2 to 3 per cent inflation target range.

** Based on Ordinary Time Hourly Rates of Pay Excluding Bonuses. Includes impact of Superannuation Guarantee increases.

^ Average Weekly Ordinary Time Earnings for Full-Time Adult Persons. Includes impact of Superannuation Guarantee increases.

Large increase in both service credits and debits are expected over FY23 and FY24, before moderating in FY25. This will have different implications for the all-important tourism and education services trade and related industry sectors. Education exports were worth $37.6 billion in FY19 (before the COVID pandemic), or almost 39% of overall services exports (compared to only $461m for outbound education import 'debits'). Education exports have bounced back, helped by the earlier-than-expected return of Chinese students and partly because there is a large backlog of visas already for overseas students. We also expect inbound tourism 'exports' to recover well in the medium-term, aided by a low A$. Tourism exports (including 'business travel') were worth $25.3 bn in FY19 (26% of overall services exports), compared to $50.6 billion for outbound services 'imports' – which then accounted for almost 50% of overall services debits. We expect a slower ramp-up in outbound tourism

(compared to inbound tourism), with tourism flows unlikely to recover back to their previous levels for another couple of years. The forecasts assume that the tourism and education credits (inbound) will recover back to pre-COVID levels by early-2024, while outbound tourism debits will not get back to the 2018 peaks until 2026.

Mild slowdown in mid-2020s, before economy moves to trend growth

Annual headline inflation jumped to 7.8% (y/y) in the December quarter 2022, while underlying inflation lifted to 6.4%, before the headline rate fell back to 7.0% in the March quarter 2023 and then 6% in the June quarter. Although we think the inflation peak has passed, the rise and broadening of in inflationary pressures has seen the RBA lift the cash rate by 4% since May 2022 to 4.1% in June 2023, with standard variable housing rates now around 8.5% and variable discounted rates at 7.1%. The RBA may raise rates again in the near-term, but we expect a pause in rises over FY24. However, large tax cuts expected in July 2024 is likely to see a further lift in rates (potentially higher) over the second half of 2024, as the RBA attempts to curtail the extra demand pressures from the tax cuts, with elevated inflationary pressures still expected to be present with unemployment rate at or just below 4%. The persistence of high interest rates – with the extra lift in mid-late 2024 - will continue to impact consumer spending and housing and business investment over FY25 and into FY26. With government capital spending weakening at that time and recurrent spending still constrained, the end result will see annual domestic demand growth falling below 2% in FY26 and remaining somewhat subdued in FY27. GDP growth will also be soft.

Interest rate cuts are expected from early-to-mid 2025 and over FY26 and FY27 in response to the weakening in the economy and because we expect inflation to be back in the RBA target range of 2%-3%. The large rate cuts will precipitate a very strong rebound in dwelling construction – by mid-decade there will be a very large undersupply of housing, with pent-up demand waiting to be unleashed. The current undersupply is only being exacerbated by high immigration and under-building. As consumers and businesses re-adjust to the 'normalcy' of higher interest rates – although at much lower levels than the 2000s and 2010s – investment and consumer spending will return to long term trend (or potential) rates of growth over the second half of the 2020s with an initial rebound in GDP growth to 2.9% in FY27 and then 3.9% in FY28, before subsequently easing back.

Over the longer term, potential growth will slow primarily due to a smaller contribution from labour force growth compared to recent history. Net overseas migration will fall back to a more normal level, and the contribution from natural increase (births minus deaths) will also moderate. The relatively large cohort of Australians aged 65+ moving into retirement will also place downward pressure on the labour force participation rate, although this will continue to be somewhat alleviated by relatively high net immigration.

3.2 OUTLOOK FOR THE SOUTH AUSTRALIAN ECONOMY

Compared to other states, South Australia's economy was relatively insulated from the impact of the COVID pandemic. After contracting by -1% in FY20, State Final Demand (SFD) increased by a strong 5.3% in FY21 and 5.6% in FY22, before easing back to 2.8% in FY23. Meanwhile Gross State product (GSP) rose 4.7% in FY21 and 5.1% in FY22 - all well above the Australian equivalents of Australian domestic demand and GDP in those two years – before rising and estimated 3.3% in FY23 (close to Australian GDP growth). Strong investment was a key contributor to growth over FY21 and FY22, with dwelling, business and public investment all higher, but falls in dwelling and public investment contributed to slower growth in SFD in FY23.

SFD bounced back strongly in the recent June quarter, increasing by 1.3% q/q, after three weak quarters. Growth in the quarter was driven by government consumption expenditure, dwelling investment and strong growth in private equipment expenditure. Interestingly, these three areas of

expenditure are all expected to weaken over the next year, so the June quarter can probably be viewed as a temporary blip.

SFD and GSP growth are forecast to weaken sharply over FY24 – to around 1% – due to declines in dwelling investment and government consumption expenditure. As health spending was a focal point of the 2022 election, public demand may provide an upside surprise. Household spending growth will weaken sharply (but stay positive), while the growth in business investment will also slow, with private engineering construction the key contributor due to rising electricity infrastructure and mining-related construction. Public investment is expected to rise due to increase in roads and utilities investment.

The public sector remains a significant direct and indirect consumer. Several defence programs based in Adelaide, including military vehicles and the Space Agency, will support growth in the medium term. This will mitigate the softer outlook for the private sector. Nevertheless, the cancellation of the federal government's submarine contract with French contractor Naval Group has generated considerable uncertainty around defence work - future work is expected to be based in Adelaide, but the degree of domestic construction is still unknown.

The South Australian construction sector is a key contributor to private and public investment and overall state economic growth. The South Australian construction market is dominated by engineering construction work, which has consistently represented 50% to 60% of total work done within the state. Total construction work done surged 11% in FY22 to a historical peak of $14.4bn (constant 2020/21 prices). Activity levels are expected to see further small increases over FY23 and FY24 to a new peak of $14.7bn in FY24, before falling a cumulative -5% over FY25 and FY26, as engineering joins the declines in dwelling and non-residential building. Overall construction activity is then expected to show healthy increases over FY27 to FY29, driven mainly by strong growth in residential and non-residential building, with residential activity responding to a critical undersupply of housing and lower interest rates. Modest increases in engineering construction activity are also expected to contribute, boosted by higher levels of transport, electricity and mining investment.

Table 3.2 South Australia – Key Economic Indicators, Financial Years

								Forecast				
Year Ended June	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
South Australia												
Total Construction Activity(*)	3.8	19.5	0.0	-4.8	4.9	11.1	0.4	2.1	-2.9	-1.5	4.5	7.4
State Final Demand	3.6	4.0	1.6	-1.5	5.3	5.6	2.8	1.0	1.4	1.2	2.8	3.5
Gross State Product (GSP)(**)	**1.9**	**2.2**	**1.1**	**-1.0**	**4.7**	**5.1**	**3.3**	**0.9**	**1.6**	**1.5**	**2.5**	**3.3**
Employment Growth (Year Avg)	1.6	2.6	1.9	-0.1	1.3	4.0	3.4	2.6	1.0	0.6	1.0	1.6
Australia												
Total Construction Activity(*)	-3.3	12.2	-9.1	-3.7	-0.7	2.0	4.8	0.4	0.3	-0.5	3.3	7.9
Australian Domestic Demand	2.3	3.4	1.6	-0.8	3.0	5.0	3.6	0.8	2.1	1.9	2.8	4.0
Gross Domestic Product (GDP)	2.3	2.9	2.2	-0.1	2.2	3.7	3.4	1.8	2.3	2.3	2.9	3.9
Employment Growth (Year Avg)	1.5	3.0	2.3	0.5	0.5	3.3	4.3	2.4	1.3	0.9	1.0	1.8

Source: OEA, ABS

* Total construction work done in constant prices as per the ABS Building Activity and Engineering Construction Activity
   Total construction is the sum of new dwelling building (includes alterations and additions activity greater than $10,000),
   new non-building activity and new engineering construction.
** GSP is an estimate for FY23

The South Australian labour market continues to perform well. Employment growth has been robust since the beginning of the year, with the state adding 28,500 jobs in the 8 months to August and growth through-the-year at 4.1%. The unemployment rate has stayed at a historically low level, averaging 4.1% in FY23 and falling to 3.6% in August – below the national average, which is a rare

feat. The participation rate has increased steadily over the past year, reaching a record 64.8% in May, before easing back slightly over recent months.

We expect employment growth will moderate through FY24, before easing sharply over FY25 to FY26. However, the state unemployment rate is expected to remain mostly around (or under) 4% over the next year, and then average 4.1-4.4% in the following three years – indicative of a tight labour market, which will add to wage pressures in the state. Moderate growth in employment in the medium term and higher wages are expected to support household spending, although higher interest rates will constrain consumer demand somewhat over the next 2 years.

SFD and GSP growth are forecast to pick up over FY25 and FY26 to around 1.3% and 1.5% respectively, before strengthening from FY27 due to increases in residential, business and public investment, the latter as the next round of major projects get underway. Overall, both SFD and GSP growth are forecast to average 2.2% growth over the four years to FY28 (compared to an average of 2.8% for SFD over the past 5 years to FY23 inclusive; and an average of 2.6% for the past 5 years to FY23 and 2.3% for the past three decades for GSP).

Over the long run, we expect South Australia's economy to underperform against the rest of the economy. This primarily reflects the state's demographic outlook, with population growth projected to be -0.4% slower than the national average over FY23 to FY28.

4. WAGES AND INFLATION OUTLOOK

4.1 CPI OUTLOOK

Current strong inflationary pressures will be slow to abate

Consumer price inflation was subdued for the five years to the March quarter 2020, with annual (through-the-year or y/y) headline CPI inflation ranging between 1.0% and 2.2%; averaging 1.7%. Meanwhile, underlying (or core) inflation fell below the Reserve Bank's target 2-3% band in March 2016 and stayed there. The onset of COVID-19 in early 2020 then saw considerable volatility in the headline CPI measure over 2020 and 2021, due to volatility in oil prices, government responses to Covid, demand impacts and then supply chain impacts due to Covid – but the CPI remained under 2% over FY20 and FY21.

However, by late 2021/early 2022 it was apparent that inflationary pressures were increasing and broadening. Significantly, the September quarter 2021 saw core inflation – which excludes the extreme price movements, such as the 'usual' petrol price volatility – move back into the RBA's 2-3% target range for the first time since the December quarter 2015. Both core and headline inflation accelerated through 2022, with headline CPI peaking at 7.8% and core inflation peaking at 6.4% in the December quarter 2022, as a number of factors conspired to worsen local and global inflation. These factors included severe supply chain shortages and delays, the zero-Covid policy pursued by China, the outbreak of war in Ukraine (and associated sanctions on Russian oil and other commodity exports). Food prices also jumped in early 2022 because of the impact on wheat and other foods prices from the Ukraine war, while the floods in eastern Australia led to substantial rises in some food prices through 2022. The supply-chain disruption for imported goods were also exacerbated by the decline in the Australian dollar over 2022 and into 2023. Added to this was evidence of rising demand inflation via widening profit margins, as local businesses took advantage of stronger economic conditions.

Another important component of procyclical inflation since mid-2021 has been the cost of constructing a new dwelling (which constitute 8.6% of the CPI basket'). Cost inflation in the construction sector has been escalating since late 2020, due to both the surge in construction work generated by the HomeBuilder subsidy, and materials and labour shortages caused by this additional demand and exacerbated by supply bottlenecks and workplace restrictions. The house purchase component increased 20.7% y/y over the year to September 2022, before easing over the subsequent three quarters. Construction cost inflation will slow further in the coming quarters, but over the next year it will still remain high relative to its history.

Price inflation to ease back over the next 2 years as supply pressures ease

Although we expect oil and other commodity prices to ease further through 2023, it will take some time for supply networks to completely normalise. But most of these supply-side pressures will abate over 2023, and their absence will cool headline inflation materially through 2023. Demand-driven inflation will be slow to abate over the year, despite RBA attempts to 'cool' strong demand with higher interest rates. Moreover, the tightening labour market - with the unemployment rate currently around 3.6% and expected to stay under 4% for the next 2 years - will contribute to wage pressures, which have so far contributed little to the above-average CPI inflation, apart from construction costs. Overall, headline CPI inflation averaged 4.4% in FY22 and 7% in FY23, (following 1.6% in FY21), with annual (through-the-year, or y/y) price growth easing back to 6.5% in June quarter, pushed down by the 0.9% q/q rise in the June quarter.

However, some structural factors will add to inflation over the short-to-medium term, such as household energy costs and a return to higher rental and food inflation. Rents constitute around 6% of the CPI while food accounts for over 10% of CPI basket (excluding around 7% for meals out and takeaway food). Rental price growth rose to 4% (y/y) in the December quarter 2022 and further to 6.7% in the June quarter 2023. Given the extreme tightness in rental markets currently, the CPI measure of rents is expected to increase markedly over the next 2-3 years as existing rental contracts roll over to new, much higher rents. Another factor driving inflation over the next 2-3 years will be further sharp increases in electricity and gas prices (which constitute 3.2% of CPI).

Food inflation had averaged around 2.8% p.a. over the 25 years to 2014 but had been very weak over the five years to FY19 (averaging only 1.1% p.a.), which was a key factor which muted prices over those years. This was due to intense competition between the major supermarkets and falling or weak global agricultural prices. The supermarkets cannot keep cutting prices (and either their own margins or suppliers' margins), while world agricultural prices will remain elevated over the medium term, now the previous global oversupply has dissipated. So while we expect food inflation to ease back from the 10% rises of 2022, food prices are unlikely to track back to the sub-2% of the 2015-2019 period.

Underlying and headline CPI inflation are expected to remain somewhat elevated over FY24 to FY26 as the supply and demand pressures slowly abate and employment remain bouyant, and wage growth strengthens. Wages growth will accelerate as the unemployment rate is expected to remain below 4% over FY23 to FY25. Although global inflationary pressures will ease over the next year, they will remain elevated, contributing to higher manufacturing costs and prices over the near term. The sharp decline in the exchange rate from around US$0.72 in the first half of 2022 to below US$0.65 recently will also add to inflationary pressures in the near term. Conversely, we expect the A$ to appreciate toward US75 cents over the next two years, which will provide some offsetting pressures between FY24 and FY26.

Overall, OEA forecasts headline CPI inflation to be 4.4% in FY24, 3% in FY25 and 2.6% in FY26. The expected softening in the economy around mid-decade will see price and wage pressures weaken, with the CPI to ease back to around 2.5% over FY27, where it is expected to sit over the latter years of the 2020s (see figure 4.1). Our forecasts, on average, are similar to the May RBA forecasts over FY23 to FY26 (see section 4.1.1 below).

CPI inflation projected to average close to 2.5% over the medium-to-long term

Headline CPI inflation is expected to sit close to the mid-point of the RBA's 2-3% target band in the long run based on the following:

- Tradeables inflation, which currently constitutes around one-third of the CPI basket, is forecast to increase by an average of around 1% to 2% per annum contributing around 0.5% to annual inflation. Limited movements in the A$, steady (but subdued) increases in global manufacturing costs and some commodity price increases underpin this projection.

- Non-tradeables inflation comprises the remaining two-thirds of the basket, but this proportion is increasing due to the move toward services and higher price inflation (than tradeables). It is assumed to increase by around 2.5-3% per annum, contributing around 2% to headline inflation. This is weaker than the 3.7% average achieved from 2001 to 2015 when relatively high wage inflation, lower than average productivity growth to 2009 and also large rises in utilities prices pushed non-tradeables inflation to well outside of the RBA's 2 to 3% target range. We expect higher wages growth in the longer term and lower long-term productivity will also contribute to the maintenance of relatively high non-tradeables inflation.

4.1.1 RBA CPI Forecasts are Used to Calculate Real Wages

To calculate real wage and other cost increases, we deflate nominal price growth by deducting expected inflation. For the inflation forecast, we use the methodology preferred by the Australian Energy Regulator (AER). This methodology involves using the official near-term CPI forecasts from the Reserve Bank of Australia (RBA) and a longer-term average based on the 2.5% mid-point of the RBA's inflation target band (i.e. 2 to 3%). The RBA's August 2023 'Statement on Monetary Policy' forecast the headline CPI rate to be 4 ¼ % for the December quarter 2023 and then to 3 ½ % in the June quarter 2024 – giving a year average CPI rate of 4.2% for FY24. The RBA's CPI forecast for December 2024 is 3 ¼ %, and 3% by June 2025 - giving a year average CPI rate of 3.2% for FY25 – before easing to 2 ¾ % in December 2025. Beyond the RBA's forecast from the SoMP, we assume the CPI averages 2.5% over the medium-to-long term.

4.2 NATIONAL WAGES

The key determinants of nominal wages growth are consumer price inflation, productivity, the relative tightness of the labour market (i.e. the demand for labour compared to the supply of labour), and compositional (structural) changes in the labour market following the end of the mining investment boom around 2013. The low wage growth of the 2014-21 period was both a product of and key contributor of low underlying inflation. Low wages helped keep business costs down and thus mute upward price pressures, while a significant section of pay deals are set in line with CPI inflation – especially for employees on awards. The unemployment rate and underemployment rate are key indicators of the amount of slack in the labour market. The unemployment rate was just above 5% over the two years to the March quarter 2020, before the COVID impacts. Historically this rate was seen as close to the NAIRU, (the Non-Accelerating Inflationary Rate of Unemployment or the 'natural rate of unemployment'), but our latest research suggests that the natural rate has lowered in recent years, possibly to around 4%[1].

Wage growth now rebounding, and will lift further as labour market remains tight

Following the covid-inspired slump in wages in FY20 and FY21, wages growth picked up over FY22, with the All Industries wage price index (WPI) increasing to 2.4% in FY22 (from 1.5% in FY21). A further acceleration in wages growth is now apparent in FY23 – with 3.5% expected - and we expect wages growth to strengthen over FY24 and FY25, before easing over FY26 to FY28.

A key element adding to wage pressures in FY22 and over FY23 has been the rapid tightening in the national labour market that is now apparent. Employment is now well above pre-COVID levels, with the unemployment rate at 3.5% and labour force participation rates at record levels. A key to the outcomes over FY22 was little growth in the pool of available labour. The cessation of international migration to Australia since March 2020 saw population growth plummet to just 0.2% in the year to June 2021, while the working age population (above 15 years old) increased by only 50,000 (+0.2%) over 2020/21 and 206,000 in 2021/22, compared to over 330,000 persons in FY19 and in the year to March 2020. Growth in the labour force has been facilitated by a marked increase in the labour force participation rate to record levels. However, there is now little scope to raise the participation rate further and, with the underemployment rate at historical lows and job vacancies well above pre-COVID levels, wage pressures are continuing to build.

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[1] A 4% NAIRU is within the RBA's the lower bound estimate as of 2019. See the RBA's Assistant Governor Luci Ellis' 2019 speech "Watching the Invisibles".
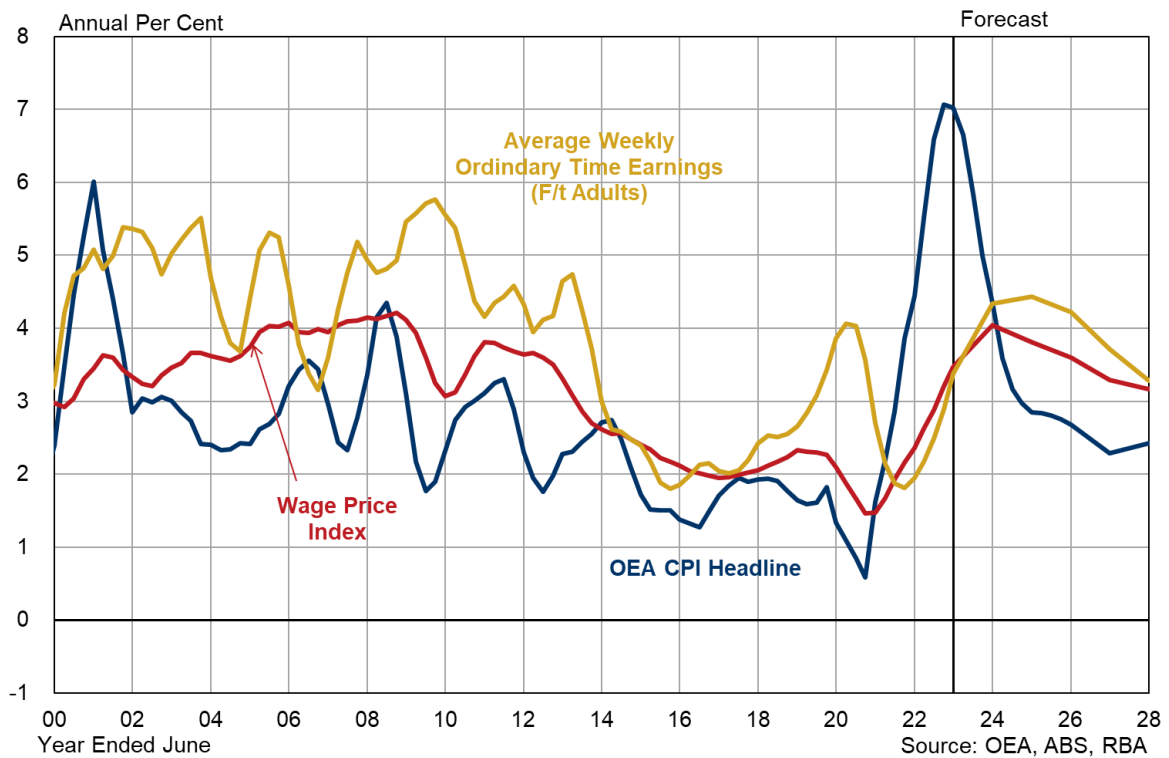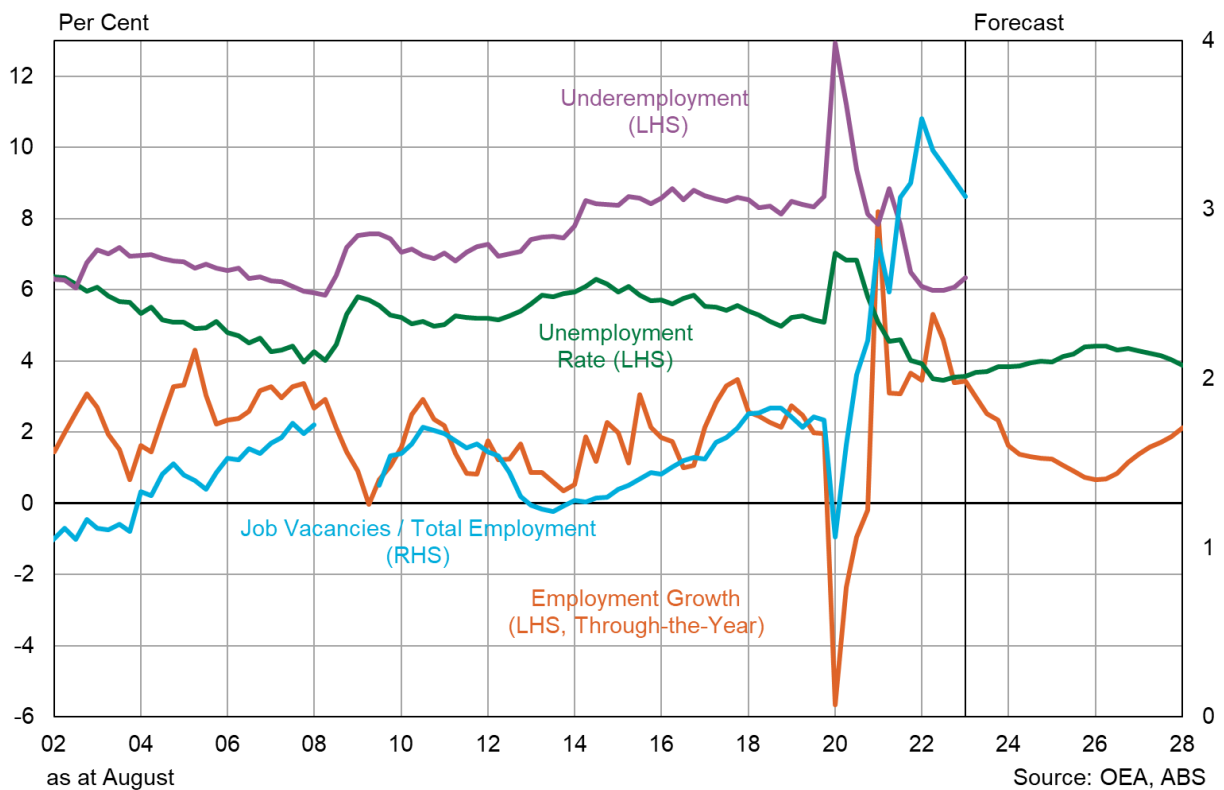
Fig. 4.1 Australia: Wages and Prices

Fig. 4.2 Australia: Employment and Unemployment

The economy is expected to remain resilient over the short-to-medium term and, although OEA's economic growth (GDP) forecasts are for modest weakening over FY24 and FY25, we still expect the labour market to remain tight, with labour demand still strong and the unemployment rate remaining around 3.6% to 4% over the next two years to FY25. Note that we expect the unemployment rate to drift up at a slower rate than some other forecasters (such as the Reserve Bank) is and push up to around 4.4% over FY26, while the other forecasters expect a rate of around 4.5% to be reached by the first half of 2025. Job ads are still very high and have increased over the past two months, indicating that labour demand is still strong – reinforced by the increase of 65,000 jobs in August (pushing y/y growth to 3.0%). Furthermore, while our employment growth forecasts are only slightly stronger over the next two years, we expect that the rise in the unemployment rate will also be kept in check by falls in the participation rate from current record levels, as employment growth slows. This is likely to occur amongst those currently in the workforce with a 'loose attachment' to the workforce, such as older workers who stayed in the workforce due to strong labour demand. As demand eases, a significant proportion of workers are likely to drop out of the workforce (and hence the labour force statistics) and retire.

Skill shortages, which have already emerged, are expected to remain acute in many parts of the economy, although there has been some recent evidence of shortages of unskilled labour beginning to ease. The tight labour market will see wage pressures remain elevated for at least the next two years, before easing. Wages will be slower to pick up compared to the inflation rate, due to lags in the transmission of wage increases, particularly in the enterprise bargaining segment, where the duration of agreements runs for 2-3 years.

In the short-term, our wage forecasting methodology involves an analysis of the expected future wage movements in the three main methods of setting pay – for those reliant on awards (13% of the full-time workforce), collective agreements (38% of the workforce) and those who have their pay set by individual arrangements (48%). In terms of those workers on awards who have their pay determined by the Fair Work Commission (FWC) in the annual National Minimum Wage (NMW) case, the increase given in June 2022 for the 2022/23 financial year was much higher than previous years – with the FWC awarding a 5.2% increase to workers on the minimum wage, although workers on award rates only received a 4.6% increase (minimum $40/week increase for award rates below $870/week). A key element of this decision was the very high CPI inflation rate of 5.1% in the March quarter 2022 (which was then the latest available quarter).

The June 2023 NMW decision (for the 2023/24 financial year) was even higher, driven by CPI inflation of 7% in the March quarter 2023. The Commission awarded an 8.6% in the minimum wage and an increase of 5.75% for workers on awards. This will underpin a lift in wages growth in FY24. It is likely that the minimum and award increases provided by the FWC will remain high for the next 1-2 years, particularly given the support for higher wages from the new Federal Labor government (which the previous government did not support). Although only 13% of full-time workers (a much higher proportion for part-time workers) rely on the annual increase in the minimum and award wage as their primary wage-payment mechanism, a significant proportion of workers are also indirectly influenced by the NMW increase, as it usually flows onto industry awards, with the Fair Work Commission estimating its decisions will affect more than 2.7 million workers (around 20% of the workforce). Accordingly, these FWC decisions will also influence the strength of wage increases given to those who receive their wages via 'individual arrangements' pay setting arrangements, as a significant proportion of wage increases given under individual arrangements are based on awards. Recent inflation outcomes, inflationary expectations and the tightness of the labour market are also key influences in the setting of wage increases under individual arrangements.

It is important to note that wage growth usually lags changes in the labour market, inflation and economic conditions, because of the inherent lags in wage setting mechanisms. Although wage increases related to the NMW and relevant awards are set each July, many of the enterprise

agreements – covering 38% of the full-time workforce – run for an average of 2-3 years. These agreements averaged 2.6% over the five years to December 2021, having been set in an environment of low inflation and a much less tight labour market. However, as these previous (low wage increases) agreements expire, we expect the next round of agreements to be materially higher, due to ongoing high CPI inflation and because of widespread skilled labour shortages (with the unemployment rate expected to be below 4%). Of the other 49% of workers on individual agreements, those of who are on awards will receive an annual pay increase via the FWC increase, while others may receive an annual salary increase, but there are a significant proportion on fixed contracts running over a few years. The bottom line is that the next round of wage rises negotiated by workers will be much higher than recent years.

Our forecasts for the Australian All industries WPI is an increase to 4.0% in FY24 (from 3.5% in FY23) and remain elevated at 3.8% over FY25, before easing over the subsequent 3 years as the economy cools and the unemployment rate rises back above 4%. The South Australian All Industries WPI is expected to largely track over the national All Industries WPI over the forecast period, with minor year-by-year differences related to the relative strength of economic growth and labour markets.

5. INDUSTRY WAGE FORECASTS - UTILITIES & CONSTRUCTION: AUSTRALIA & SOUTH AUSTRALIA

5.1 NATIONAL & SOUTH AUSTRALIAN EGWWS WPI FORECASTS

Utilities wage growth is forecast to continue to outpace the national 'all industries' average over the forecast period.

The national (Australia-wide) EGWWS WPI growth has consistently been above the national (All Industries) average since the index's inception in 1997 and averaged 0.6% higher over the past two decades (see Table 5.1 and Fig 5.1). Over these two decades, the average growth in the real (inflation adjusted) WPI was 1.3%. Since the collapse in wages growth following the end of the mining boom, the EGWWS WPI has continued to outpace the All Industries average, increasing by an average of 2.5% over the 8 years to FY21 inclusive, 0.4% higher than the 2.1% national average.

Over the 4-year period from FY25 to FY28 inclusive, the Australian EGWWS WPI is forecast to average 3.8%, which will be 0.4% above the All Industries average. In real terms, the Australian EGWWS WPI is forecast to average 1.0% p.a. over the four years to FY28. The overall real average of 1.0% is in line with the average over the decade to FY20 (before Covid). In terms of the historical difference vis-à-vis the All Industries WPI average over the past decade, the difference is in line with the 0.4% difference of the decade to FY20.

OEA regards the WPI to be a measure of the *underlying* wages growth in the utilities sector for total Australia. In terms of total wage costs total wage costs — expressed in Average Weekly Ordinary Time Earnings (AWOTE) — OEA expects EGWWS AWOTE to average 4.1% per annum over the four years to FY28, 0.2% higher than the EGWWS WPI. Our AWOTE forecasts are higher due to compositional effects. Apprentices, trainees and numbers of new staff have increased markedly over recent years, across the electricity, gas and water sector generally. Given slower growth in employment numbers over the next decade, it is likely that there will be overall up skilling of the existing workforce, which will see a commensurate movement by much of the workforce into higher grades (i.e., on higher pay), resulting in higher earnings per employee.

Wages growth in the EGWWS sector is invariably higher than the total Australian national (All Industries) average.

During the COVID-19 crisis, the EGWWS sector fared much better than just about all other sectors, along with the Education, Health & Social Assistance and Finance and Insurance sectors, in terms of wage increases over FY20 and FY21. However, in FY22, annual growth in the EGWWS WPI (1.5%) slipped below the All Industries average (2.4%) for only the second time in the past two decades. We believe this will be a short-lived aberration and that the EGWWS WPI will rebound strongly over the next year to again outpace the national average. Driving this will be much higher EBAs negotiated in an environment of very high inflation and a very tight labour market, particularly for the types of skilled labour that dominate in the sector.

Table 5.1 Total Australia (All Industries) and Electricity, Gas, Water and Waste Services Average Weekly Ordinary Time Earnings and Wage Price Index (Year Average Growth)

Year Ended June	Average Weekly Ordinary Time Earnings ([1])						Wage Price Index ([2])					
	All Industries			Electricity, Gas, Water and Waste Services			All Industries			Electricity, Gas, Water and Waste Services		
	Nominal $/week	%CH	Real AWOTE %CH	Nominal $/week	%CH	Real AWOTE %CH	Nominal Index	%CH	Real WPI %CH	Nominal Index	%CH	Real WPI %CH
2002	847	5.4	2.5	981	6.8	3.9	76.7	3.3	0.5	73.8	4.2	1.4
2003	890	5.0	2.0	1,001	2.1	-0.9	79.3	3.5	0.5	76.8	4.1	1.1
2004	932	4.7	2.3	1,057	5.5	3.1	82.2	3.6	1.2	79.9	4.1	1.7
2005	973	4.4	2.0	1,091	3.2	0.8	85.3	3.7	1.3	83.3	4.3	1.8
2006	1,018	4.6	1.4	1,111	1.9	-1.3	88.7	4.1	0.9	87.6	5.2	2.0
2007	1,054	3.6	0.6	1,152	3.7	0.7	92.2	3.9	1.0	91.8	4.8	1.8
2008	1,106	4.9	1.6	1,183	2.7	-0.7	96.1	4.1	0.8	95.7	4.2	0.8
2009	1,166	5.5	2.3	1,255	6.1	3.0	100.0	4.1	1.0	100.0	4.5	1.4
2010	1,231	5.6	3.2	1,351	7.6	5.3	103.1	3.1	0.8	104.4	4.3	2.0
2011	1,283	4.2	1.0	1,474	9.1	6.0	107.0	3.8	0.7	108.7	4.2	1.1
2012	1,338	4.3	2.0	1,510	2.5	0.1	110.9	3.6	1.3	112.5	3.5	1.2
2013	1,400	4.6	2.4	1,602	6.1	3.9	114.6	3.3	1.0	117.3	4.2	1.9
2014	1,442	3.0	0.3	1,635	2.0	-0.7	117.6	2.6	-0.1	121.1	3.2	0.4
2015	1,477	2.4	0.7	1,646	0.7	-1.0	120.4	2.4	0.7	124.5	2.8	1.1
2016	1,504	1.9	0.5	1,704	3.5	2.2	123.0	2.1	0.7	127.5	2.4	1.0
2017	1,535	2.0	0.3	1,777	4.3	2.6	125.4	2.0	0.2	130.3	2.2	0.5
2018	1,572	2.4	0.5	1,818	2.3	0.4	127.9	2.1	0.1	132.9	2.0	0.0
2019	1,614	2.7	1.0	1,842	1.3	-0.3	130.9	2.3	0.7	136.6	2.8	1.1
2020	1,676	3.9	2.5	1,896	2.9	1.6	133.7	2.1	0.8	140.2	2.7	1.3
2021	1,721	2.7	1.1	1,927	1.6	0.0	135.6	1.5	-0.1	142.7	1.8	0.2
2022	1,755	1.9	-2.5	1,979	2.7	-1.7	138.8	2.4	-2.1	144.9	1.5	-2.9
2023	1,814	3.4	-3.6	2,109	6.6	-0.5	143.7	3.5	-3.6	150.1	3.5	-3.5
Forecasts												
2024	1,893	4.3	0.1	2,247	6.6	2.4	149.5	4.0	-0.1	156.3	4.2	0.0
2025	1,977	4.4	1.2	2,352	4.7	1.4	155.2	3.8	0.6	162.8	4.1	0.9
2026	2 060	4.2	1.5	2 454	4.3	1.6	160.7	3.6	0.9	169.1	3.9	1.2
2027	2 137	3.7	1.2	2 548	3.8	1.3	166.0	3.3	0.8	175.2	3.6	1.1
2028	2 207	3.3	0.8	2 639	3.6	1.1	171.3	3.2	0.7	181.2	3.4	0.9
Compound Annual Growth Rates ([2])												
2001-2010	4.8		2.0	4.4		1.5	3.7		0.9	4.4		1.6
2010-2020	3.1		1.1	3.4		1.4	2.6		0.6	3.0		1.0
2023-2028	4.0		0.2	4.6		1.6	3.6		-0.1	3.8		0.8
2024-2028	3.9		1.0	4.1		1.4	3.5		0.6	3.8		1.0

Source: BIS Oxford Economics, ABS

(1) Earnings per person for full-time adults. Data is year ended May (available only at mid-month of quarter)

(2) CAGR (Compound Annual Growth Rates) for 2024-2028 is the average annual grwoth for 2024/25 to 2027/28 inclusive

   i.e. next Revenue Determination period.

To a large extent, higher relative wages growth have been underpinned by the strong capital works in the utilities sector over the past two decades (and particularly up to 2013 - resulting in robust employment growth over the same period), strong competition from the mining and construction workers for similarly skilled labour and the influence of unions in the utilities sector.

In addition, the electricity, gas and water sector is a largely capital intensive industry whose employees have higher skill, productivity and commensurately higher wage levels than most other sectors. Further, the overall national average tends to be dragged down by the lower wage and lower skilled sectors such as the Retail Trade, Wholesale Trade, Accommodation, Cafés and Restaurants, and, in some periods, also Manufacturing and Construction. These sectors tend to be highly cyclical, with weaker employment suffered during downturns (such as the recent COVID-19 inspired downturn) impacting on wages growth in those sectors. The EGWWS sector is not impacted in the same way due to its obligation to provide essential services and the need to retain skilled labour.

Strong Union presence in the utilities industry and higher collective agreements outcomes pushes utilities wages above the All Industries average.

Trade unions are typically able to negotiate higher-than-average wage outcomes for their members through collective bargaining, resulting in stronger wage growth than the all-industry average. Across the EGWWS sector, there are a number of utilities unions such as the Communications, Electrical and Plumbing Union (CEPU) and Australian Services Union (ASU), which have a history of achieving high wage outcomes for the sector. Other unions active in the sector include the Australian Workers Union (AWU).

As at May 2018, 64.6% of full-time non-managerial employees in the EGWWS industry have their wages set by collective agreements, considerably higher than the national average of 38.4%. Over the 10 years to 2016, previous BIS Shrapnel research found that a higher proportion of workers on collective agreements was associated with higher wage growth, with a correlation coefficient of +0.6 (see Figure 5.2). As we expect that the EGWWS industry will continue to have higher levels of unionisation than the national average, we expect that unions in the EGWWS industry will continue to be able to negotiate for higher wages for a substantial proportion of EGWWS employees, resulting in EGWWS wages growing faster than the national average.

Collective bargaining dominates the pay setting arrangements in the utilities sector, while the relative absence of workers relying on (often) low-increase awards (set in the National Wage Case) means the overall average level of total utilities wages (in A$ terms) will generally be higher than the All Industries average. Over the outlook period, we expect collective agreements in the EGWWS sector to achieve average increases of 3.7%.

Figure 5.1 Wage Price Index - Australia All Industries, Electricity, Gas, Water & Waste Services, and Construction
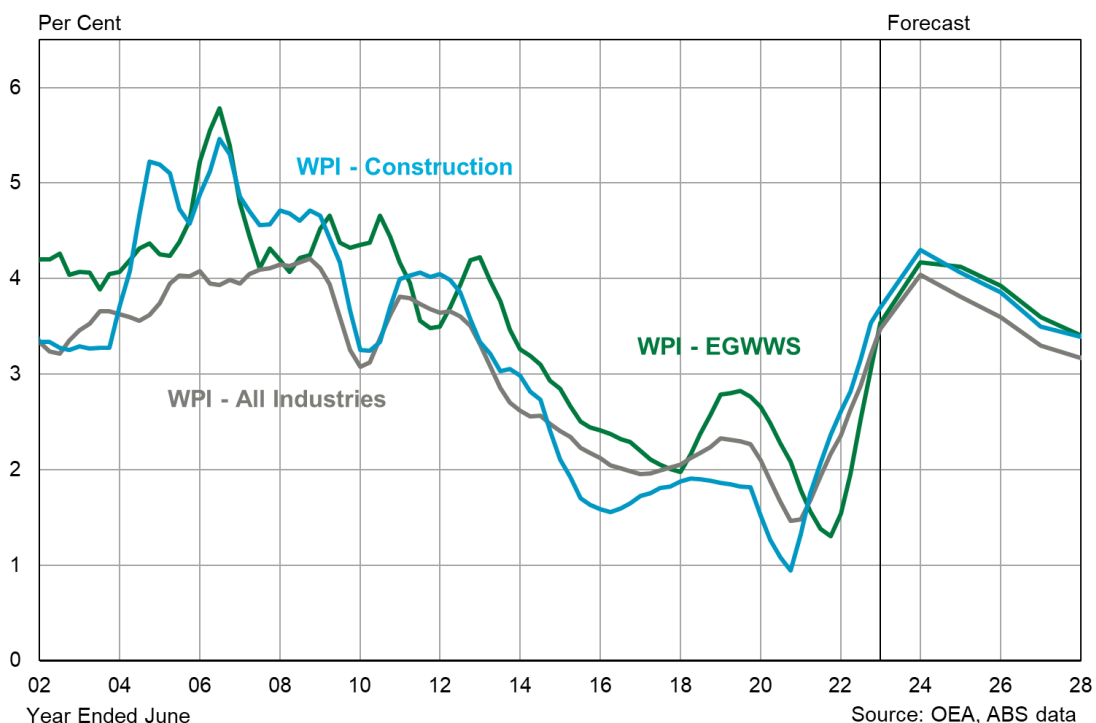
Figure 5.2 Average wage growth and unionisation rates by industry, 2007-2016
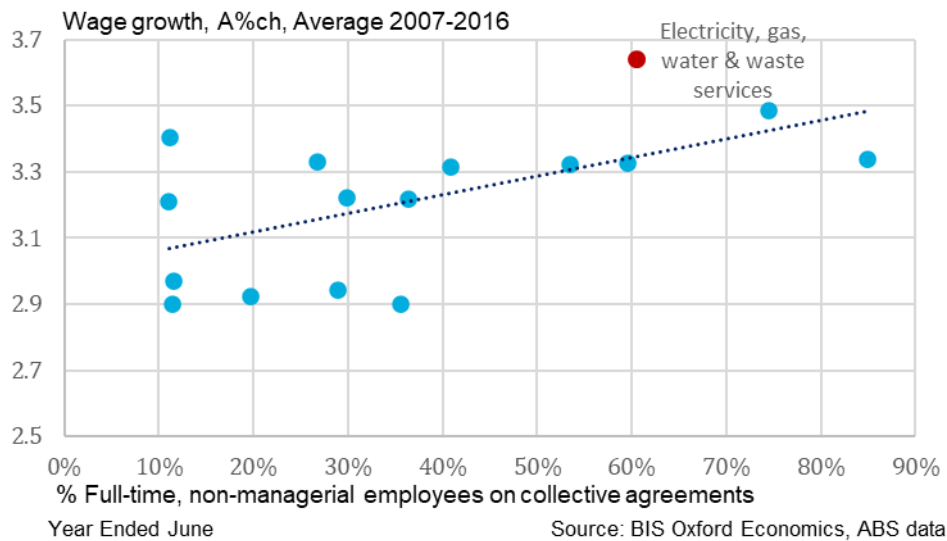
OEA's analysis shows collective agreements in the EGWWS sector were on average around 1.5% higher than CPI inflation over the 15 years to FY2014 (excluding the effects of GST introduction in 2000/01). In the six years to FY20, collective agreements were on average 1.4% above the CPI. Given the strength of unions in the sector and a still strong demand for skilled labour, collective agreements are forecast to remain around 1% above the 'official' CPI over the FY25-28 regulatory period, although this is lower than previous periods.

 As well as increases in CPI, increases in collective agreements under enterprise bargaining are also influenced by a combination of inflationary expectations, the recent profitability of relevant enterprises, current business conditions and the short-term economic outlook, and, as mentioned, by the industrial relations 'strength' of relevant unions. Because the average duration of agreements runs for two-to-three years, OEA bases its near-term forecasts of Enterprise Bargaining Agreement (EBA) wages on the strength of recent agreements, which have been formalised or lodged (i.e. an agreement has been reached or approved) over recent quarters.

EBA outcomes were relatively weak over FY21 and remain subdued in FY22 (averaging 2.5%), compared to the 5 years to FY20, when EBAs averaged around 2.9%. However, EBAs have picked up appreciably over the past three quarters, with the latest March 2023 data showing that approved EBAs have picked up to 3.7%. We expect the next rounds of EBAs negotiated in the sector to rise further over the next 1-2 years, due to several factors: CPI inflation will remain high (averaging over 7% in FY23 and over 4% in FY24); the demand for skilled labour remains strong; and the recent high enterprise agreement outcomes in the construction sector will influence negotiations in the EGWWS sector, as some skills can be transferable.

We believe investment in the sector, particularly engineering construction, has been the key driver of employment growth in the sector over the past two decades. Figures 5.5 and 5.6 illustrate this relationship, and shows employment has a much stronger relationship with utilities engineering construction rather than utilities output.

Wage increases under Individual agreements and EBAs will strengthen from 2023 due to tight supply and stronger demand for skilled labour from the Mining and Construction sectors.

Increases in individual agreements (or non-EBA wages) are primarily influenced by the strength of the labour market (especially the demand-supply balance of skilled labour), inflationary expectations, the recent profitability of relevant enterprises (which influences bonuses and incentives, etc.), current business conditions and the short-term economic outlook.

The overall labour market is expected remain very tight over the next 2-3 years, with the unemployment rate to remain between 3.5% to 4%, despite a slowing in employment growth from 4% in FY23 to around 2% over FY24 and FY25. We expect population and labour force growth to largely match employment growth, with further small increases in the participation rate. Hence, we expect to see the continuation of critical skilled labour shortages and competition for scarce labour, which are now emerging - particularly from the mining and construction sectors - which will push up wage demands in the utilities sector. Mining investment is now picking up and is forecast to see significant increases over the next 2 years to FY25 and remain at elevated levels to the end of the decade (see figure 5.3). Meanwhile, there is similar strong growth coming through in in the Construction sector, with solid increases across all segments of the overall construction sector (residential building, non-residential building and civil engineering & infrastructure construction) over FY23 to FY25, leading to strong labour demand in that sector, particularly over FY23 and FY24 when activity surpasses the 2018 levels – excluding oil and gas, where a significant proportion of the 'work done' measure is large imported components assembled on-site (see figure 5.4).

Figure 5.3 Australia – Mining Investment
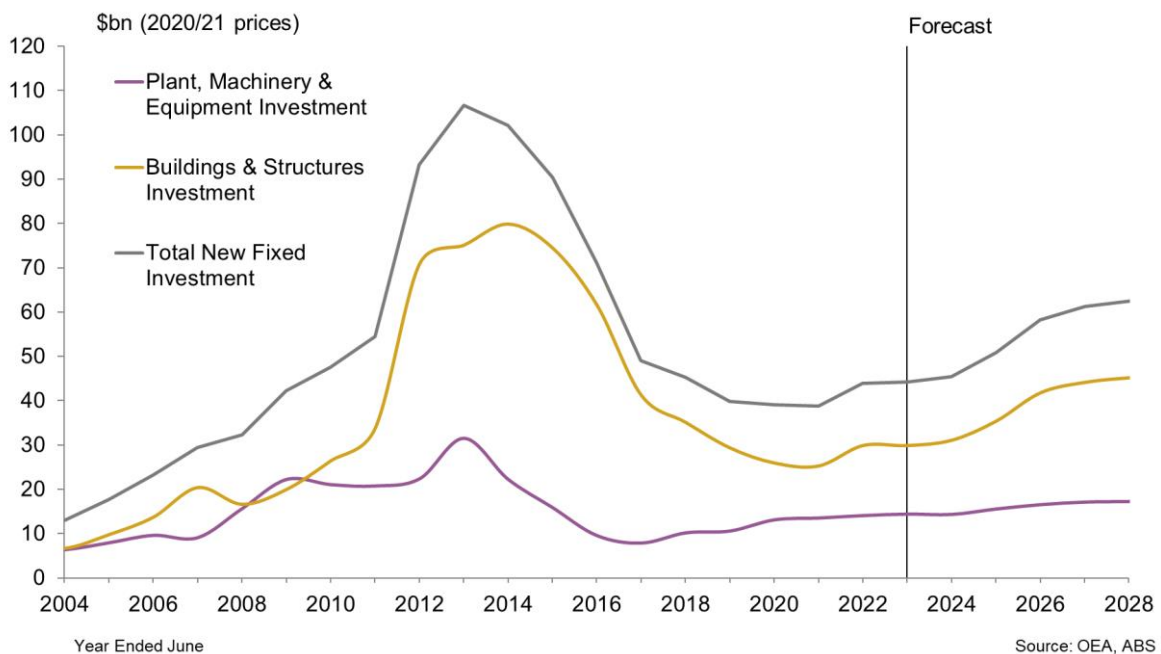
Figure 5.4 Australia – Construction Activity (real work done)
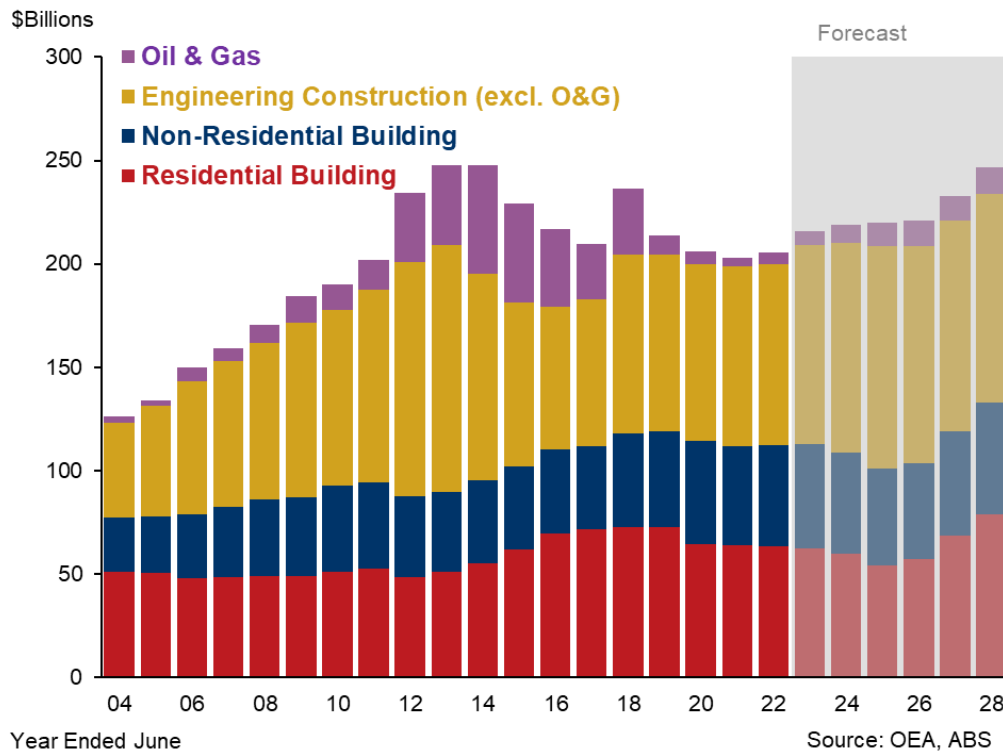
With regard to utilities investment, OEA is forecasting steady increases over the next 5 years (and beyond), with electricity-related engineering construction projected to be 30% higher in FY28 compared to FY22 levels (see chart 5.5). However, given the need for much greater amounts of transmission and distribution investment, let alone renewables generation, these projections could be considered conservative – there is a significant upside risk to the quantum of electricity-related investment required. In terms of water and sewerage-related construction (within the broader utilities investment), OEA is forecasting levels to be 21% higher in FY28, compared to FY22 levels, so there will be strong demand for skilled labour across the utilities sector.

Employers are already reporting an increasing shortage of technicians and trade workers, and employees with STEM skills. These are essential workers in the utilities sector. A key problem is that the TAFE (technical and further education) systems across the country have simply not been training enough workers. OEA research shows this is being compounded by new graduates in the trades stream, in particular, not increasing fast enough to replace retiring workers, with some numbers actually falling. Despite government announcements that they are moving to address the TAFE system, it is unlikely that these issues will be fully addressed within the next 5 years. Added to this is that skilled immigration only fully returned in the first half of 2022, after being suspended since early 2020. Although now resumed, the backlog of skilled labour shortages will be slow to fill, meaning that the skill shortages will persist for at least the next 2 years.

With strong competition for similarly skilled labour from the mining and construction industries, firms in the utilities sector will need to raise wages to attract and retain workers. In other words, the mobility of workers between the EGWWS, mining and construction industries means that demand for workers in those industries will influence employment, the unemployment rate and hence spare capacity in the EGWWS labour market. Businesses will find they must 'meet the market' on remuneration in order to

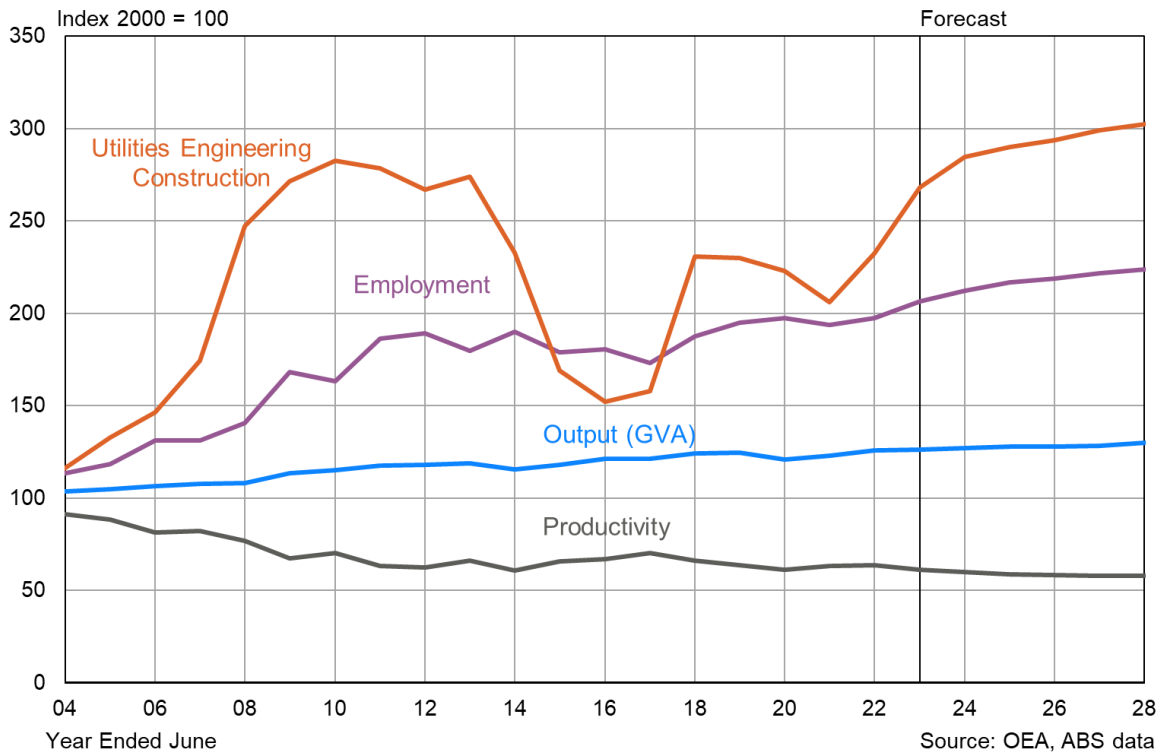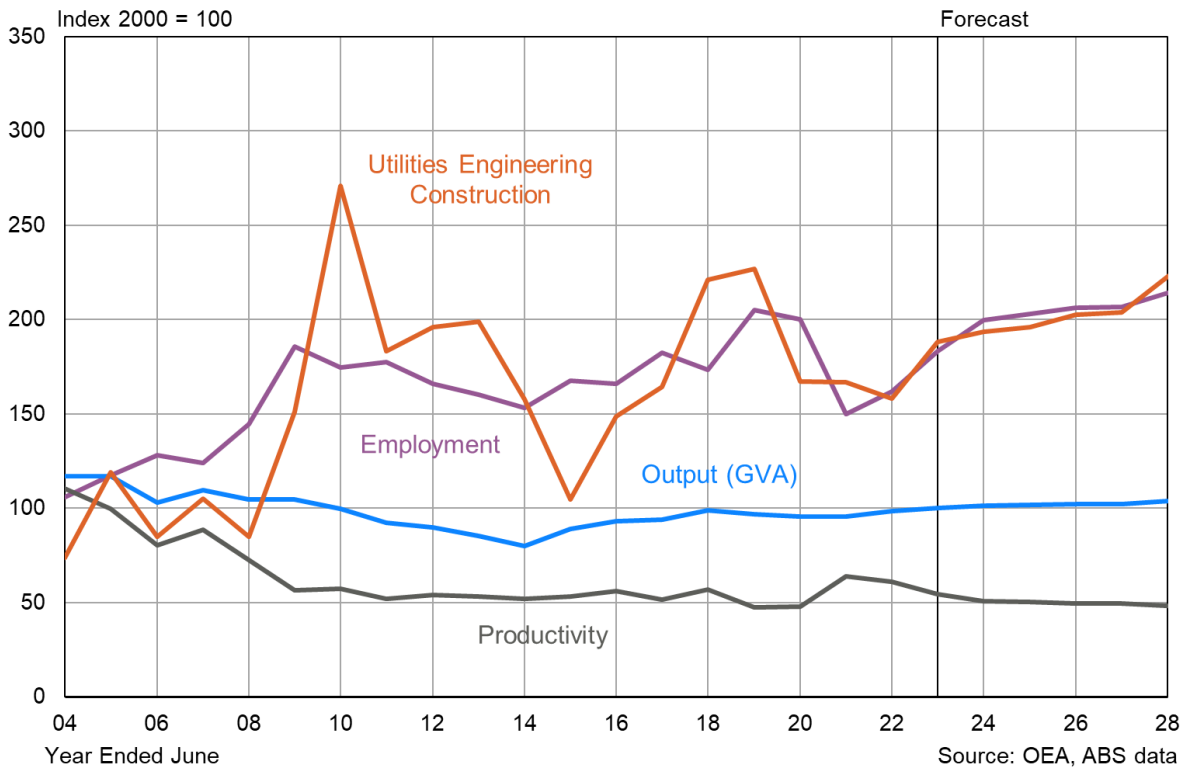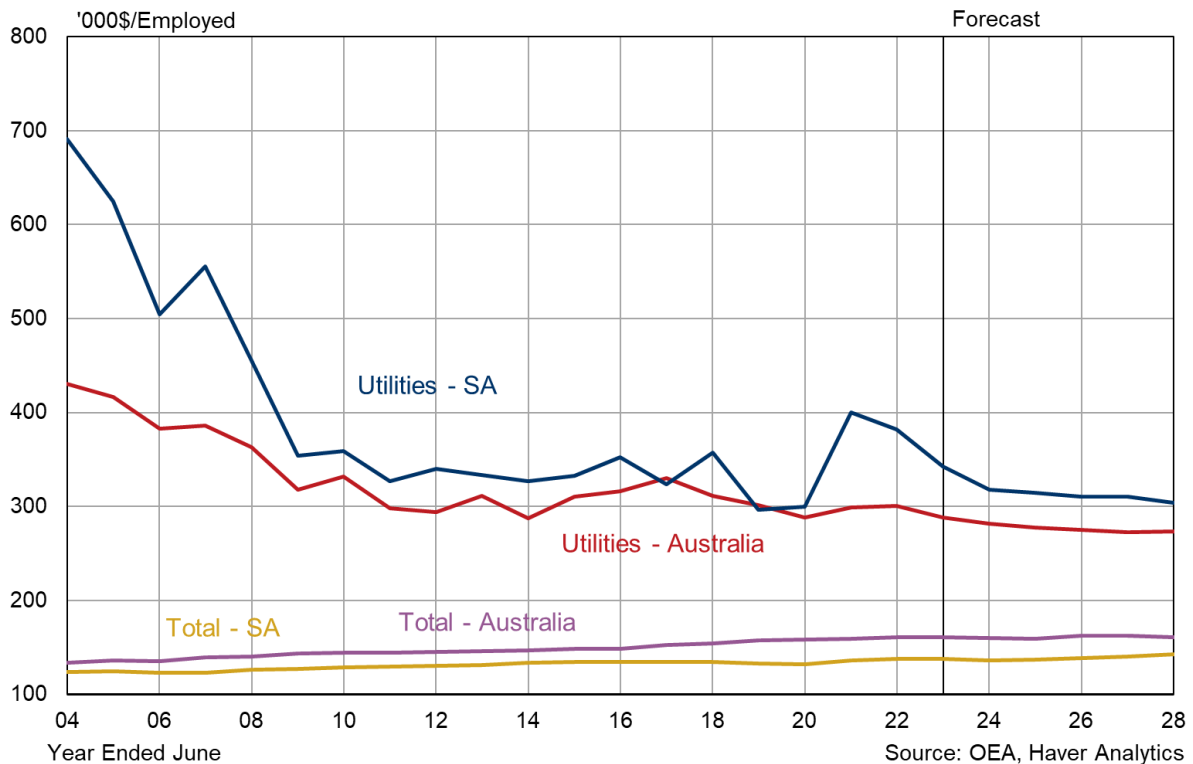**Figure 5.5 Australia – Utilities Employment, Output, Investment & Productivity**

Figure 5.6 South Australia – Utilities Employment, Output, Investment & Productivity

Figure 5.7 Utilities Productivity in Australia and South Australia

Source: OEA, Haver Analytics

attract and retain staff and we expect wages under both individual arrangements and collective agreements to increase markedly over the FY23 to FY26 period.

5.1.1 Outlook for Utilities Wages Growth in South Australia

The ABS does not provide WPI data for the Utilities sector in South Australia, providing state utilities data only for NSW, Victoria and Queensland (the latter since early 2019). These three states collectively account for around 77% of total Australian utilities employment, with South Australia accounting for 8% (and Western Australia 14%). Historical data and forecasts of WPI for the EGWWS sector in South Australia is therefore based on national EGWWS WPI forecasts, as well as movements in the 'unknown residual' for the utilities wage price index and differences in outcomes in collective bargaining in South Australia compared to the national average for the utilities sector.

South Australian EGWWS WPI growth is estimated to have declined sharply over FY21 and FY22 to 1.7% and 1.4% respectively (in nominal terms), from an estimated 2.6% in FY20, due to the impact of the COVID-19 outbreak on wages. South Australian EGWWS WPI growth is estimated to have picked up sharply to 3.7% in FY23, with a further strengthening to 4.2% in FY24. The state utilities wage growth is expected to be close to the Australian utilities WPI over the next few years, with recent SA EGWWS negotiated outcomes having been higher than the national average. However, over most of the forecast period, relative weaker utilities construction and weaker labour markets in South Australia will tend to mute the increases in the individual arrangements sector, offsetting the strength of the EBAs. South Australian EGWWS WPI growth is forecast to average 3.7% per annum in nominal terms over the four years to FY28 – or 1.0% p.a. in real (inflation-adjusted) terms (see Table 1.1).

A key element of the ongoing strength in the South Australian economy is the large amounts of defence-related expenditure in South Australia over the forecast period (and beyond), including the manufacture of naval ships, army vehicles and other structures. This will also increase the demand for

skilled labour and see the defence manufacturing sector also compete with the utilities sector for similarly skilled workers, many of which will have transferable skills across the utilities, construction, mining and manufacturing sectors. With strong competition for similarly skilled labour from the mining, construction and defence manufacturing industries, firms in the utilities sector will need to raise wages to attract and retain workers. This is expected to be accompanied by increases in utilities related construction in the state, mining-related investment and construction activity generally. The overall strengthening in the labour market, and particularly in the Construction and Mining sectors – which are key competitors to the utilities sector in terms of 'similarly' skilled workers - is expected to result in utilities WPI growth accelerating over the 2024 to 2025 period, and subsequently remain elevated – although easing - over the following three years to FY28.

5.2 CONSTRUCTION WAGES

Given service providers outsourced labour is mostly supplied by firms in the construction industry, we proxy ESCOSA's external labour cost escalation by wages growth (as measured by the WPI) in the South Australian construction industry. Our research has shown that construction activity (ie work done in the sector) normally has a strong influence on construction wages, although changes in wages tend to lag construction (in work done terms) by around one year. Hence, our wage forecasts are based on OEA forecasts of construction activity by state (which includes residential and non-residential building, plus engineering construction) as well as predicted movements in the construction wages at the national level.

Our forecast is for the Australian Construction WPI to average around 3.7% p.a. over the four-year period to FY28. While this is a marked improvement on the past five years, it is still well down on the 4.3% annual national average (nominal terms) of the decade to 2011/12. With regard to the next regulatory period, South Australian Construction wages are forecast to average 3.5% (or 0.8% in real terms) over that five-year period (see table 1.1).

Construction wages at the national and South Australian level have weakened dramatically since 2011/12 and are well below the robust increases during the construction boom. While collective agreements in the sector have maintained their relative high increases over the past 5 years – between 3% and 5% – wages growth in the individual agreements segment have been very weak. Construction employees in the individual agreements segment account for around 61% of construction employees, dominating the method of pay-setting within the sector.

The Australian Construction WPI growth recovered over FY22 to 2.6% and further to 3.7% in FY23 (in year average terms) from 1.3% in FY21. Meanwhile, the South Australian Construction WPI increased from 1.3% to 2% in FY22 and 2.3% in FY23, lagging the improvement in the Australian WPI despite similar EBA outcomes and stronger growth in construction activity. Construction wages are forecast to keep improving from FY23 as construction activity increases. Australian construction wages are expected to show strong growth over FY23 to FY26, particularly as construction activity levels surpass the previous highs of FY18 and FY13 (in 2024 - see figure 5.4) and serious skills shortages manifest. In South Australia, the levels of state construction activity surpassed the previous 2018 peak in FY22 (see chart 5.8) and are forecast to again set a new peak in FY24. Total activity then falls back in FY25 and then slowly increases and surpasses the FY24 peak in FY27, rising to a new peak in FY28. At the national level, the increases in construction activity from FY22 will be driven by further increases in residential building activity, while higher levels of non-dwelling building and rising engineering construction will also underpin higher wages due to strong labour demand and expected widespread skill shortages in the construction industry. Engineering construction will be driven by a new wave of mining investment and a plethora of publicly funded transport infrastructure projects (particularly in the eastern states of the nation).

Figure 5.8 Construction Activity in South Australia (work done, 2020/21 prices)
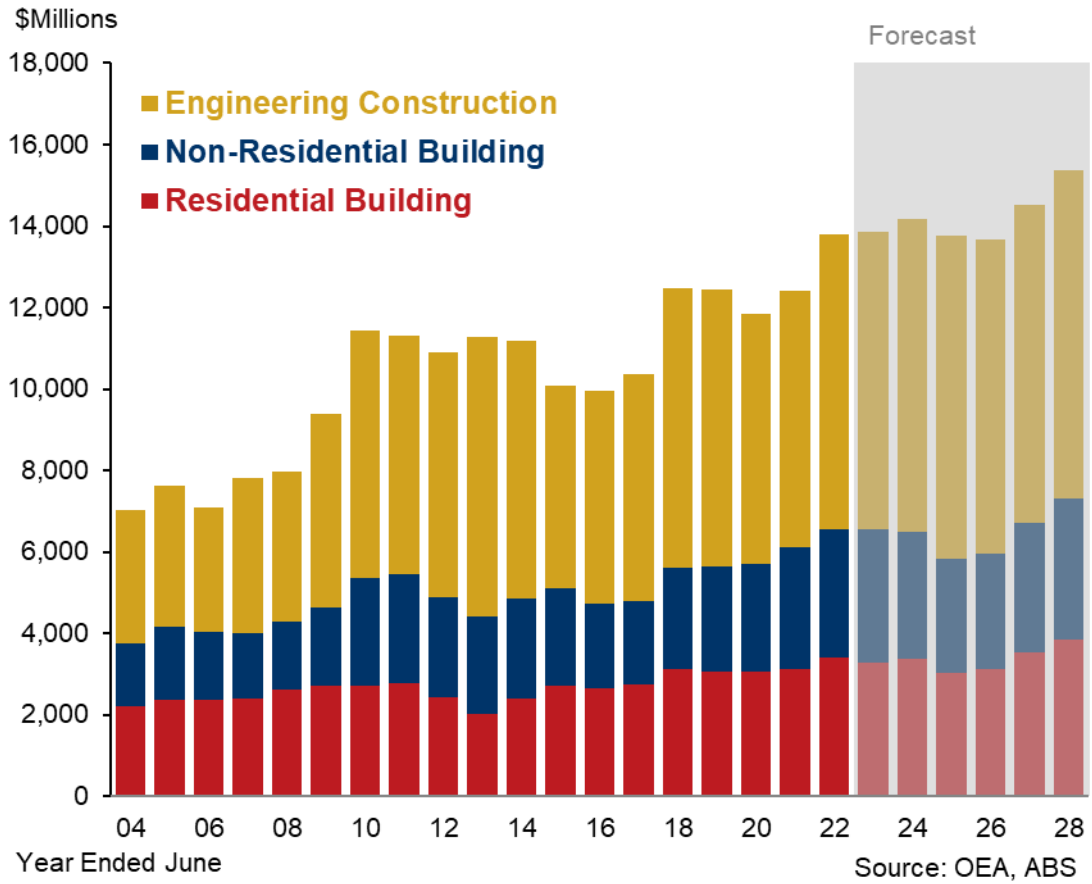
6. COMMODITY PRICE AND MATERIALS COST INDICES

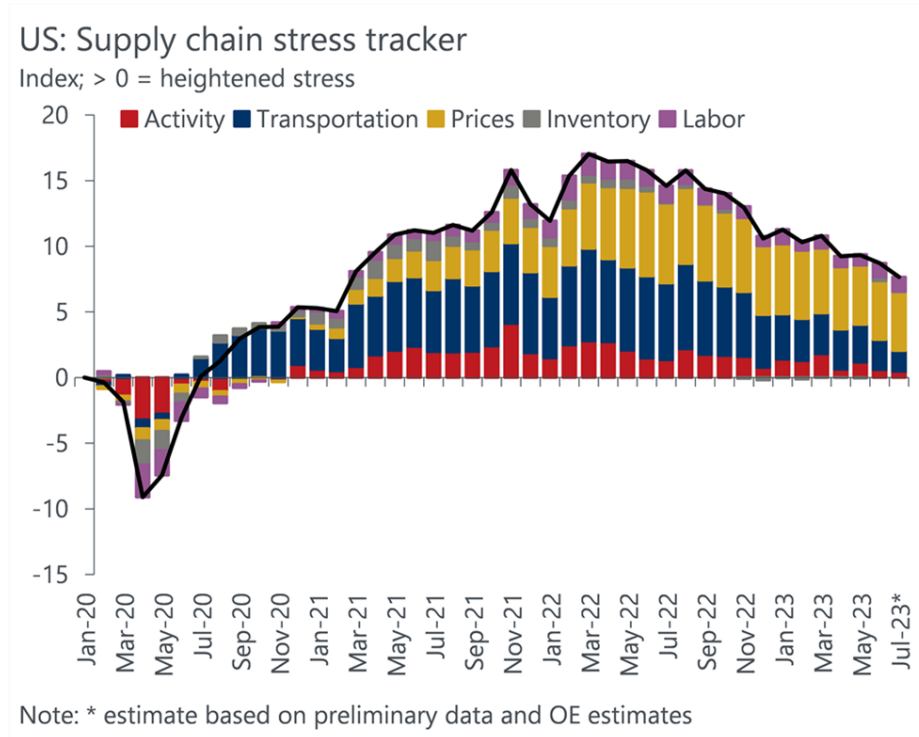**6.1 OVERVIEW - GLOBAL & AUSTRALIAN SUPPLY CHAIN PRESSURES**

Global and domestic supply chain disruptions have seen sustained easing over 2023, signalling an improvement in both logistical conditions, and reduced escalation of costs. Both the New York Federal Reserve Bank's Global Supply Chain Pressure Index (GSCPI) and Oxford Economics US supply chain stress tracker record overall conditions having now eased back to those seen in early 2021 – a time before global demand/ supply dynamics were thrown out of balance.

The GSCPI is composed of several global supply chain indicators for shipping, air freight, and manufacturing conditions. Our supply chain tracker categorises five components of supply chain stress – manufacturing capacity, transportation, input prices, inventory stock, and labour stresses. As depicted in Figures 6.1 and 6.2, supply chain stresses have continually improved since early 2022, with easing transportation bottlenecks responsible for the majority of the improvement (see Figure 6.3). The GSCPI indicates that stresses to the average global supply chain has now reverted to below average conditions as of Q1 2023, with pressures driven down by softening Chinese demand. The US supply chain stress tracker, on the other hand, still record some stress in the system due to persistently higher prices as demand for goods and services in the US remains firm. However, the indicator suggests that overall US supply chain conditions are now back to a sustainable level, similar to that seen before pressures started intensifying in 2021.
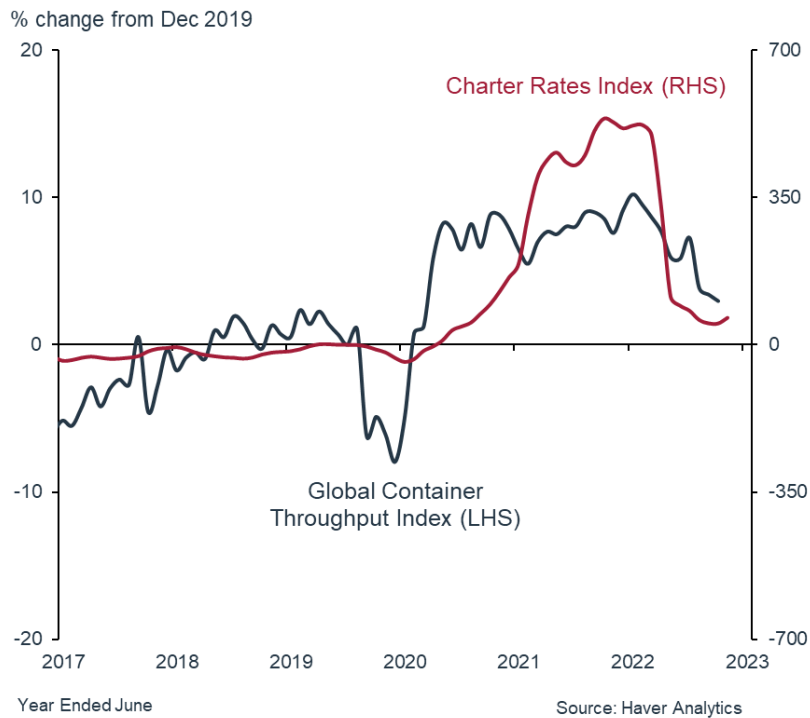
Figure 6.1 New York Federal Reserve Bank Global Supply Chain Pressure Index

Standard deviations from the average value

Source: New York Federal Reserve Bank

Figure 6.2 Oxford Economics US supply-chain stress tracker

US: Supply chain stress tracker

Index; > 0 = heightened stress

Note: * estimate based on preliminary data and OE estimates

Figure 6.3 Easing global shipping prices (Charter Rate Index) and normalisation of shipping volumes (Global Contained Throughput Index)

% change from Dec 2019

Charter Rates Index (RHS)

Global Container Throughput Index (LHS)

Year Ended June

Source: Haver Analytics

Global supply chain stresses initially built up following the onset of the COVID-19 pandemic, reaching a peak in early 2022. Pandemic-induced lockdowns restricted the manufacturing and logistics capacity of most economies, whilst a substitution away from services consumption towards goods consumption (e.g. from dinning out to electronic goods) meant demand outstripped supply of both the goods, and the ability to move them. The conflict in Ukraine only exacerbated the issue, adding to already increasing transportation and input costs as energy commodity prices skyrocketed.

The first half of 2023 has seen both easing of global shipping bottlenecks (figure 6.3) and a normalisation of consumer spending patterns. Furthermore, the tightening of credit availability, in response to a higher inflation environment, is expected to further dampen demand, and reduce pressure on manufacturing capacity utilisation and inventories.

Local supply chains

Australia's supply chain pressures have for the most part followed suit to those seen internationally. The key difference faced domestically has been the historically tight labour market, which has added supply pressures to locally produced goods and services. A recent NAB Business Survey reported that only 36% of surveyed firms identified materials as a supply concern in 2023, representing a decline of 14 percentage points since 2022. Over the near term, we expect that rising interest rates and a slowing economy will dampen goods demand, further easing any lingering supply chain pressures.

In a recent OEA survey of 30 construction industry players, we have found similar findings, with global products such as fuel, bitumen and imported equipment seeing relatively low supply risk ratings. However, the survey found that some domestic factors continue to contribute to supply risks. The availability of skilled and unskilled labour is considered the biggest challenge for the construction supply chain. The collapse of net overseas migration (NOM) during the pandemic, combined with a strong post-Covid economic recovery in Australia, has seen Australia's unemployment rate fall to multi-decade lows. While NOM has recovered strongly in the past year, Australia's total workforce population is expected to remain below pre-Covid projections.

Compounding this, certain locally sourced materials such as quarry, cement and steel have faced persistent shortages due to strong demand, and a lack of labour in key areas along the supply chain. The same survey noted that these two domestic supply chain issues are of most concern to the construction sector in 2023, a sentiment which contrasts to the global narrative. We believe these locally derived supply chain issues are close to peaking, but some pressures will persist along the supply chain, meaning they may persist for more than a year or so. With high immigration levels expected to be sustained over the coming years, this will see increases in the labour force which will slowly help alleviate the current shortage in skilled and unskilled labour. However, as discussed in the previous section, the wage pressures will be slow to dissipate.

6.2 ALUMINIUM, COPPER AND OIL PRICES

Regulators, such as the AER, have shown a preference for accepting a range of forecasts from different forecasters, and then taking an average. For the global price forecasts of Aluminium, copper and oil, we source the average price forecasts from the Consensus Economics report, *Energy and Metals Consensus Forecasts* (E&MCF), which is published every month. The Consensus E&MCF provides a wide range of different forecasters for a number of global energy and metals commodities, with prices in US$ terms. Quarterly forecasts are provided for two financial years, followed by calendar year forecasts for the next three years. Long-term forecasts are provided by a five-year average.

The latest available consensus forecast publication is August 2023, where around 28 separate forecasters supplied price forecasts out to 2032 – the average of all the forecasters is used here. The

amount of survey participants providing forecasts gradually declines to 9 for the long term 2028-2032 forecasts.

Table 6.1 Commodity and Materials Price Forecasts

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Average 25-28	Average 21-24	Average 17-20
			Actuals					Forecasts		Next Regulatory Period					
Commodity Prices (a)															
Copper (A$/tonne)	7126	8700	8591	8438	10655	13304	12320	12366	12318	12220	12146	12441	12281	12161	8214
Copper (US$/tonne)	5376	6746	6146	5663	7962	9657	8297	8443	8838	8969	8915	9131	8963	8590	5983
Aluminium (A$/tonne)	2349	2751	2683	2496	2715	3983	3475	3401	3412	3435	3471	3511	3457	3394	2570
Aluminium (US$/tonne)	1773	2133	1920	1675	2029	2891	2340	2322	2448	2521	2548	2577	2523	2396	1875
Oil (A$/barrel)	66.3	82.2	96.1	76.9	72.5	125.7	128.9	120.5	114.1	109.6	109.3	105.7	109.7	111.9	80.4
Oil (US$/barrel)	50.0	63.7	68.7	51.6	54.2	91.2	86.8	82.3	81.9	80.5	80.2	77.6	80.0	78.6	58.5
Exchange rate (US$/A$) (b)	0.75	0.78	0.72	0.67	0.75	0.73	0.67	0.68	0.72	0.73	0.73	0.73	0.73	0.71	0.73
% ch															
Copper (A$/tonne)	6.2	22.1	-1.3	-1.8	26.3	24.9	-7.4	0.4	-0.4	-0.8	-0.6	2.4	0.2	11.0	6.3
Aluminium (A$/tonne)	10.8	17.1	-2.5	-7.0	8.8	46.7	-12.8	-2.1	0.3	0.7	1.1	1.1	0.8	10.2	4.6
Oil (A$/barrel)	10.9	23.9	16.9	-19.9	-5.8	73.4	2.6	-6.5	-5.3	-3.9	-0.4	-3.3	-3.2	15.9	8.0
Nominal Fuel Prices (AUD) (c)															
Petrol (cents/litre) (SA)	118.4	128.1	141.3	136.9	125.1	166.2	177.3	171.5	161.0	157.1	155.7	153.9	156.9	160.0	131.1
Diesel (cents/litre) (SA)	121.7	133.3	146.6	136.1	120.6	170.4	199.2	176.5	168.2	162.7	161.1	159.0	162.7	166.7	134.4
% ch															
Petrol (cents/litre) (SA)	4.0	8.2	10.3	-3.1	-8.6	32.8	6.7	-3.3	-6.1	-2.4	-0.9	-1.2	-2.6	6.9	4.9
Diesel (cents/litre) (SA)	4.0	9.5	10.0	-7.2	-11.4	41.3	16.9	-11.4	-4.7	-3.3	-0.9	-1.3	-2.6	8.8	4.1
Nominal Material Producer Price Indices (PPI)															
Steel Beams and Sections PPI (Australia) (d)	105.0	107.3	112.7	112.9	118.7	155.2	162.7	149.8	152.0	155.2	159.6	167.1	158.5	146.6	109.4
Steel Pipe & Tube PPI (Australia) (e)	105.2	99.2	105.7	103.5	104.2	147.9	156.6	131.3	124.1	121.4	120.8	121.6	122.0	135.0	103.4
Concrete, Cement & Sand PPI (SA) (d)	101.7	104.2	105.9	104.9	104.3	105.3	109.9	115.4	118.3	120.6	123.5	127.3	122.4	108.8	104.2
Polyethylene Pipe Index (Australia) (f)	109.5	113.3	118.8	106.2	103.1	119.7	124.9	120.8	119.5	119.3	120.6	121.1	120.1	117.1	112.0
Chemical Prices (Australia) (e, g)	99.7	107.5	123.8	119.2	119.1	128.5	180.2	183.6	168.1	163.1	166.9	166.9	166.2	152.9	112.5
Electricity Prices (SA) (h)	124.4	142.4	154.3	150.7	136.4	140.0	156.2	174.3	170.4	167.0	165.7	171.9	168.8	151.7	143.0
% ch															
Steel Beams and Sections PPI (Australia) (d)	3.5	2.2	5.0	0.2	5.1	30.8	4.8	-7.9	1.4	2.2	2.8	4.7	2.8	8.2	2.7
Steel Pipe & Tube PPI (Australia) (e)	5.9	-5.7	6.6	-2.2	0.7	42.0	5.9	-16.2	-5.4	-2.2	-0.6	0.7	-1.9	8.1	1.2
Concrete, Cement & Sand PPI (SA) (d)	1.7	2.4	1.7	-1.0	-0.5	1.0	4.4	4.9	2.5	1.9	2.4	3.1	2.5	2.4	1.2
Polyethylene Pipe Index (Australia) (f)	-3.8	3.5	4.8	-10.5	-2.9	16.0	4.4	-3.3	-1.1	-0.2	1.1	0.4	0.1	3.5	-1.5
Chemical Prices (Australia) (e, g)	-1.7	7.9	15.2	-3.7	-0.1	7.9	40.3	1.9	-8.5	-3.0	2.3	0.0	-2.3	12.5	4.4
Electricity Prices (SA) (h)	7.0	14.4	8.4	-2.3	-9.5	2.6	11.6	11.6	-2.2	-2.0	-0.8	3.7	-0.3	4.1	6.9
Nominal Broad Construction Price Indice															
Water Supply & Sewerage Engineering Construction IPD (i)	168.4	170.7	176.0	180.8	184.7	194.4	207.4	215.0	221.0	227.5	234.3	241.8	231.2	200.4	174.0
% ch															
Water Supply & Sewerage Engineering Construction IPD (i)	0.1	1.3	3.1	2.7	2.2	5.2	6.7	3.6	2.8	2.9	3.0	3.2	3.0	4.4	1.8
Consumer Price Index - headline (j)	1.7	1.9	1.6	1.3	1.6	4.4	7.0	4.2	3.2	2.7	2.5	2.5	2.7	4.3	1.7
Real Commodity Price Changes (k)															
Copper (A$/tonne)	4.4	20.2	-2.9	-3.1	24.6	20.4	-14.4	-3.8	-3.6	-3.5	-3.1	-0.1	-2.6	6.7	4.6
Aluminium (A$/tonne)	9.1	15.2	-4.1	-8.3	7.2	42.3	-19.8	-6.3	-2.9	-2.0	-1.4	-1.4	-1.9	5.8	3.0
Oil (A$/barrel)	9.2	22.0	15.3	-21.3	-7.4	68.9	-4.5	-10.7	-8.5	-6.6	-2.9	-5.8	-5.9	11.6	6.3
Real Fuel Prices (AUD) (l)															
Petrol (cents/litre) (SA)	2.3	6.3	8.6	-4.4	-10.2	28.4	-0.3	-7.5	-9.3	-5.1	-3.4	-3.7	-5.4	2.6	3.2
Diesel (cents/litre) (SA)	2.3	7.6	8.3	-8.5	-13.0	36.9	9.9	-15.6	-7.9	-6.0	-3.4	-3.9	-5.3	4.5	2.4
Real Material Producer Price Indices (PPI) (l)															
Steel Beams and Sections PPI (Australia) (d)	1.8	0.2	3.4	-1.2	3.5	26.4	-2.2	-12.1	-1.8	-0.5	0.3	2.2	0.1	3.9	1.1
Steel Pipe & Tube PPI (Australia) (e)	4.2	-7.6	4.9	-3.5	-0.9	37.5	-1.1	-20.4	-8.6	-4.9	-3.1	-1.8	-4.6	3.8	-0.5
Concrete, Cement & Sand PPI (SA) (d)	0.0	0.5	0.0	-2.3	-2.1	-3.5	-2.6	0.7	-0.7	-0.8	-0.1	0.6	-0.2	-1.9	-0.4
Polyethylene Pipe Index (Australia) (f)	-5.5	1.5	3.2	-11.9	-4.6	11.6	-2.7	-7.5	-4.3	-2.9	-1.4	-2.1	-2.7	-0.8	-3.2
Chemical Prices (Australia) (e, g)	-3.4	5.9	13.5	-5.1	-1.7	3.4	33.2	-2.3	-11.7	-5.7	-0.2	-2.5	-5.0	8.2	2.8
Electricity Prices (SA) (h)	5.3	12.5	6.8	-3.7	-11.1	-1.8	4.6	7.4	-5.4	-4.7	-3.3	1.2	-3.0	-0.2	5.2
Real Broad Construction Price Indice (l)															
Water Supply & Sewerage Engineering Construction IPD (i)	-1.7	-0.6	1.5	1.4	0.5	0.8	-0.3	-0.6	-0.4	0.2	0.5	0.7	0.3	0.1	0.2

Source: ABS, Oxford Economics Australia

(a) Forecasts from September quarter 2023 to FY28 come from latest monthly Consensus Economics publication, "Energy & Metals Consensus Forecasts".
(b) Forecasts from December quarter 2023 to FY28 come from latest monthly Consensus Economics publication, "Asia Pacific Consensus Forecasts".
(c) Historical figures (terminal gate prices) come from Australian Institute of Petroleum.
(d) Historical figures come from Table 18 of ABS release 6427 "Input to the House construction industry".
(e) Historical figures come from Table 12 of ABS release 6427 "Output of Manufacturing Industries".
(f) Polyethylene pipe prices are proxied using Manufacturing Wages, Road Transport Output PPI and Polymers of ethylene - primary forms (HTISC code 3901). Polymers of ethylene - primary forms is primarily driven by Crude Oil.
(g) Chemical prices are proxied by the Australian Basic Chemical Manufacturing Producer Price Index (PPI). Historical figures come from Table 12 of ABS release 6427 "Output of Manufacturing Industries".
(h) Electricity prices are proxied by the Electricity Input to the Manufacturing Industries PPI. Historical figures come from Table 13 of ABS release 6427 "Input to the Manufacturing industries".
(i) Historical figures come from the ABS Engineering Construction Service series, provided as an unpublished 'Special Run' series.
(j) Inflation forecasts are RBA forecasts for the next 2-3 years from latest 'Statement of Monetary Policy'. Beyond that, inflation forecasts are based on the mid-point of RBA inflation target (2.5%).
(k) Real price changes are calculated by deducting the inflation rate from nominal price changes.

These US$ forecasts were converted into A$ terms using consensus forecasts of exchange rates. Exchange rate forecasts are available for the next two years from the Consensus Economics *Asia Pacific Consensus Forecasts* (APCF) publication. The US$/A$ exchange rate is then held constant at the last APCF forecast point over the longer term. Overall, the exchange rate is predicted by the large range of forecasters supplying forecasts to the Consensus Economics survey. The Australian dollar is heavily influenced by movements in Australia's basket of commodity prices and interest rate relativities between Australian and overseas interest rates (particularly US interest rates). The A$ averaged US$0.67 in FY23 and is forecast to hold in FY24, at US$0.68. The Consensus Economics APCF forecasts then project an appreciation in the A$ back to US$0.72 in FY25 and then US$0.73 in FY26 to FY28.

Aluminium prices fell to an average of US$1675/tonne in FY20 due to Covid-related demand concerns, but subsequently rebounded and experienced robust growth of 21% in FY21 to US$2029/t (+8.8% in A$ terms, to A$2715/t). Aluminium production was hampered over 2021 and into 2022 by power shortages in China, with many energy-intensive smelters shutting down. With production constrained and demand recovering, stock levels on the LME fell, leading on-warrant inventories to reach 14-year lows and aluminium surpassing the US$3,500/t mark in March 2022 – the highest level since June 2008. Prices then fell sharply in the June quarter but still averaged US$2,891/t (A$3,983/t) in FY22.

Aluminium prices have since corrected from their FY22 historic high, falling back -19% to US$2,340/t in FY23 as supply stepped up to meet demand. Prices are forecast to stabilise in FY24 as current interest rate rises slows down the global economy, and so demand for commodities. Consensus forecasts then see Aluminium prices pick up 5.4% in FY25 (in USD) as the global economy strengthens from slower growth the previous year. As base metal demand is heavily tied to global economic growth, any cyclical downturn will drag commodity prices alongside it. Therefore, we expect prices to rise gradually over the long term. A key factor pushing up prices over the long term will be higher electricity prices, a significant input into aluminium (and often alumina) production.

Overall, **Consensus aluminium prices** are expected to average US$2,523/t over the four years from FY25 to FY28 (the next revenue determination period) – 5.3% higher than the previous four-year average of US$2,396/t (the current revenue determination period); although this will be somewhat mitigated by a slightly higher Australian dollar – with Aluminium prices to average 1.9% higher in Australian dollar terms.

Brent oil prices jumped in FY22 to US$91/brl (increasing in A$ terms by 73% to A$126/brl), as the rebound in global demand post covid was exacerbated by a supply shock mainly due to the Russian invasion of Ukraine and subsequent trade restrictions and supply disruptions. Global oil supplies improved over 2023, but and with global demand remaining resilient despite prospects for recession, oil prices remained elevated, correcting downward by only -4.8% to average US$87/brl over FY23.

Consensus oil prices are projected to decline -5.2% to US$82/brl in FY24, with continual price declines each year, averaging -1.5% annually out to FY28. Over the next revenue determination period, the consensus oil price is forecast to average US$80pb, which will be 1.8% higher than the previous four-year average of US$80pb. Consensus forecast oil prices to fall back modestly from FY25 to FY28, with oil to average around US$78-82/brl over the four-year period as supply and demand normalise. However, demand and supply will trend in opposite directions over the second half of the 2020s. Demand will continue to rise as economies expand (despite intensifying electrification), and supply will be constrained due to the expectation of inadequate investment over the coming years, and also due to the depletion of cheaper and easier to access oil (especially in the US). An expected appreciation in the A$ will keep A$ oil prices steady, to average around A$106-114/brl (see table 6.1).
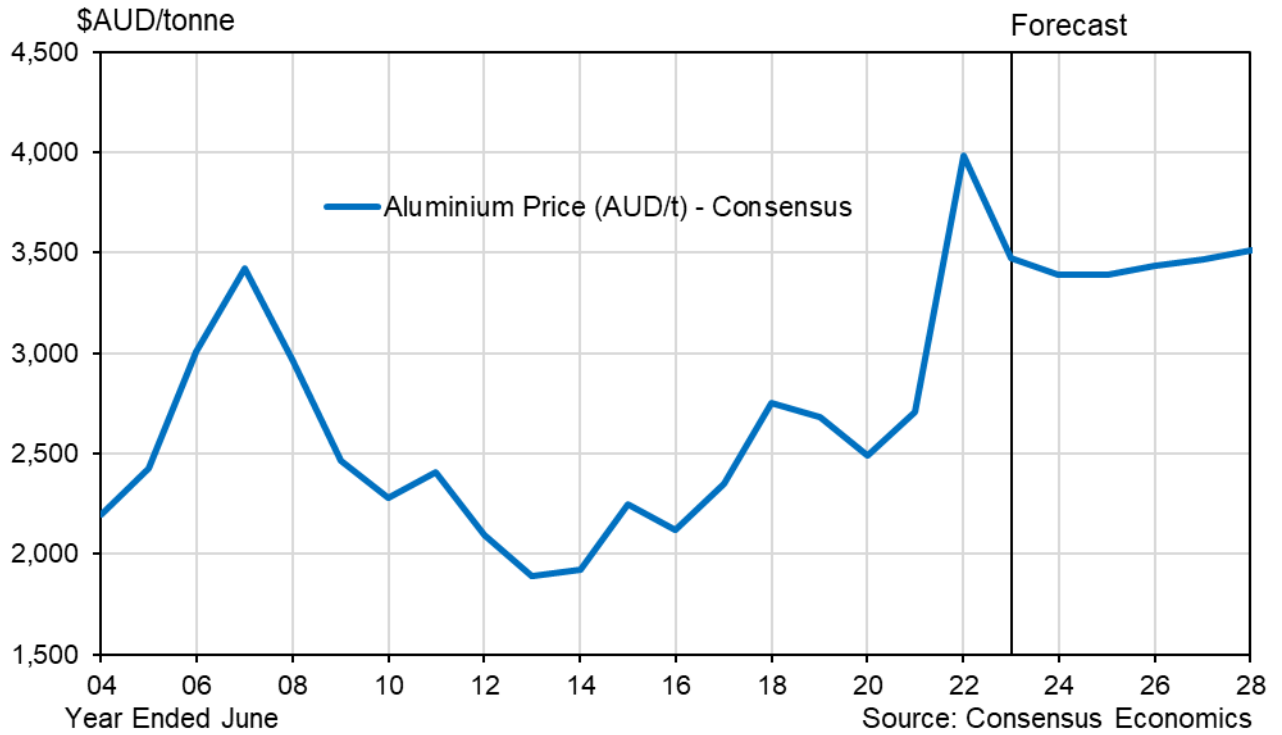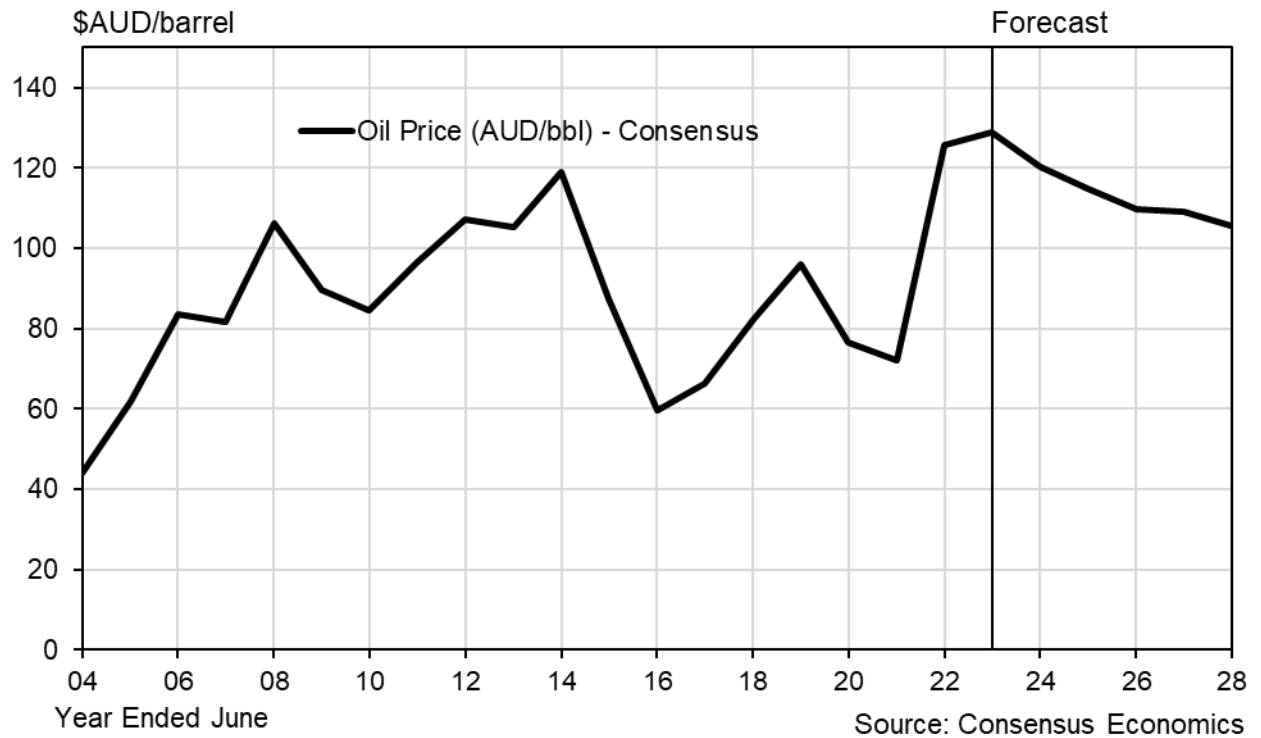
Figure 6.4 Aluminium Price Forecasts

Figure 6.5 Oil Price Forecasts

Copper is an industrial metal and its usage is seen as a barometer of global industrial activity and economic growth. Copper prices fell -7.8% in FY20 to an annual average below US$5,700/t. Subsequently, acute production problems due to covid disruptions and the recovery in demand saw prices surge 40.6% in FY21, to an annual average of just under US$8,000/t. While the Big 4 copper producers (BHP Billiton, Coldelco, Freeport McMoran and Glencore) aimed to increase copper production over 2021, reduced investment activity throughout the pandemic has thinned the pipeline of project development. Over FY22, signs of increased supply began to appear, despite continued production issues in Chile (due to strikes and water shortages). However, prices increased 21.3% in FY22, averaging US$9657/t (a 25% increase in A$ terms to A$13,304/t). Like most commodity prices over FY23, copper prices corrected off their FY22 high, falling -14.2% to US$8,286/t. US$ prices are expected to slowly drift up over the forecast period. Stronger copper price growth is driven by strengthening demand at a time of slower growth in supply – the latter due to weak investment over the past few years and high energy prices. On the demand side, demand is driven by the increased electrification of the global economy needed to cut greenhouse emissions.

Over the next revenue determination period (FY25 to FY28), **Consensus copper prices** are expected to average A$12,281/t, which will be 1.0% higher than the previous 4-year average of A$12,161/t.

Figure 6.6 Copper Price Forecasts
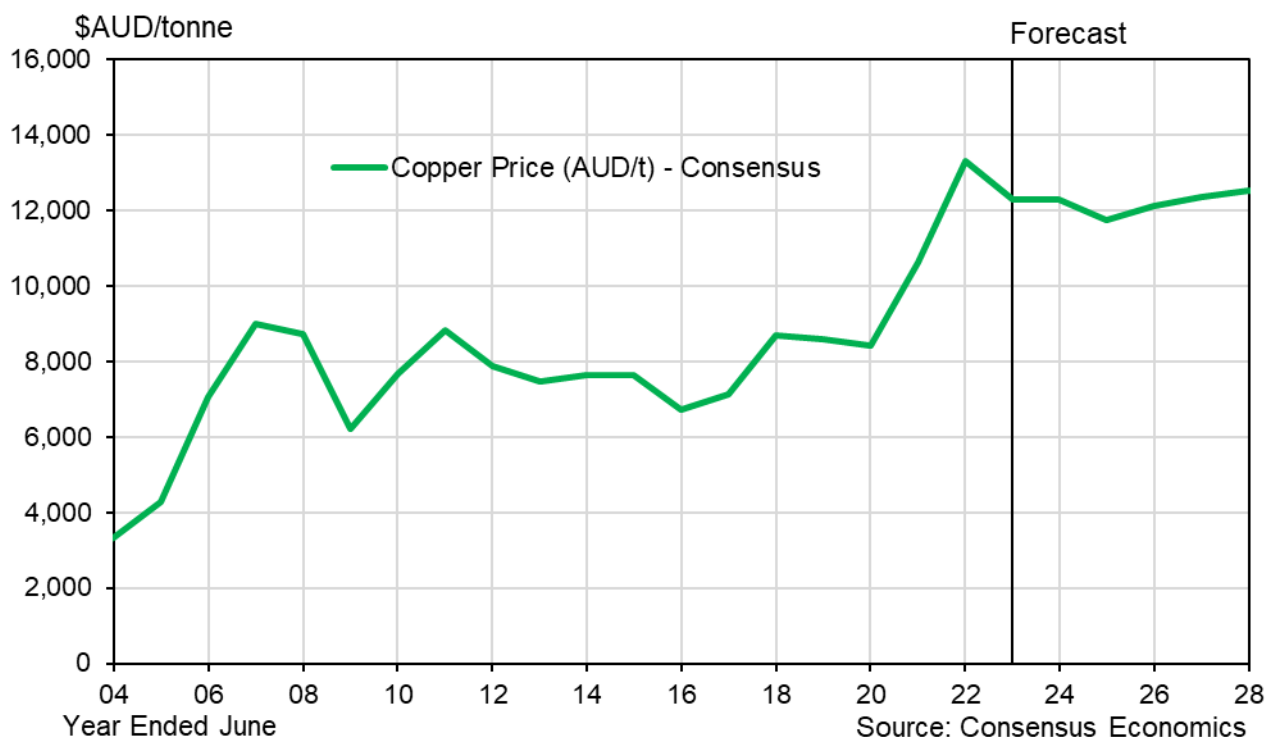
6.3 FUEL PRICES

Movements in South Australian diesel and petrol prices generally follow Australian fuel prices (as an average of state fuel prices published by the Australian Institute of Petroleum – AIP), which in turn track global oil prices (in A$ terms), but with less amplitude. This difference between Australian gate prices for diesel and petrol and global oil price movements are usually the result of refiner margins,

transport costs or competition within the region, while changes to government fuel excise (which is now indexed to CPI inflation) also play a role.

The oil price shock in the first half of 2020 gave way to a corresponding dip in the price of fuel – with diesel prices falling around 9% annually in FY20 and FY21, and petrol around 6%. With the onset of the war in Ukraine and the subsequent energy crisis, oil prices then shot up in early 2022. Brent crude oil prices in A$ terms jumped 73% in year average terms in FY22, while diesel and petrol prices increased 41% and 33%, respectively - with the cut to the fuel excise in the June quarter muting the overall price increase at the bowser. With the temporary fuel excise cut (worth around 22 cents per litre) finishing in the December quarter, and with refiner margins expected to have widened again, diesel and petrol prices rose higher than oil, at 17% and 7%, respectively, compared to oils 2.6% increase.

South Australian diesel and petrol prices are expected to fall -11%, and -3%, to average 177 c/l and 172 c/l, respectively, in FY24. As oil prices are expected to weaken again in FY25, fuel prices will fall around 5%. Over the four years to FY28, a sustained decline in Consensus oil prices will drive diesel and petrol prices down by -2.6% annually, with diesel to average 163 c/l and petrol 157 c/l.

Figure 6.7 Diesel and Petrol Price Drivers – South Australia
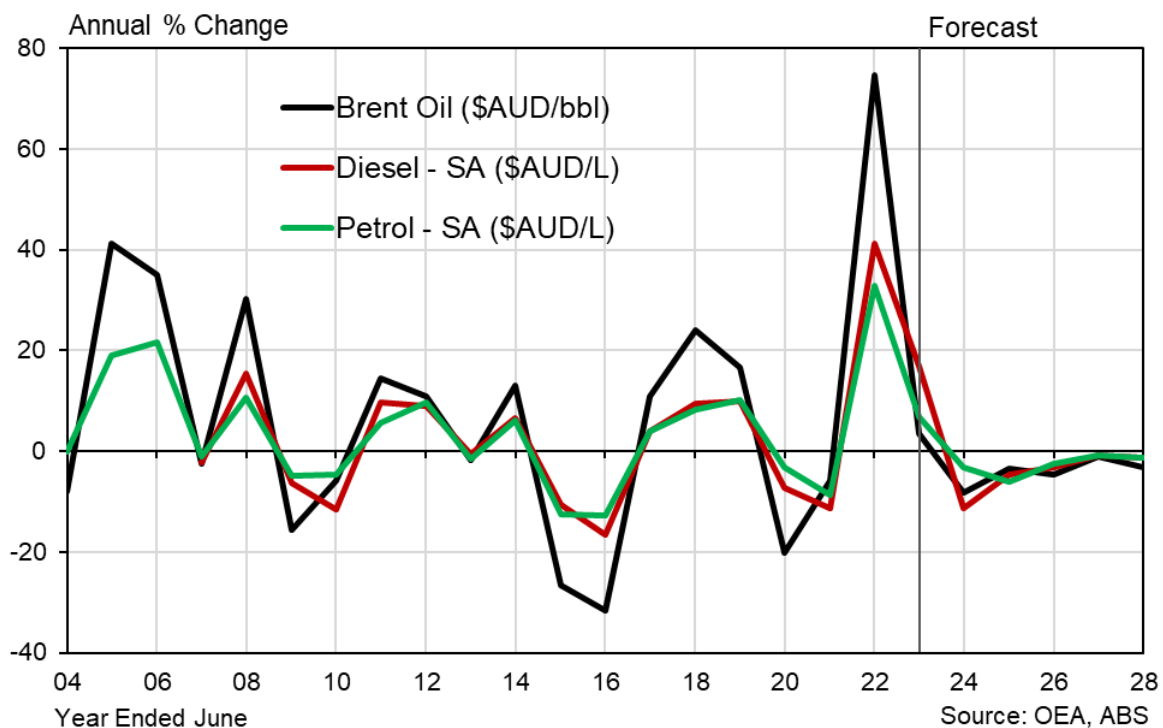
6.4 POLYETHELYNE PIPE PRICES

As no Producer Price Index exists for polyethylene pipes, a polyethylene pipe price index has been constructed using a weighted mix of three key drivers: underlying polyethylene (PE) prices, manufacturing wages and transport costs. Historical polyethylene prices are based on the import prices of 'Polymers of ethylene, primary forms' - HTISC code 3901. These import prices have a very good fit with the benchmark 'PE Pipe Black HDPE 100 CFR Asia SE' price, as shown in figure 6.7. PE prices are strongly linked to crude oil prices and exchange rates. Manufacturing wages are driven by

the OEA's wage model, transport costs are based on forecasts of the Road Freight PPI and overheads inputs are indexed to CPI inflation.

Figure 6.8 Polyethylene and Benchmark SE Asian Polyethylene Pipe Comparison

Source: Redshift Trade Database, AGIG
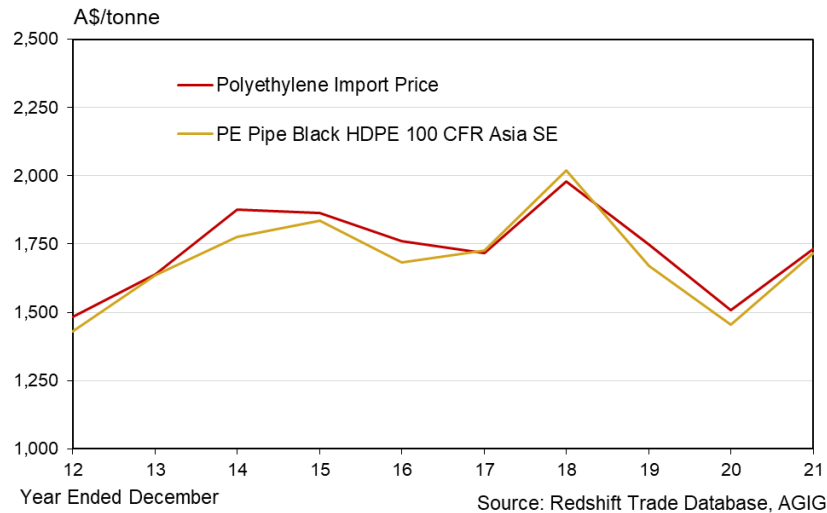
Figure 6.9 Polyethylene Pipe Price Drivers - Australia

Source: OEA, ABS
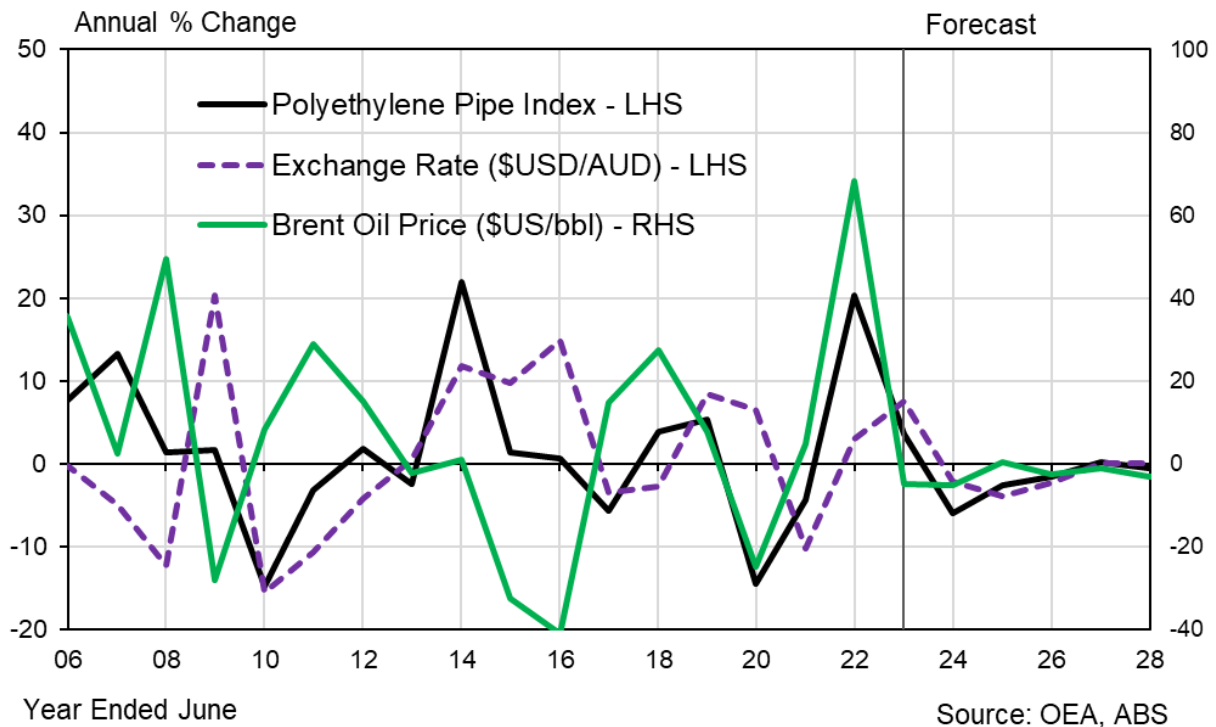
PE pipe prices saw strong growth over FY22, with a 68% increase in oil prices (USD) driving an estimated 16% rise in the price of PE pipe. Despite oil prices falling back -4.9% in FY23, a depreciation in Australia's exchange rate (making imports more expensive), and higher wage growth saw moderate upward pressure on PE pipe prices, which lifted 4.4%. PE Pipe prices are forecast to

fall back -3.3% in FY24 as the Australian dollar appreciates and oil prices continue to ease. Prices are then forecast to remain relatively stable over the remainder of the forecast period as declines in oil prices are offset by higher manufacturing wages growth and transport costs.

6.5 STEEL PRICES

Steel prices are largely driven by movements in the main input costs of iron ore and coking coal, which are determined on international commodity markets, while there are also local influences such as manufacturing wages, energy costs and the strength of construction activity, which is the main market for steel. Other global factors may also have an influence, such as the degree of over- or under-supply or demand influences in global steel production. In terms of the latter, substantial increases in Chinese steel production capacity over the 1990s and 2000s tended to constrain steel prices, compared to movements in the commodity inputs. However, over recent years, China has been closing old, inefficient and high-polluting capacity, and this and other reductions in global oversupply has helped improve steel prices and margins. Steel prices now tend to be more influenced by movements in their input prices.

The **Steel Beams & Sections (SB&S) PPI** has had a consistently tight relationship with the primary input prices – i.e. the prices for iron ore and metallurgical coking coal. This was particularly apparent in FY22, where the soaring iron ore and coking coal prices coincided with a rise in the SB&S PPI of 30.8%. Correspondingly, falling commodity prices over the first half of FY23 has seen the first quarterly price declines in the PPI in around two years. Despite the collapse in iron ore prices and falling international steel prices over 2023, higher prices over the second half of 2022 has meant domestic steel prices overall sat 4.8% higher in FY23, with rising construction activity (and thus demand for steel) allowing local markets to maintain higher price levels in combination with difficulties procuring Chinese steel due to relatively weak production levels and still-high shipping costs.

Moving into FY24, we expect large commodity price corrections to continually feed through to steel prices. However, with continued demand from domestic construction activity, prices are forecast to fall by only -7.9%. As commodity prices continue to ease over FY25, and construction activity stabilises, steel prices are forecast to grow by just 1.4% nominally, with real decline of -1.8%. As demand begin to pick up over the back half of the 2020's, driven by strengthening investment in residential and non-residential construction, and the iron ore and coking coal prices normalise, upward pressure on SB&S prices are expected to resume. Overall, SB&S prices are forecast to rise 2.2% in FY26, 2.8% in FY28 and strengthen to 4.7% in FY28. We note that there may exist downside risk to steel prices over the next few years as China's economy slows, and their domestic demand for steel weakens. This scenario could result in Chinese steel produces supplying the global market with cheaper steel, and, as Australia is a readily accessible trade destination, could drive down prices paid domestically.

The **Steel Pipe and Tube PPI** too has a strong relationship with the primary input of iron ore and coking coal. However, additional manufacturing costs and the exchange rate often play a more influential role in setting prices. Such was apparent over FY10 to FY12 when a strong Australian Dollar made importing steel products cheaper than domestically manufactured goods, hence steel pipe prices fell around 34% over the three years to FY12.

Steel pipe and tube prices shot up 42% in FY22, driven predominately by higher commodity prices, but with additional upward cost pressures stemming from increased manufacturing costs and strong demand from the construction sector. Price growth has since eased over FY23 as iron ore and coking coal prices have corrected. However, an additional 5.9% increase over the year was recorded, owing to generally higher manufacturing costs via strong wage growth and high energy prices.

As general inflation eases off over the next year, the correction of commodity prices will feed through to steel pipe and tube prices, with are forecast to fall back -16% in FY24, and a further -5.4% in FY25.
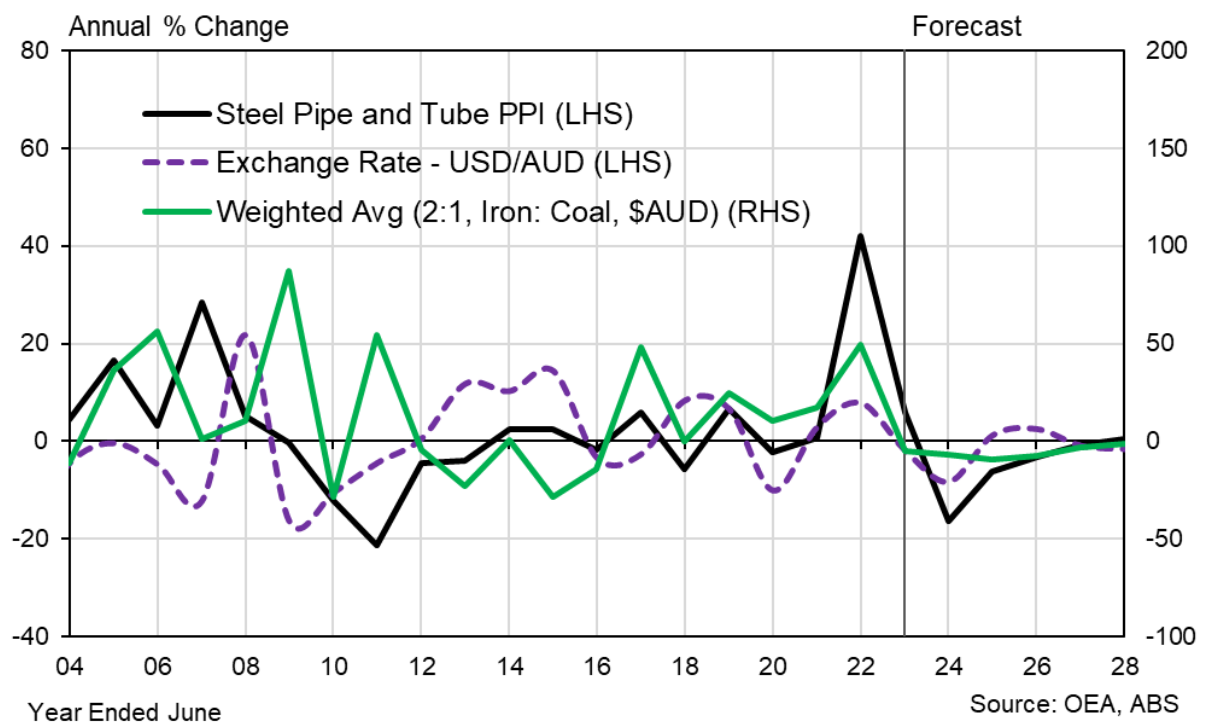
With a Consensus forecast for easing iron ore and cocking coal prices over the back half of the 2020's, steel pipe and tube prices are expected to weaken slightly, with an annual average decline of -0.7% over the three years to FY28.

Figure 6.10 Steel Beams and Sections PPI Price Drivers - Australia
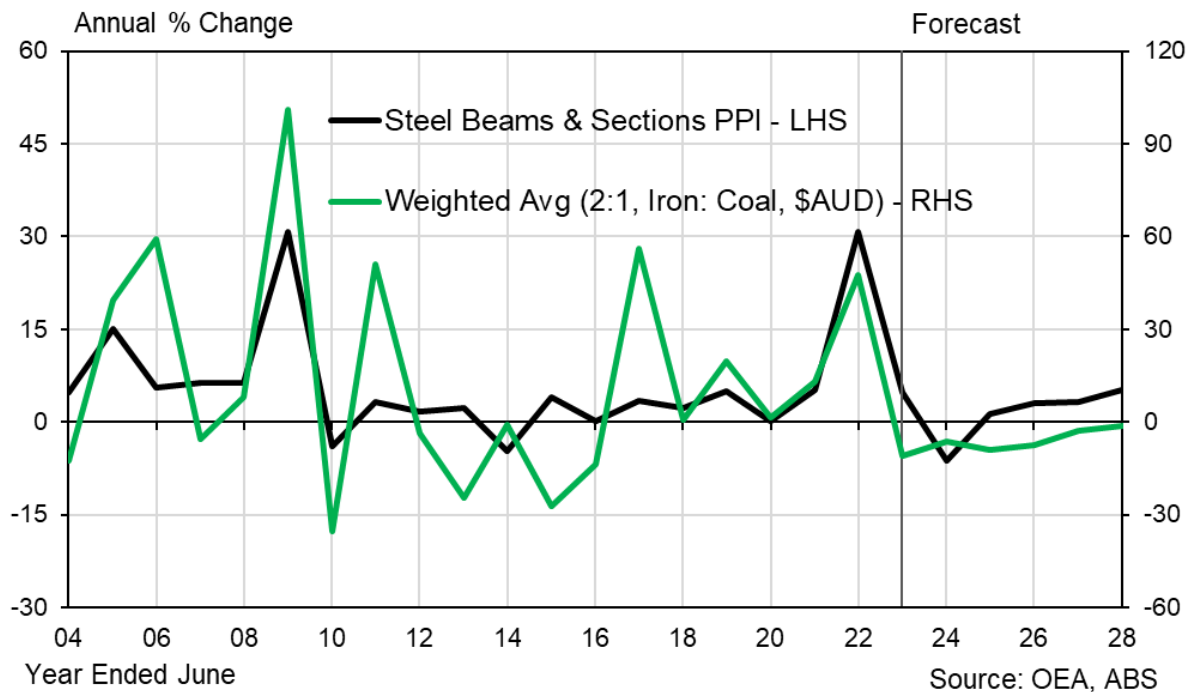
**Figure 6.11 Steel Pipe and Tube PPI Price Drivers - Australia**

6.6 CONCRETE

We proxy the escalation of pre-mixed concrete in South Australia with the Adelaide 'Concrete, Cement and Sand' PPI. The Concrete, Cement & Sand PPI is heavily driven by the overall level of construction activity in the economy, both from building construction, and engineering construction.

With demand in the South Australian building construction sector picking up in FY21 and FY22, in addition to higher manufacturing costs (driven by higher energy prices and import prices for clinker), concrete prices saw modest upward pressure, lifting 4.4% in FY22. This is in comparison to weakening concrete prices over FY19 and FY20 – when total construction activity came off its FY18 peak. FY24 will see construction activity pick-up slightly and, with activity at historic highs, demand will remain strong. With the added addition of high manufacturing costs, concrete prices are forecast to grow a further 4.9% in FY24. Concrete price growth will then ease over the following two years as nationwide construction activity softens, before stronger growth over FY27 and FY28, driven by a 12% increase in construction activity over the two years. Overall, concrete prices are forecast to grow 2.5% p.a., on average, over the four years to FY28.

Figure 6.12 Concrete, Sand and Cement PPI Price Drivers – South Australia
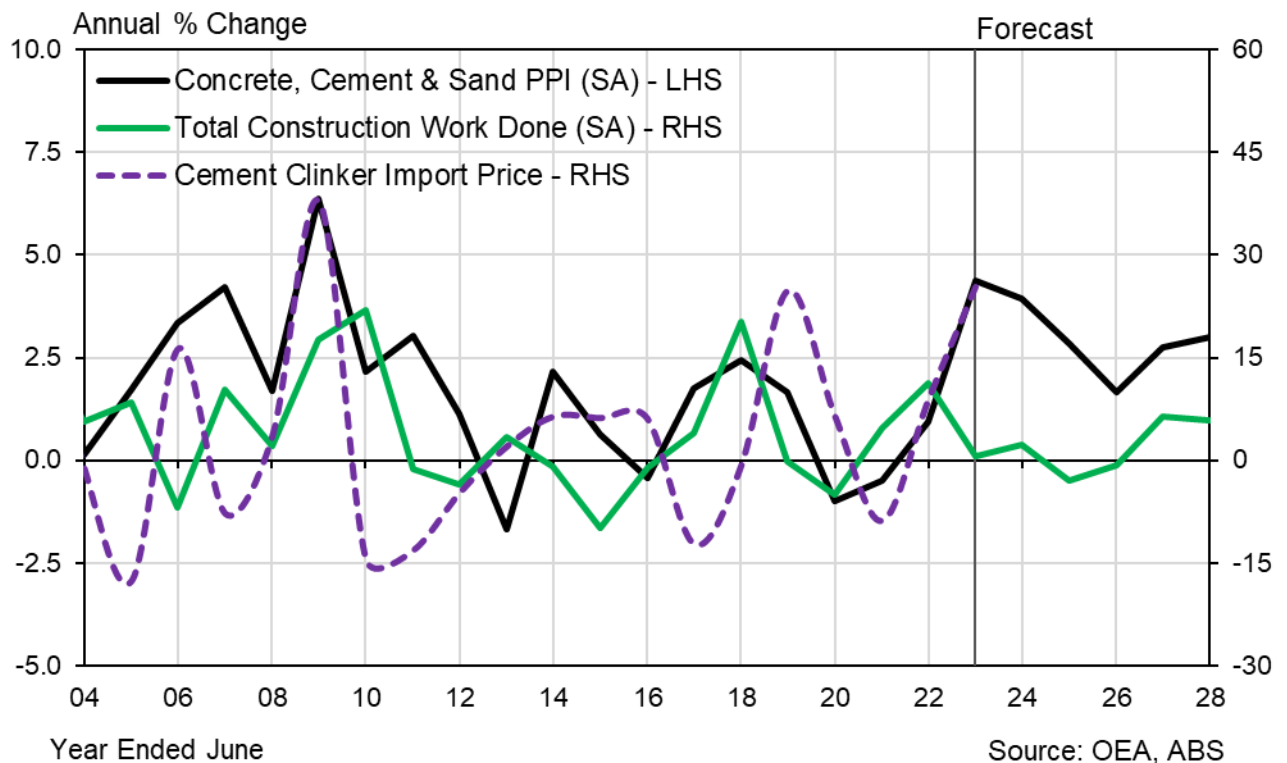
6.7 ELECTRITY PRICES

Australia is dominated by a single electricity market (National Energy Market) connecting customers in the eastern and southern states, excluding Western Australia and the Northern Territory. Electricity prices are influenced by the cost of generation (influenced heavily by fuel costs), network distribution costs, government fees (mostly related to environmental levies) as well as retail costs and margins.

The **Electricity Input to the Manufacturing Industries PPI** is an index measuring electricity price movements for industrial consumers. This PPI has been selected as a suitable proxy for electricity

prices associated with major civil construction projects, that, like manufacturing, have high voltage requirements. The Australian Competition and Consumer Commission's November 2021 'Inquiry into the National Electricity Market' report provides a historical breakdown in residential, small business and large business annual electricity costs by retail margin (EBITDA), retail & other costs, environmental costs, wholesale electricity prices and network costs. Our methodology adopts the 'large business' breakdown – which declined at an annual average of 6.1% over FY20-21 – due to its historical similarity to the Electricity Input to the Manufacturing Industries PPI, which fell on average by 5.9% p.a. over FY20-21. Key contributors to the decline in electricity prices over FY20-21 were declining network costs and wholesale prices – the latter driven by decreasing demand for electricity throughout the Covid-19 pandemic.

The index has historically followed similar price movements to thermal coal and gas prices, particularly over the last eight years (see figure 6.13), with rising network charges mostly responsible for the divergence in the early to mid-2010's. Despite this PPI recording the Australian average movement for industrial electricity prices, our research suggests there has been a convergence between electricity price movements for state measures of wholesale electricity prices in recent years (see figure 6.14). As such, we believe this national measurement for industrial electricity price movements is appropriate for the South Australian market.

Figure 6.13 Electricity Input to the Manufacturing Industries PPI Drivers - Australia
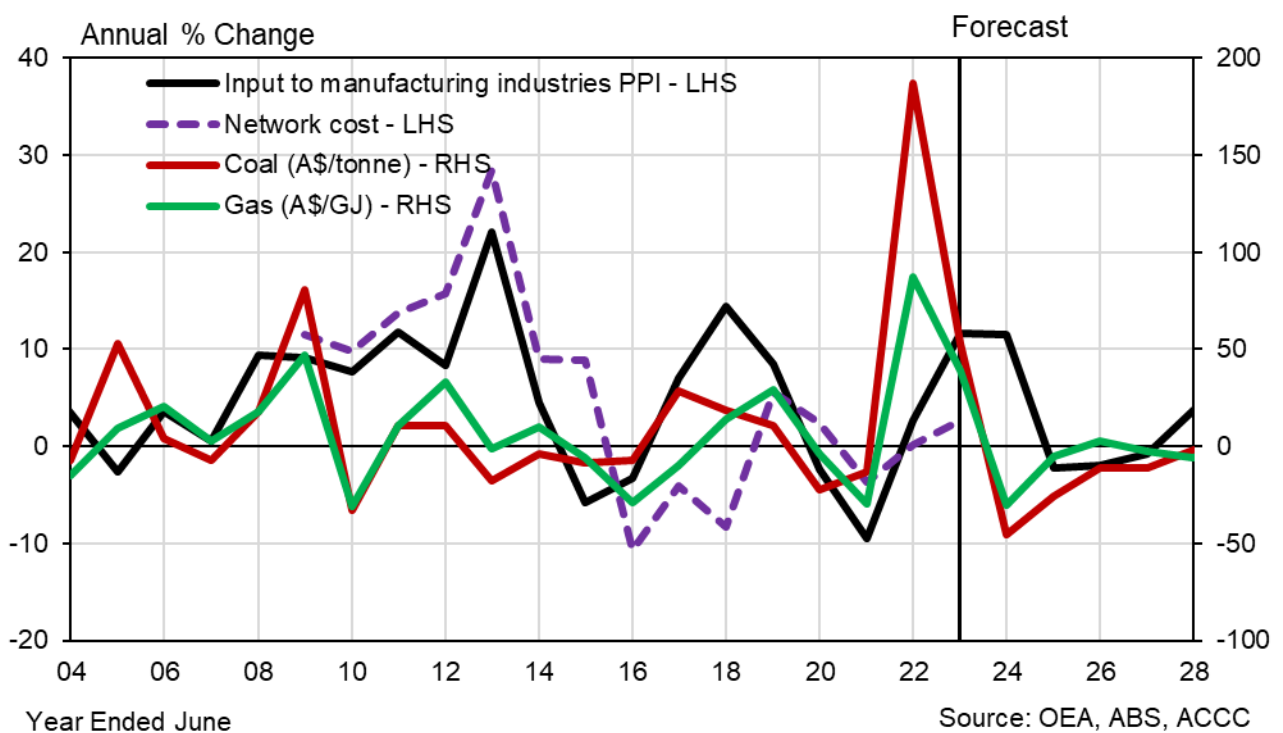
Figure 6.14 annual Wholesale electricity price movements for major NEM markets
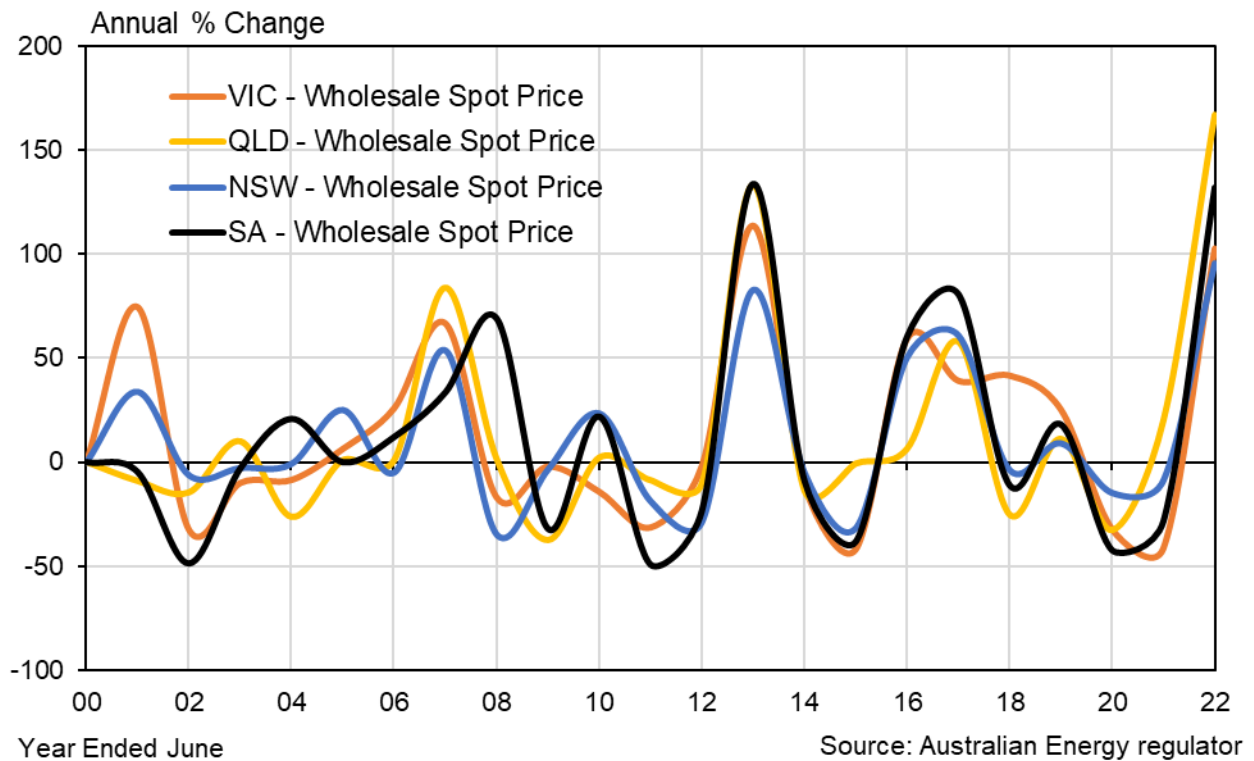
Wholesale electricity prices and network costs comprise the bulk of total costs in the large businesses' electricity costs – constituting 48% and 36% respectively in FY21 – and will therefore continue to be the key drivers of large businesses/manufacturer's electricity costs. Environmental costs (which accounted for 14% in FY21) are expected to grow steadily as a proportion of total costs, rising at elevated rates for several years before reverting to CPI. Meanwhile among the other 2-3% of costs, retail margins are expected to rise steadily back towards their medium-term average following a three-year decline, with retail and other costs predicted to grow in line with inflation.

Network costs will remain constrained through to FY24, restricted by the low-cost increases in the Australian Energy Regulator's decisions, before lifting from FY25 to FY28 to account for the higher transmission and distribution input costs between FY22-24 and the need to significantly increase capital expenditure on electricity networks and transmission. Wholesale electricity prices (driven by commodity input prices including gas and coal) comprise the largest component of total electricity prices (48.3% in FY21, down from over 50% in the prior two years) and will be largely responsible for the expected fluctuations in energy costs over the forecast period. Typically, the is around a 6-12 month lag between movements in wholesale electricity prices, and the PPI (see Figure 6.15).

Figure 6.15 Lagged relationship (~12 months) between wholesale prices and the Electricity Input to the Manufacturing Industries PPI
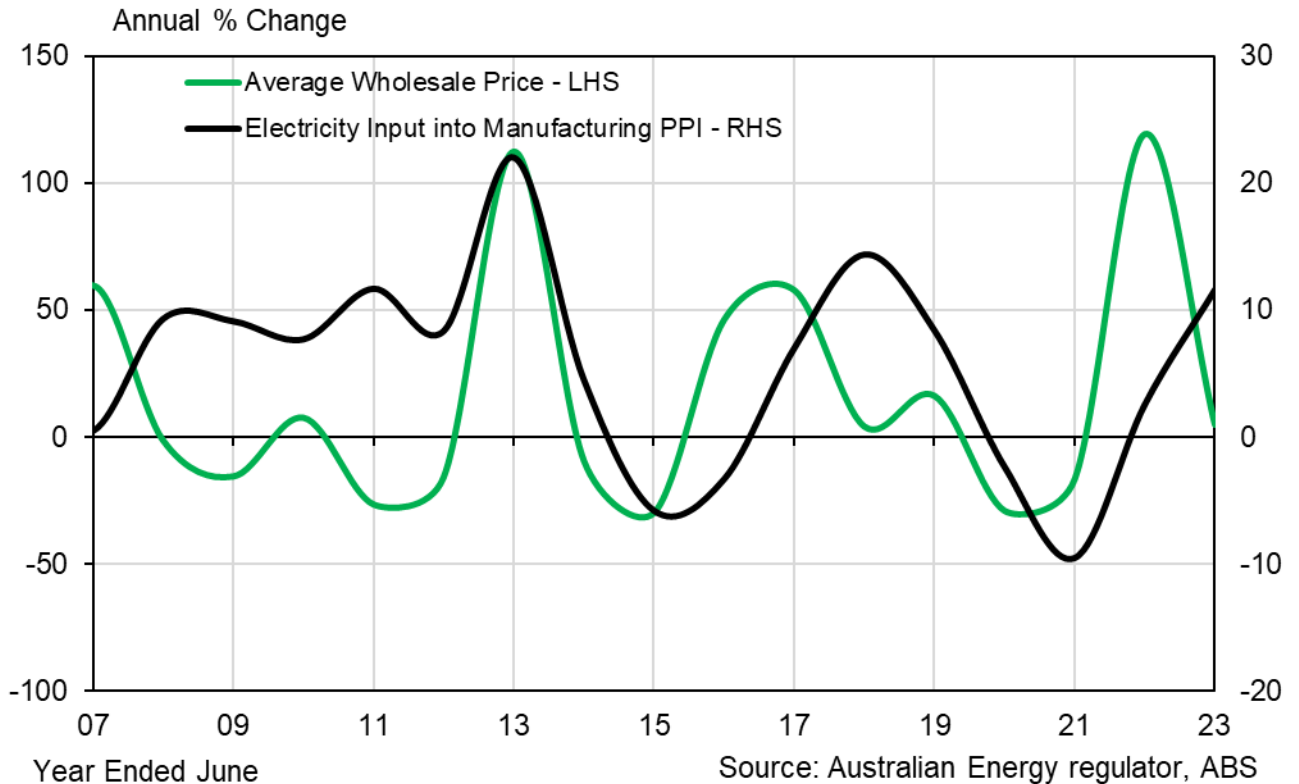
With the onset of the Russian-Ukraine conflict and subsequent sanctions on Russian oil and gas, global energy commodity supplies were severely disrupted. This has led to significant upward pressure on international energy commodity prices, which heavily influenced the prices of domestic energy commodities – export gas prices rose 116% over FY22 and a further 33% in FY23, with domestic gas prices (input price into manufacturing) climbing 40% in FY23. As for coal supplies, FY22 saw both Russian sanctions and severe flooding on the Australian east coast constrain supplies, leading to a 187% rise in thermal coal prices. Overall, the effect of higher commodity prices has had a lagged effect on electricity prices, which rose 11.6% in FY23. With higher generation costs feeding through to prices paid by the consumer, industrial electricity prices are forecast to rise a further 11.6% in FY24, despite easing coal and gas prices. Moving forward, we believe gas will become a more significant price setter compared to coal, which has historically driven wholesale prices. With gas prices easing over FY26 to FY28, industrial electricity prices are set to ease, averaging a -0.3% annual decline over the four years to FY28.

Driven by a surge in wholesale electricity costs, the Electricity Input to the Manufacturing Industries PPI increased 11.6% in FY23 (with wholesale electricity costs hitting 58% of total electricity costs). The surge in wholesale prices and continued elevated gas prices are expected to see further growth in the overall electricity price in FY24, with an increase of 11.6% predicted. Thereafter, with price corrections then expected for energy commodities over FY24 to FY27, the resulting fall in wholesale electricity prices will feed into forecast declines in the PPI.

Despite our expectation that coal prices to come done notably over the back half of the decade, the planned closure of the Eraring coal power station in FY26 (which generates around 25% of NSW electricity) and the delay to Snowy 2.0 electricity generation (we have assumed starting of operations in FY29), are expected to place upward pressure on wholesale prices. As such, the PPI is forecast to see only minor downward growth, averaging -1.7% annual average price falls in FY26 and FY27.

Our working assumption regarding the Earring power station closure is for a partial closure, with 2 of the 4 units at Eraring shut down in August 2025 as per current announced schedule. It is likely that the governments (NSW & Commonwealth) will need to reimburse Origin to keep the remaining 2 units operational to August 2027, to offset delays in Snowy and likely other renewable projects (including transmission lines).

The end of the 2020's will see several opposing factors working to both ease wholesale prices and increase network costs. Wholesale electricity prices will benefit from the completion of Snowy 2.0, and other renewable energy sources entering the mix, whilst an increasing reliance on gas (as coal is phased out), for which we forecast prices to remain at elevated levels over the back half of the 2020's, will add upward pressure to generation costs. Meanwhile, the construction of interconnectors and the continued expansion of the transmission network within the NEM to increase renewable energy generation connections (to solar farms and windfarms), with both drive down wholesale prices, but increase network charges as the substantial investments required are passed on to consumers. The next effect of these factors will see electric prices rise over FY28, increasing 3.7%.

Risk to the Wholesale Electricity Price Outlook

It is worth noting that there are several factors of upside risk to the wholesale electricity price outlook. Some of these are transitory factors – the uncertainty of the Russia-Ukraine war and winter heating demand in Europe – while others could be more structural risks.

We assume in the baseline that renewable sources (hydro, solar, wind) come online to displace fossil fuel generation (black coal and gas). However, significant transmission capacity is required to enable this to happen. There remains uncertainty around how fast the new high voltage transmission lines can be developed to enable increased renewable energy sources. Delays, in particular to construction, in the current supply constrained environment, is a pertinent risk.

Meanwhile, the exit of already aging coal fleet is assured. Therefore, the implication from any delays to renewable generation coming online would be greater reliance on gas powered generation. This could result in higher wholesale electricity prices if the current tightness in global gas markets do not abate any time soon. There is also an elevated risk from additional outages at the ageing coal-fired plants, due to minimum expenditure on maintenance as the plants approach their retirement dates. These outages would also require greater reliance on gas generation.

6.8 CHEMICAL PRICES

Based OEA's on previous research, the **Basic Chemical Manufacturing PPI** has been selected to best represent chemical price movements faced by water utility companies. The PPI includes industrial gas manufacturing – a subindustry consisting of units engaged in manufacturing industrial organic and inorganic gas in compressed liquid or solid forms, such as chlorine and carbon dioxide – and basic organic & inorganic chemical manufacturing – including products such as methanol, aluminium hydroxide, fluoride, salt, sulphur compounds and calcium chloride (lime).

Basic chemical prices exhibit a strong relationship between the price movements in the key chemical feedstock, natural gas, and the Australian exchange rate. Rising gas prices over FY18 saw chemicals prices jump 24% from FY17 to FY19, before easing over FY20 and FY21 as gas process stabilised and the Australian dollar depreciated. With the conflict in Ukraine in early 2022 leading to constrained

gas supplies globally, and the looming European winter stoked demand, which led to domestic manufacturing gas prices skyrocketing 40%. Accordingly, chemical prices rose 40% over FY23.

With gas prices expected to rise a further 5.9%, and aided by a weak Australian dollar (averaging 0.68AUD/USD over the year), chemical prices will hold at their elevated FY23 level over FY24, with a 1.9% increase. A price correction is then expected in FY25, with an Australian dollar appreciates and normalising gas prices seeing chemical prices fall -8.5%. A further easing of gas prices will see chemical prices fall another 3% in FY26, before stabilising over FY27 and FY28.

Figure 6.16 Basic Chemical Manufacturing PPI Drivers - Australia
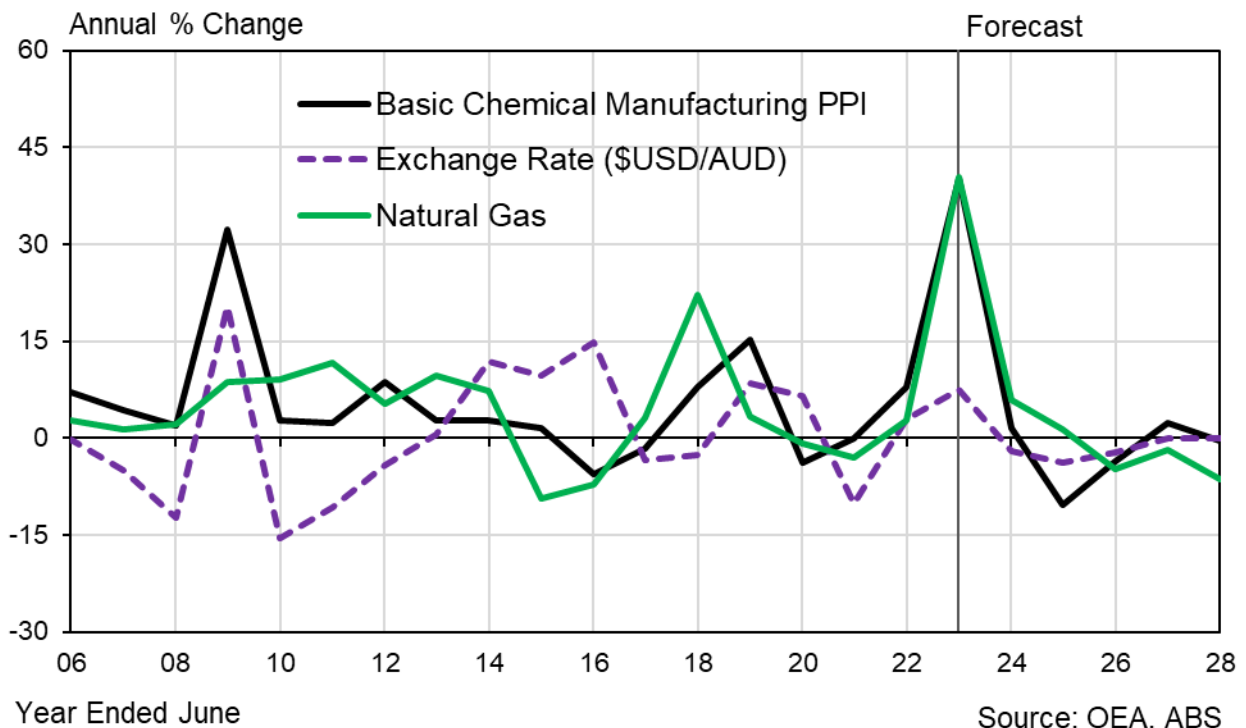
6.9 OVERALL CONSTRUCTION COSTS

The water supply and sewerage (WS&S) construction implicit price deflator (IPD) is an aggregate measure of the cost growth of work done for a given quarter. We build the forecast for the index from individual components – i.e. an average price growth is computed across a basket of relevant construction inputs which will then provide a general indicator for broad cost movements across the sector. Prices for these individual components are influenced both in domestic markets (e.g. wages, road transport and concrete) and international markets (structural steel, non-ferrous pipe).

The water and sewerage construction IPD remained elevated through the 2000's on the back of strong demand pressures in the construction industry, driven by the first phase of the mining boom. These tightened market conditions saw the index rise at an average rate of 4.5% between FY03 and FY09. The emergence of the GFC saw cost growth fall back, but renewed construction investment across both public and private sectors in the following years drove real price growth (i.e., above inflation) – averaging 2.8% nominal growth per annum between FY11 and FY14. After the peak in construction activity in FY14, price pressures across the industry began to subside alongside the decline in overall activity.

Recent years have seen price pressures re-emerge, with overall construction costs rising 12% from FY21 to FY23 as a plethora of pressures evolved throughout, and post the pandemic – supply chain disruptions, covid restrictions, higher steel prices followed by higher energy costs, and now increasing wage growth. We expect peak construction cost inflation to have peaked in FY23, with supply chains progressively normalising and commodity prices easing off their FY22 highs. However, with stronger wages growth forecast for the coming years, driven by a tight labour market and increased demand from the construction sector, growth in the WS&S IPD is expected to sit at around 3% annually over the four year FY25-FY28 period – similar to growth seen towards the end of the 2010's.

Figure 6.17 Water & Sewerage Construction IPD Drivers - Australia
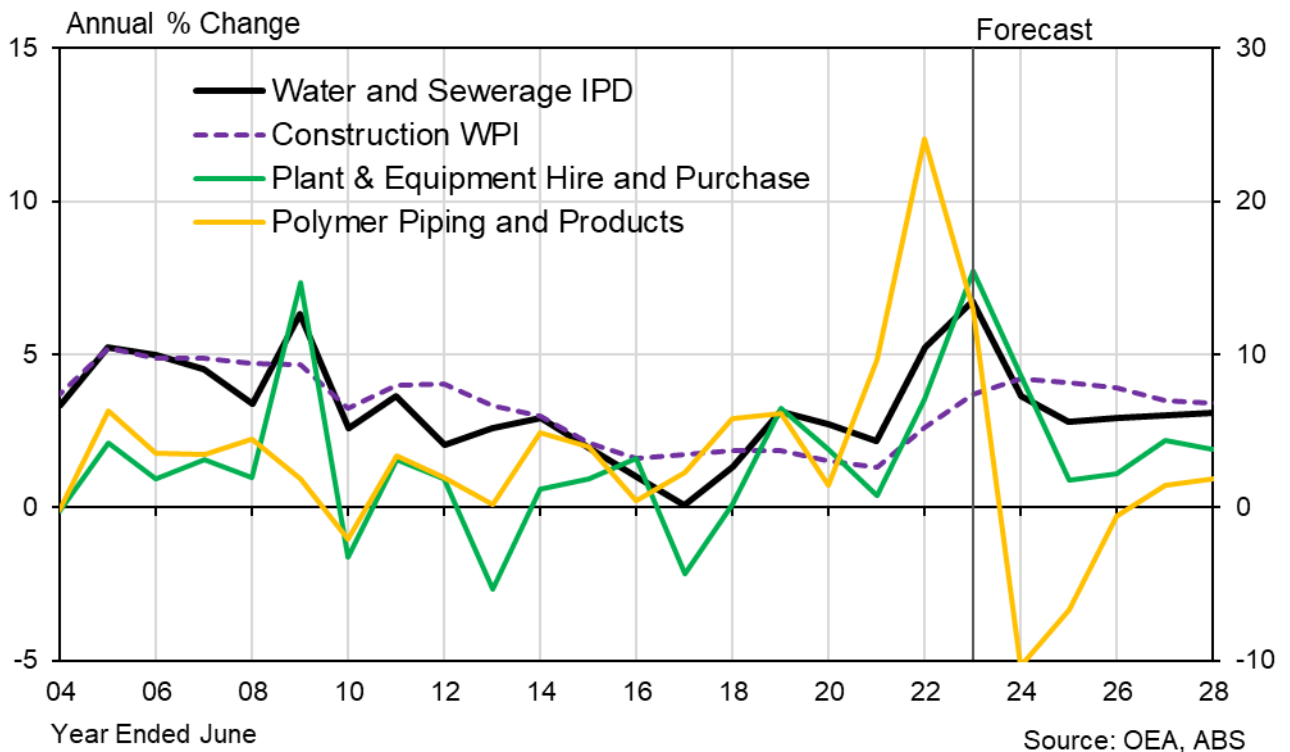
APPENDIX 1: A NOTE ON DIFFERENT WAGE MEASURES & WAGE MODELS

Several different measures of wages growth are referred to in this report, each differing slightly both in terms of their construction and appropriateness for measuring different aspects of labour costs. The following provides a brief summary of the main measures, what they are used for and why.

The main wage measures are:

- Average Weekly Ordinary Time Earnings (AWOTE) — earnings gained from working the standard number of hours per week. It includes agreed base rates of pay, over-award payments, penalty rates and other allowances, commissions and retainers; bonuses and incentive payments (including profit share schemes), leave pay and salary payments made to directors. AWOTE excludes overtime payments, termination payments and other payments not related to the reference period. The AWOTE measures used in this report refer to full-time adult AWOTE and are sourced from the Australian Bureau of Statistics (ABS) catalogue number 6302.0, with OEA forecasts.

- Average Weekly Earnings (AWE) — represents average total gross earnings (before tax) of all employees (including full-time and part-time workers). They include weekly ordinary time earnings plus over-time payments.

- The Wage Price Index (WPI) — a CPI-style measure of changes in wage and salary costs based on a weighted combination of a surveyed 'basket' of jobs. The WPI used in this report excludes bonuses. The WPI also excludes the effect of changes in the quality or quantity of work performed and most importantly, the compositional effects of shifts within the labour market, such as shifts between sectors and within firms. The WPI figures quoted in this report are sourced from ABS catalogue number 6345.0, with OEA forecasts.

Each measure provides a slightly different gauge of labour costs. However, the main distinction between average earnings measures and the wage price index relate to the influence of compositional shifts in employment. The compositional effects include changes in the distribution of occupations within the same industry and across industries, and the distribution of employment between industries. For example, a large fall in the number of lower paid employees, or in employment in an industry with lower average wages, will increase average weekly earnings (all else being equal). While this is a true reflection of the average cost of labour to businesses, it is not necessarily the best measure of ongoing wage inflation (i.e. trends in wage-setting behaviour in the labour market). Another compositional problem with using the 'all persons' AWOTE is variations in the proportion of male and female employees (particularly as average female AWOTE is lower than average male AWOTE). However, in practice, the data shows only minor differences in the AWOTE growth rates between male and females (or males and all persons) — between -0.2 and +0.2 per cent — since the 1980s or basically since the equal pay legislation was enacted through the 1970s.

The wage price index was specifically designed to get around these compositional problems. It uses a weighted average of wage inflation across a range of closely specified jobs. As it measures the collective variations in wage rates made to the current occupants of the same set of specified jobs, the WPI reflects pure price changes, and does not measure variations in quality or quantity of work performed. However, like the CPI (Consumer Price Index), the weights are fixed in a base year, so

that the further away from that base and the more the composition of the labour market changes over time, the more 'out of date' the measure becomes.

Importantly, the WPI does not reflect changes in the skill levels of employees within industries or for the overall workforce and will therefore understate (or overstate) wage inflation if the overall skill levels increase (or decrease). The wage price index is also likely to understate true wage inflationary pressures as it does not capture situations where promotions are given in order to achieve a higher salary for a given individual, often to retain them in a tight labour market. Average weekly earnings would be boosted by employers promoting employees (with an associated wage increase) but promoting employees to a higher occupation category would not necessarily show up in the wage price index. However, the employer's total wages bill (and unit labour costs) would be higher.

Oxford Economics Australia Wage Growth Model

OEA's model of wage determination in the short-to-medium term is based on the analysis of expected future wage movements in the three main methods of setting pay, as each discrete pay setting method has its own influences and drivers. The main pay setting categories and their key determinants are:

• Employees under awards have their pay determined by Fair Work Australia in the annual National Wage case. When determining pay increases, Fair Work Australia aim to maintain the standard of living of those employed on awards by providing a safety net of fair minimum wages. Hence, they focus on the overall performance of the domestic economy, taking into account productivity, business competitiveness, inflation and employment growth. This means that increases in the Federal Minimum Wage are usually based on recent CPI growth along with Fair Work Australia's view on short term future conditions for the Australian economy. From 1 July 2022, the minimum wage was increased by 5.2%. This followed rises of 2.5%, 1.3%, 3.5% and 3.5% respectively in previous years. At the All Industries level, 13% of all non-managerial full-time employees (data excludes those in agriculture, forestry and fishing) have their pay rises determined by this method, but only 1.5% of Electricity, Gas, Water & Waste Services' (EGWWS) employees.

• For employees under collective agreements (representing 38% of all employees; 64.5% of EGWWS), their pay is determined through enterprise bargaining, and wage increases are influenced through a combination of recent CPI, inflationary expectations, profitability levels of relevant enterprises, business conditions, and the short-term economic outlook. Workers' unions can also play a significant part in negotiations, especially unions with a good position in industrial relations through strong membership. With the average duration of these agreements currently two to three years, OEA use the most recent agreements formalised in recent quarters as a basis for our near-term forecasts. Beyond that, collective agreements are based on our expectations of economic conditions.

• The remaining 48% of employees (or 33.9% of EGWWS employees) have their pay set by individual arrangements, whether it be individual contracts or some other form of salary agreement, which may include incentive-based schemes. Similar to the minimum wage and collective agreements, inflation and inflationary expectations have a strong influence on agreements, as well as the strength of the labour market. Individual arrangements are skewed towards more skilled workers, so the balance between demand and supply in skilled labour can be an important influence

Note that wage increases under 'individual arrangements' are calculated by deduction. Data from DEEWR (Department of Education, Employment and Workforce Relations) are used for wage increases under collective agreements.

The limitation of this methodology is that because individual arrangements are calculated as a residual, all of the compositional effects in terms of AWOTE (ie from more or less lower-paid workers being employed in the relevant year) plus all (or most) of the bonuses and incentives from those

under award or collective agreements end up in the individual arrangements residual, which distorts the pay increases in this segment. However, the methodology works well for the WPI, particularly at the All Industries level, although some compositional problems occur at the sectoral level, particularly for sectors with a relatively small employment base (such as electricity, gas, water and waste services).

The 'bottom-up' approach to wage forecasting is complemented by a more formalised 'top-down' macroeconomic modelling framework – to ensure an overall macroeconomic consistency with output, employment, productivity and price variables. The wage price index is a function of the following explanatory variables:

- CPI
- unemployment rate
- labour productivity (GDP/employment)
- lagged wage (WPI) growth (to capture 'sticky' nature of wage determination in the short term).

The top-down macroeconomic modelling methodology becomes more relevant beyond the next 2-3 years.

OXFORD ECONOMICS