

Supporting document 6.5 BIS Oxford Economics -Utilities Construction Wage Forecasts to 2024-25

2020-25 Revised Regulatory Proposal

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# UTILITIES & CONSTRUCTION WAGE FORECASTS TO 2024/25

**NOVEMBER 2019** 



#### **BIS Oxford Economics**

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#### November 2019

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The modelling and results presented here are based on information provided by third parties, upon which BIS Oxford Economics 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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### **EXECUTIVE SUMMARY**

BIS Oxford Economics was engaged by SA Power Networks to provide price forecasts of labour costs relevant to electricity distribution networks in South Australia. Forecasts of wages will be used by SA Power Networks to develop the real price changes over its upcoming regulatory period, which, in turn, will be used by the business to construct its expenditure forecasts.

Although SA Power Networks' next revenue proposal covers the five-year period from 2020/21 to 2024/25 (inclusive), BIS Oxford Economics was asked to provide six-year forecasts covering financial years 2019/20 to 2024/25 to allow for escalation over the full outlook period. Forecasts of both nominal and real price growth of the relevant inputs were provided. Our forecasts are summarised in Table 1.

### +3.5%

Expected wage increases for employees in the South Australian utilities industry over the 5 years to 2024/25 BIS Oxford Economics expects total wage costs for the **Australian** Electricity, Gas, Water and Waste Services (EGWWS or 'Utilities') sector — expressed in Wage Price Index terms — will average 3.6% per annum over the five years to 2024/25, 0.3% higher than the national (Australian) 'All Industries' average of 3.3% p.a. over the same five-year period.

Utilities wages are forecast to increase by more than the national average because of the following factors:

- 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.
- strong union presence in the utilities sector will ensure outcomes for collective agreements, which cover 65% of the workforce, remain above the wage increases for the national 'all industry' average. In addition, with the higher proportion of employees on EBAs, compared to the national average (38%), and EBAs wage rises normally higher than individual agreements, this means higher overall wage rises in the EGWWS sector.
- increases in individual agreements (or non-EBA wages) are expected to strengthen from the current weak pace as the labour market tightens and labour productivity growth builds from around FY22.
- demand for skilled labour has picked up and will strengthen with the high levels of utilities investment over FY18 to FY21, with investment levels expected to remain elevated over the medium term. This will also be a key driver of wages going forward.
- 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 impacting on wages growth in particular. The EGWWS sector is not impacted in the same way due to its obligation to provide essential services and thus retain skilled labour.



In addition, the demand for skilled labour will also increase markedly over the next four years, due to a significant increase in mining investment from recent lows and from increases in non-residential building and civil engineering construction, the latter as a large program of transport infrastructure projects in the eastern states ramp up. The mining and construction sectors are competitors for similar skilled workers, and with skilled labour shortages already starting to be reported, we expect wages in the mining and construction sectors to accelerate from here, particularly over FY22 and FY23. This will force companies in the utilities sector to push up wages to 'meet the market', in order to attract and retain skilled workers

Over the past three years, overall WPI growth in the EGWWS sector in South Australia is estimated to have been slightly lower than the national EGWWS increase, and this is expected to persist over the next few years. South Australian EGWWS WPI growth is expected to rise from recent lows, and pick up to 3% (nominal terms) by 2020/21.

However, a marked pick-up in economic growth in the state from around FY22 is expected to see employment growth and the labour market tighten. A key element of the ongoing strength in the state economy is the large amounts of defence-related expenditure in South Australia over the forecast period (and beyond), including the manufacture of naval ships, submarines and army vehicles. 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.

The pick-up in growth from 2022 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, is expected to result in utilities WPI growth accelerating significantly over the 2021 to 2023 period, and subsequently remain elevated over the following two years to 2024/25.

South Australian utilities WPI growth is forecast to average 3.5% p.a. in nominal terms over the five years to 2024/25 inclusive (i.e. over SA Power Networks' next regulatory period) – or 1.4% in real (inflation adjusted) terms (see Table 1).

#### **Contract or Out-sourced Labour Cost Escalation**

In terms of SA Power Networks' contract or 'out-sourced' labour escalation, the 'All Industries' WPI for South Australia should be used to escalate SAPN's outsourced or **contracted ICT labour** and other professional services. We believe that the all industries WPI would cover the broad spectrum of out-sourced labour cost escalation. However, where there is a significant proportion of outsourced labour which is contracted to perform construction-type activities in the capital expenditure budget, we would advise that the construction WPI would be more appropriate for that type of out-sourced labour, given utility service providers' outsourced labour is mostly supplied by firms in the construction industry.

Growth in total 'all industries' wages at the state level usually depends on the relative strength of the state economy and labour markets, compared to the



national average. Over the four years to FY18 inclusive, the South Australian all industries state average WPI was consistently higher than the national average, averaging over 0.1% higher than the national average. The relatively strong growth in state final demand (SFD) in South Australia (compared to the growth in Australian domestic demand) and steady improvements in the state's labour market underpinned the relative strength of general wages growth in the state. However, in FY19, South Australian all industries WPI growth underperformed the national average by over -0.1%, as the improvement in the labour market began to reverse and growth in SFD slowed sharply.

Although we expect the South Australian all industries WPI to improve in FY20 and match the growth in the Australian average, relatively weaker growth in SFD, GSP and employment over FY21 and FY22 is expected to see South Australia slightly underperform national wages growth in those two years. Subsequently, a marked improvement in SFD, employment and the state's unemployment rate is then expected to see the state's general wages growth match and then slightly outperform the national average in FY23 and FY24, before relatively slower economic and employment growth in the state sees a sharp deceleration in the South Australian all industries WPI in FY25.

In terms of contracted labour dominated by construction-type activity, 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 to two years. Hence, our wage forecasts are based on BIS Oxford Economics 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.

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 of the latter half of last decade. While collective agreements in the sector have maintained their relative high increases over the past 4 years – between 4% 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. However, with the overall labour market beginning to tighten, and construction activity levels remaining strong, we expect wages growth in the sector to continue to improve, after picking up from their lows of 2016. Nevertheless, construction activity is set to again weaken over FY20 and FY21, and this will limit the improvement in construction wages growth over the next two years.

Construction wages are expected to accelerate over FY22 and FY23, driven by the recovery in residential building activity which is expected to rise out of its trough from FY22, while high levels of non-dwelling building and rising engineering construction will underpin higher wages due to strong labour demand and expected widespread skill shortages in the construction industry. Declines in construction activity over FY24 to FY25, coupled with a general weakening across overall labour markets will then cause construction wages growth to ease over FY25.



Our forecast is for the Australian Construction WPI to average 3.2% over the five-year period to 2024/25 at the national level, with South Australian construction wages growth to be slower at 3.1% – or 0.9% per annum on average in real (inflation adjusted) terms (see Table1).

#### Table 1. Wage Forecasts for South Australia and Australia

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

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average (f)
NOMINAL LABOUR PRICE CHANGES		Ac	tuals				Forecasts	1	Next Regula	atory Perio	d		
South Australia Wages													
(1) Electricity, Gas, Water and Waste Services:													
Wage Price Index (a)	3.5	2.9	2.0	1.9	2.0	2.5	2.9	3.0	3.4	3.8	3.9	3.7	3.5
(2) Construction:													
Wage Price Index (a)	2.4	1.9	1.4	1.4	1.6	1.8	2.0	2.2	2.8	3.6	3.7	3.1	3.1
(3) All Industries:													_
Wage Price Index (a)	3.3	2.5	2.3	2.2	2.1	2.2	2.4	2.7	3.1	3.6	3.7	3.2	3.3
Australian Wages (b)													
(4) Electricity, Gas, Water and Waste Services:													
- Wage Price Index	3.2	2.8	2.4	2.2	2.0	2.8	3.0	3.2	3.5	3.9	4.0	3.7	3.6
- Average Weekly Ordinary Time Earnings (c)	2.0	0.7	3.5	4.3	2.3	1.3	3.4	3.7	4.1	4.3	4.4	4.0	4.1
(5) Construction:													
- Wage Price Index	2.9	2.1	1.6	1.7	1.9	1.9	2.1	2.5	3.0	3.7	3.8	3.2	3.2
- Average Weekly Ordinary Time Earnings (c)	2.1	2.2	1.4	2.2	1.0	-0.6	3.8	3.3	4.0	4.4	4.5	4.0	4.0
(6) All Industries:													
- Wage Price Index	2.6	2.4	2.1	2.0	2.1	2.3	2.4	2.8	3.2	3.6	3.6	3.3	3.3
- Average Weekly Ordinary Time Earnings (c)	3.0	2.4	1.9	2.0	2.4	2.7	3.2	3.5	4.0	4.2	4.2	3.8	3.9
Consumer Price Index (headline) (d)	2.7	1.7	1.4	1.7	1.9	1.6	1.8	1.9	2.1	2.3	2.3	2.3	2.2
		Ac	tuals				Forecasts	1	Vext Regula	atory Perio	d		
South Australia Wages (Real)		7.0	tualo						ton rogan	atory i one	ŭ		
(R1) Electricity Gas Water and Waste Services:													
Wage Price Index			0.7	0.2	0.4				4.2		4.6	4.2	14
(R2) Construction	0.0	1.1	0.7	0.2	0.1	0.9	1.1	1.1	1.5	1.4	1.0	1.5	1.4
Wage Brice Index	0.2	0.2		0.2	0.4	0.1	0.2	0.2	0.7	1 2		• •	0.0
(P3) All Industries	-0.3	0.2	0.0	-0.5	-0.4	0.1	0.5	0.5	0.7	1.5	1.4	0.0	0.5
Wago Brico Index				0.4	0.2	0.5	0.6	• •	1.0	1 2			11
	0.6	0.8	0.9	0.4	0.2	0.5	0.0	0.0	1.0	1.3	1.4	0.9	1.1
(P4) Electricity, Coo, Water and Weste Services													
(R4) Electricity, Gas, Water and Waste Services								4.0					
Wage Price Index	0.4	1.1	1.0	0.5	0.0	1.1	1.2	1.3	1.4	1.5	1.6	1.4	1.4
Average weekly Ordinary Time Earnings	-0.7	-1.0	2.2	2.6	0.4	-0.3	1.6	1.8	2.0	1.9	2.1	1.7	1.9
(R5) Construction													4.0
wage Price index	0.2	0.4	0.2	0.0	-0.1	0.2	0.3	0.6	0.9	1.4	1.5	0.8	1.0
Average weekly Urdinary Time Eamings	-0.6	0.5	0.0	0.5	-0.9	-2.2	2.0	1.4	1.9	2.1	2.2	1.6	1.8
(NO) All illuusiiles Wago Brico Index	0.1	0.7	0.7	0.0	0.4	0.7	0.7			10	4.0	0.0	1 4
waye Fille index	-0.1	0.7	0.7	0.2	0.1	0.7	0.7	0.9	1.1	1.3	1.3	0.9	1.1
Average weekly Ordinary Time Earnings	0.3	0.7	0.5	0.3	0.5	1.0	1.4	1.6	1.9	1.9	1.8	1.5	1.7
			Source: BIS Oxford Economics, Department of Employment, RBA, ABS Data										

(a) Wage price index for total hourly rates of pay excluding bonuses. It measures quarterly change in combined ordinary time and overtime hourly rates of pay.

This series is unaffected by compositional shifts in earnings and is a pure labour price measure. That is, the WPI reflects changes in the demand and supply of labour. Note that the WPI for states by industry is only published for total hourly rates of pay excluding bonuses. Hence, for consistency we use

supply of labour. Note that the WPI for states by industry is only published for total nourly rates of pay excluding bonuses. Hence, to this series. However, as bonuses are excluded, this series does not reflect compensation for productivity improvements.

(b) Australian wages provided for comparison.

(c) Average Weekly Ordinary Time Earnings for full-time adult persons. This series is also affected by compositional effects but to a lesser extent than the

AWE (Average Weekly Earnings) series as AWOTE excludes all part-time employees, juniors, trainees and apprentices (included in AWE), along with

all overtime earnings of full-time employees paid at the adult rate. (d) Inflation forecasts are RBA forecasts for the next 2 years. Beyond that, forecasts are calculated as a geometric mean of the 'official' inflation forecasts over the next 10 years.

This methodology has been adopted by the AER in their recent revenue decisions.

(e) Real price changes are calculated by deducting the inflation rate from nominal price changes.

(f) Expected average wage change for SAPN's next revenue determination period i.e. from 2020/21 to 2024/25 inclusive.

Note that most of the references to historical data and forecasts of **wages** in this report (particularly the Executive Summary and sections 3 and 4) **are in nominal terms**, unless specifically stated that the data/forecasts are in real (inflation adjusted terms).



### **1. INTRODUCTION**

#### Project background, motivation and research agenda

BIS Oxford Economics was engaged by SA Power Networks to provide price forecasts of labour costs relevant to electricity distribution networks in South Australia. Forecasts of wages will be used by SA Power Networks to develop the real price changes over its upcoming regulatory period, which, in turn, will be used by the business to construct its expenditure forecasts.

Although SA Power Networks' next revenue proposal covers the five-year period from 2020/21 to 2024/25 (inclusive), BIS Oxford Economics was asked to provide six-year forecasts covering financial years 2019/20 to 2024/25 to allow for escalation over the full outlook period. Forecasts of both nominal and real price growth of the relevant inputs were provided.

In keeping with my instructions, I, Richard Robinson, Associate Director (Economics) of BIS Oxford Economics, confirm that I have undertaken this engagement having regard to the Guidelines for Expert Witnesses in Proceedings in the Federal Court of Australia and the requisite statement to this effect is included in Appendix B. I have been assisted in the preparation of this report by Nic Ng (Economist) at BIS Oxford Economics. Curriculum vitas of all relevant personnel are attached in Appendix C. Notwithstanding the assistance from the other economist, the opinions in this report are my own and I take full responsibility for them.

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 shown in Tables 2 and 3. The most recent wages data is for the June 2019 quarter and the latest industry employment data is for the month of August 2019. The June 2019 quarter was the latest available data for real gross value added (at the Australian level only), investment and indeed most of the economic variables in Table 2. The detailed engineering construction data (by state and by category) have data up to June 2019 quarter. The latest data for Gross State Product and real gross value added for state industry sectors was 2018/19. Other inflation and interest rate data were sourced from the Reserve Bank of Australia, while data and information concerning enterprise agreements were obtained from the Department of Employment.

Forecasts of the economic variables in this report were mostly sourced from BIS Oxford Economics reports, including *Economic Outlook, Long Term Forecasts: 2019 – 2033, Engineering Construction: 2019 to 2033* and *Long Term Building Work Done Forecasts*, along with other unpublished forecasts and from BIS Oxford Economics internal research and modelling.



Structure of the report	The previous Summary section presents an overview of the outlook for the labour costs including numerical forecasts which are presented in summary tables.
	Section 2 provides a macroeconomic outlook for Australia and South Australia. This section also has forecasts of key economic variables plus a discussion of the drivers and logic underpinning the forecasts. Section 2 essentially provides a context for our Australian wage forecasts including wage forecasts by state and by industry.
	Section 3 discusses BIS Oxford Economics' model of wage determinations and provides forecasts of national ('all industries') wages and CPI inflation, which are used to deflate the nominal wage forecasts included in this report. Note that most of the <b>references to historical data and forecasts of wages</b> in both section 3 and section 4 <b>are in nominal terms</b> , unless specifically stated that the data/forecasts are in real (inflation adjusted terms). Section 3 also has state forecasts of the South Australian all industries wages growth, which should be used to calculate ICT and other professional services' out-sourced labour costs.

Section 4 has wage forecasts for the Electricity, Gas, Water and Waste Services (EGWWS) and Construction sectors at the Australia level and for South Australia as measured by the WPI (wage price index).

Appendices include an explanation of different wage measures, CV's of key personnel and the Terms of Reference from SA Power Networks.



### 2. MACROECONOMIC OVERVIEW: AUSTRALIA AND SOUTH AUSTRALIA

#### 2.1 AUSTRALIAN ECONOMIC OVERVIEW AND OUTLOOK

The Australian economy has experienced 27 years of uninterrupted growth since the FY91 recession. Population growth is among the highest of the developed economies, which has helped underpin household consumption and demand for dwelling and infrastructure construction. Government debt is comparatively low by global standards, with the national (Commonwealth) government and the larger state economies of New South Wales and Victoria maintaining AAA credit ratings. Overall, economic risks are low and the Australian economy is situated in the fast growing Asia Pacific region.

Nevertheless, growth in GDP and particularly domestic demand has been lower over the past seven years than the previous two decades. The main factor dragging down growth has been a major decline in mining investment, which has coincided (and contributed to) weakness in non-mining business investment.

Australia's economic growth has slowed over the past year, with GDP growth easing to 1.4% through-the-year to June 2019, and year-average growth slipping to 1.9% for FY19. This followed a rebound in growth to 2.9% in FY18, after only 2.3% in FY17 and an average of 2.6% over the 6 years from FY13 to FY18. Annual growth is expected to remain subdued at around 2.3% in FY20, before subsequently picking up to 2.6% in FY21 and then subsequently strengthening over FY22 and FY23.

#### Sluggish domestic demand growth to continue

The recovery in domestic demand, which grew 3.5% in FY18, drove Australia's GDP last year, but it will now act as a drag on overall GDP in the near term with domestic spending growth back below 2% in FY19 and expected to remain below 2% in FY20.

Household spending continues to be held back by sluggish income growth; rising employment is supportive, but wage increases remain tepid and other sources of income (government transfers, rental income and interest earnings in particular) have stagnated. The low savings rate is also an impediment to further growth in consumer spending. While lower interest rates and income tax cuts will be supportive, we continue to be cautious about the near-term outlook.

Residential construction activity has turned down sharply and the cycle has much further to run - we expect dwelling investment will be a large drag on GDP growth, and to a lesser extent employment growth, in 2019 and 2020. However, house price falls appear to be moderating in Sydney and Melbourne, and there are tentative signs that turnover is stabilising, which we expect to drive an upturn in dwelling approvals and commencements going into H2 2020.

The main sources of growth in the domestic economy will come from moderate growth in non-mining investment and a recovery in mining capital expenditure from FY20. Conditions remain conducive to a pickup in business investment – utilisation rates are high and monetary conditions are accommodative – but



deteriorating confidence and uncertainty around the global outlook may give firms reason to pause. Mining investment has now troughed after a long decline, and the absence of the drag will support growth. Mining is also starting to recover, boosted by higher commodity prices. The continued recovery in mining, concentrated in Western Australia and Queensland and supported by further commodity price rises and an improved investment climate, will contribute to net exports. Major LNG projects in Western Australia will be the key positive contributor further out.

Despite rising global economic risks, we remain cautiously optimistic about the outlook for new business investment. Public demand continues to provide support to growth, with the NDIS rollout and increased education spending boosting government consumption. Growth in public investment will slow a little as the NBN rollout winds down, but there is a strong pipeline of work in transport projects on the east coast. Growth in both export volumes and values has been strong, underpinned by resource exports and pushing the current account into surplus in Q219.





### Net export to continue to underpin growth in near-term, despite global headwinds

Over the next 2 years, GDP will be boosted by net exports, with solid growth in export volumes forecast, despite some moderation in global growth. Underpinning this will be new LNG and oil capacity (as recently completed projects ramp up), and moderate increases in capacity in other key commodities. Also contributing is strong growth in services exports, led by inbound international tourism and education, which is being supported by a more competitive AUD. The outlook for manufacturing and rural exports is also positive (droughts notwithstanding), with both sectors taking advantage of Australia's comparative advantage in high quality, high value-added output.



The acceleration in global growth over the past two years has also been supportive, boosting export volumes and initiating a recovery in commodity prices. However, the global economy has experienced a cyclical slowing in growth over the last year across both developed economies and emerging markets. To some extent the moderation was inevitable, with many developed economies experiencing faster-than-trend growth in the first half of calendar 2018, but it also reflects a number of headwinds including the US-China tariff escalation, political uncertainty in Europe, and the end of fiscal stimulus in the US.

Central banks have relaxed monetary policy since the start of the year, the Chinese authorities have intervened to support domestic growth momentum, and expansionary fiscal policy has been implemented across a number of key Asian markets. Overall, the global economy expanded by 3.6% in calendar 2018 (PPP measure). We are projecting growth of 2.9% in 2019, with the slowdown in growth in the US, China, Europe and India becoming apparent. Nevertheless, global growth is expected to improve and average 3-3.5% over 2020 to 2024.

Over the long term we maintain our view that global growth will be structurally weaker than it has been in the past. Falling population growth and limited improvements in productivity will weigh on trend growth, and we expect the world economy to expand by an average of 3.3% p.a. over the next five years.

Australia's trading partner growth (weighted by export proportions) is forecast to grow at a faster rate of 3.6% over the next five years, 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.

#### Synchronisation of investment to drive stronger growth from FY22

By early next decade, the investment cycles – which are currently offsetting each other and out-of-sync – are all expected to move into upswing, although there will be differences in the strength and timing across the residential, business and public investment components. The strengthening in investment will lead to an increase in the pace of employment growth and, with the labour market tightening, an increase in wages, household incomes and consumer spending. In addition, with the government's budgetary position improving due to increased taxes, the government is expected to loosen fiscal policy – either via increased recurrent or capital spending or tax cuts, or more likely a combination of all three.

The upshot is that growth in domestic demand will strengthen to around 3.8%, while export growth is forecast to moderate as the increase in LNG production increases hit capacity, although services and non-commodity exports are expected to continue to grow. However, much stronger imports (in line with domestic demand) will see net exports detract from growth. Nevertheless, GDP growth is forecast to lift and average above 3% over FY22 and FY23

The labour market continues to perform well. Despite a small tick up in the unemployment rate of late, employment growth remains healthy. Nevertheless, price pressures remain weak; wage growth is trending higher, albeit slowly and from a low rate, while CPI inflation is very weak at 1.6%y/y Following another soft wages print in Q1 and analysis which suggests that the natural rate of



unemployment is well below 5% (implying there remains significant spare capacity in the economy) the RBA Board lowered the cash rate in June and July 2019 and again in October to 0.75%. The policy statement signalled that further cuts will likely be necessary to stimulate jobs and wages growth, and with the outlook worsening globally we now expect more cuts, with the cash rate to fall to a record-low of 0.5% by mid-2020.

With wages growth well below historical averages, domestic cost push pressures are expected to remain limited in the near term. Underlying inflation is forecast to rise from 1.4% now to 1.9% in FY21. A lack of inflation and continuing slack in the labour market is expected to see the RBA hold rates at the expected record lows of 0.5% until mid-2021, before rising to 1.75% by late-2023 as wages and CPI inflation rise back toward historical averages, and the unemployment rate falls back below 5%. 10-year government bond rates will also gradually rise back over 2% by 2023, from under 1% now. Australian long-term bond rates are expected to rise as a result of the deterioration in the US budget deficit.

Voor Endod Juno							Forecast	S			
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total New Private Investment (+)	-2.1	-5.1	-1.6	4.1	-2.2	-0.3	3.4	8.6	7.0	0.4	-3.3
New Public Investment (+)	-8.0	8.4	6.4	9.8	3.6	-0.8	3.6	6.4	4.3	2.4	0.8
Gross National Expenditure (GNE)	1.1	1.4	2.2	3.5	1.5	1.9	2.7	3.9	3.9	2.3	1.3
GDP	2.3	2.8	2.3	2.9	1.9	2.3	2.6	3.3	3.2	2.6	2.0
Inflation and Wages											
CPI (Yr Avg) - RBA forecasts (*)	1.7	1.4	1.7	1.9	1.6	1.8	1.9	2.1	2.3	2.3	2.3
Wage Price Index (Jun on Jun)(**)	2.3	2.1	1.9	2.1	2.4	2.6	2.8	3.2	3.6	3.6	3.3
Wage Price Index (Yr Avg)(**)	2.4	2.1	2.0	2.1	2.3	2.4	2.8	3.2	3.6	3.6	3.3
Average Weekly Earnings (Yr Avg)(^)	2.4	1.9	2.0	2.4	2.7	3.2	3.5	4.0	4.2	4.2	3.8
Employment											
<ul> <li>Employment Growth (Yr Avg)</li> </ul>	1.2	2.3	1.5	3.0	2.4	1.9	1.2	1.7	2.2	1.7	1.1
– Employment Growth (May on May) (%)	2.0	1.9	2.1	2.6	2.8	1.3	1.4	1.9	2.3	1.3	1.2
– Unemployment Rate (May) (%)	5.9	5.7	5.5	5.4	5.2	5.2	5.1	4.9	4.6	4.8	5.0
Labour Productivity Growth											
– Total	1.1	0.6	0.8	-0.1	-0.4	0.4	1.3	1.6	1.0	0.9	0.9
– Non-farm	1.1	0.8	0.7	0.0	-0.2	0.3	1.2	1.7	1.0	0.9	0.9

#### Table 2. Australia – Key Economic Indicators, Financial Years

+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 2021 quarter. Beyond this, we've used

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.

^ Average Weekly Ordinary Time Earnings for Full-Time Adult Persons.

e: estimate

Overall, average annual GDP growth over the five years to FY24 is forecast to be 2.9%, which will be an improvement on the 2.5% average of the 5 years to FY19. Growth will also be far more domestically oriented, with Gross National

Source: BIS Oxford Economics, ABS and RBA



Expenditure forecast to average 3.2%, compared to only 2% in the 5 years to FY19.

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

The tightening of monetary policy will precipitate an overall slowing of economic growth in the mid-2020s. At the same time, we also expect a cyclical slowdown in non-residential building and mining investment, as a number of large projects are completed at the same time, while the completion of some large public infrastructure projects will also see a stalling of public investment. The upshot will be a sharp deceleration in domestic investment and spending growth, leading to an easing in GDP growth back below to an average of 2.3% over FY24 and FY25. Longer term, as consumers and businesses re-adjust to the 'normalcy' of higher interest rates – although at much lower levels than the 2000s and early 2010s – investment and consumer spending will return to long term trend (or potential) rates of growth over the second half of the 2020s.

#### 2.2 OUTLOOK FOR THE SOUTH AUSTRALIAN ECONOMY

The South Australian economy has experienced slower growth over the past year, with State Final Demand (SFD) slowing to 1.6% in FY19. This followed a surge in the pace of growth over the two years to FY18, with SFD reaching 3.6% in FY17 and 3.4% in FY18. In terms of Gross State Product (GSP), the picture is somewhat weaker, with 2.4% in FY17 and 2% growth in FY18 (which was well below national GDP growth of 2.9% in FY18), while GSP slowed sharply in FY19 to 1.4% due to due to weaker SFD growth and a collapse in international exports from the state. Job creation also improved over the two years to FY18, but after 2.2% growth in FY18, employment eased to 1.4% in FY19. The state's unemployment rate remains above the national average and, after averaging 5.8% in FY19, jumped to 7.3% in August 2019, before settling back to around 6.2% over September and October 2019 – still well above the current national rate of 5.3%.

A pick-up in overall investment has boosted the state economy, with total investment increasing 4.3% in FY17, 7% in FY18 and a further 1.1% in FY19. Over the past year, moderate rises in dwelling and business have been partially offset by a second year of modest declines in public investment.

New public investment recovered strongly over FY16 and FY17 before suffering small declines in FY18 and FY19. Further moderate declines are anticipated over the next two years as a number of major projects are completed, and few new major projects commence. The \$415m Osborne Shipyard upgrade (the building component of the \$535m facility for the build of the Future Frigates, which commenced in the March quarter 2018) and the \$180m Queen Elizabeth hospital expansion (commencing in 2019) will be the biggest public projects. Another round of road, rail and utilities infrastructure projects, plus increased public non-dwelling buildings, are projected to drive solid increases in public investment from FY23.

Dwelling investment recorded a small rise in FY19, but with a residential oversupply in the state, a moderate decline is forecast for FY20, before turning around in FY21 and showing solid growth over FY22 and FY23. Dwelling investment is forecast to plateau in FY24 before another decline in FY25.



New business investment rebounded by 10% in FY18 and rose a further 3% in FY19. It is forecast to plateau in FY20, before solid increases resume over the subsequent 3-4 years. The recovery has been led by a surge in non-residential building over the past two years, driven by the \$190 million Skycity Casino expansion, the \$210 million Calvary Hospital, the \$100 million Adelaide Airport Terminal Expansion, and a strong recovery in office and shops construction. Work done will plateau in in FY20, with further solid increases over the following 3-4 years. Private engineering construction jumped in FY18 and rose a further 3% in FY19, boosted by a \$600 million debottling and enhancement project at Olympic Dam, a pick-up in gas-related activity, telecommunications-related construction and major electricity-related construction, including wind farms, other generation capacity and network enhancements. However, private engineering construction is forecast to fall sharply in FY20 as a number of major projects finish. The start of the \$2.4 billion Olympic Dam 'Brownfield' expansion will boost business investment from FY21, with other major copper and oil and gas projects also contributing. These projects will provide a major boost to South Australia and help drive strong growth in SFD and GSP over the period from 2021 to 2025.

Employment growth is expected to slow over the next two years, and particularly in FY20 due to the overall decline in investment. Coupled with weak wages growth and low population growth, the end result will be a deceleration in consumer spending. Low population growth will continue to be an ongoing constraint to the state's economic growth. Population growth was only 0.6% in FY17 but has since improved to around 1% in FY19. We expect it to remain weak as South Australians go interstate in search of job opportunities. Over the next six years population growth is predicted to average 0.9%, around 0.7% lower than the national average.

Meanwhile, constrained state government finances will lead to slower growth in government spending, after the surprising strength of the past few years. Note that most of the rise in public investment over 2015/16 to 2017/18 has come from Commonwealth funding rail. defence. universities and (roads, telecommunications). The state government finances are constrained, with ongoing deficits and debt and a scarcity of public assets to provide revenue or to sell after most of the states' electricity and ports assets were privatised over the past two decades. State government finances are also likely to remain constrained with stamp duty revenue set to fall and payroll tax growth expected to weaken from next year in line with weak employment growth.

On the other hand, state and federal government commitments to defence projects will support the 'Defence State' economy. Headquarters of major aerospace, land and maritime defence companies are located in the state and numerous large projects will be based in South Australia over the coming decades. There is now a continuous timeline to construct surface warships and submarines for decades to come.

The Commonwealth government announced that Adelaide would be the hub of a continuous naval shipbuilding industry, setting out plans worth \$40 billion for the construction of naval patrol vessels and other boats to fill the gap before construction of frigates and submarines begin. The Minister for Defence



announced plans to begin building 12 Offshore Patrol Vessels from 2018 (although after the initial vessels, the construction of the remainder would move to Western Australia). This is expected to avoid the so-called 'valleys of death' between projects, which would have seen a loss of employment and workplace expertise, once current work on the Air Warfare Destroyers is completed around 2020.

The last of the navy's three air warfare destroyers are still under construction in Adelaide and construction of 12 offshore patrol vessels officially began in Adelaide in November 2018. The offshore patrol vessels then fill the gap until the \$35 billion Future Frigate construction begins in Adelaide in 2020. The frigate program will directly contribute to more than 2,000 jobs, and maintenance through the vessels' lives will be worth another \$400 million. There is also a \$50 billion contract to build 12 new submarines in Adelaide, which is expected to create 2,800 jobs, but not get underway until early-to-mid next decade. Shipbuilding projects will have beneficial flow on effects, particularly to local steel manufacturers.

South Australia will also be the base for a number of land defence vehicle and aviation projects. For example, a \$1 billion program to modernise the Army's fleet of M113 armoured personnel carriers will be based in South Australia, and South Australian manufacturers will also be part of the supply chain for the army's LAND 400 program to build land combat vehicles. South Australia will also benefit from 30 years of sustainment and upgrade work on the fleet of P-8A Poseidon maritime surveillance aircraft, which will be based at the RAAF Base in Adelaide.

#### Figure 3

#### South Australia Timeline of Maritime Defence Projects



Source: BIS Oxford Economics



Now recognised as the 'Defence State', South Australia will benefit from aviation, systems, maritime and land defence projects, with the largest boost to the state's manufacturing sector and flow-on effects to employment and consumer spending. However, it is important to recognise that this economic boost essentially comes mostly from taxpayers in other states, given that South Australia only accounts for 6% of the national economy (% of GDP).

Meanwhile, the manufacturing, agriculture, mining and other tradeable sectors (including education and tourism) will also benefit from a forecast sustained 'competitive' AUD of US\$0.68 to US\$0.78 over the next six years to 2025.

Overall, SFD is forecast to weaken sharply in FY20 to below 1% due to the decline in investment, before bouncing back to a 2.2% increase in FY21 as investment rebounds. Thereafter, we expect an improvement and acceleration in SFD to over 3% in FY23, driven by strengthening investment and employment growth. GSP is expected to track higher than SFD over FY20 and FY21, thanks to positive export growth, before averaging 2.7% over FY22 and FY23. Employment growth is forecast to average a respectable 1.5% over the five years to FY24. The stronger employment growth expected over FY22 to FY24 is expected to push the state's unemployment rate is forecast to fall from around 5.7% now to under 5% in FY23, close to the projected national average of 4.6% at that time. The tightening in the state's labour market will, in turn push up wages in the state.

Both SFD and GSP are forecast to weaken in FY25 due to declines in residential and business investment, the latter as a number of major projects wind down. Overall, SFD growth is forecast to average 2.3% growth over the five years to FY25 (similar to the past 5 years), while GSP is forecast to average 2.1% over the five years to FY25 (compared to an average of 1.5% for the past 5 years and 2.3% for the past three decades).

						Forecast					
Year Ended June	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
South Australia											
Total Construction Activity(*)	-9.0	-1.4	3.7	19.4	1.0	-9.7	5.2	5.5	6.9	-0.4	-7.7
State Final Demand	1.8	1.2	3.6	3.4	1.6	0.5	2.2	2.7	3.6	2.4	0.5
Gross State Product (GSP)	0.9	0.3	1.5	2.3	1.4	1.3	2.2	2.6	2.8	2.3	1.7
Employment Growth (Year Average)	0.5	0.5	1.3	2.2	1.4	1.1	1.2	1.6	2.2	1.3	0.2
Australia											
Total Construction Activity(*)	-6.9	-4.9	-3.1	12.0	-9.4	-2.9	2.0	10.5	7.2	-0.3	-5.7
Australian Domestic Demand	0.9	1.4	2.2	3.5	1.7	1.8	2.6	3.8	3.9	2.4	1.3
Gross Domestic Product (GDP)	2.3	2.8	2.3	2.9	1.9	2.3	2.6	3.3	3.2	2.6	2.0
Employment Growth (Year Average)	1.2	2.3	1.5	3.0	2.4	1.9	1.2	1.7	2.2	1.7	1.1

Table 3. South Australia – Key Economic Indicators, Financial Years

Source: BIS Oxford Economics and ABS

\* Total construction work done in constant 2016/17 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.

### **3. INFLATION AND WAGE FORECASTS**

#### 3.1 CPI INFLATION: CURRENT CONDITIONS AND FORECASTS

Consumer price inflation has been subdued for the past four years, with the substantial depreciation of the A\$ (which would normally increase inflation) between 2013 and 2016 coinciding with a sharp correction in oil prices (which reduced both petrol prices and freight costs) and falling internal price pressures. Underlying inflation fell below the Reserve Bank's target 2-3% band in March 2016 and has stayed there, while headline inflation has also remained (mostly) below 2% since late 2014.

Tradeables inflation has been especially weak since the June quarter 2014. Stagnant world prices for manufactured goods, reduced transport costs, margin compression by exporters globally, and potential hedging by importers have combined to limit price rises for imported consumer goods. Furthermore, the appreciation in the Australian dollar over the 18 months to December 2017 reduced import prices, although the A\$ depreciation over the past year has partially reversed this trend, leading to rises in tradeables inflation of 1.1% over FY19. Rises in tradeables inflation have been driven mainly by food, motor vehicles, consumer durables and overseas travel and accommodation.

Meanwhile, non-tradeables inflation – which now constitutes almost two-thirds of the CPI – averaged 3.1% through FY18, before easing to 2.0% through FY19. Driving non-tradeables inflation in FY18 were sharp rises in electricity and gas prices, cigarettes and tobacco (due to hikes in excise taxes), child care, house purchases, health services, education and insurance services. In FY19, non-tradeables inflation have been contained by dismal wages growth, which has kept down unit labour costs, limiting cost-push inflationary pressures.

Overall, the headline CPI inflation rate recently peaked at 2.1% in the June quarter, 2018, largely due to a spike in petrol prices, before declining through FY19 and bottoming at 1.3% in the March quarter 2019, largely due to a sharp decline in petrol prices. In the June quarter 2019, the inflation rate then increased to 1.6%, before rising to 1.7% in the September quarter 2019. Nevertheless, with inflationary pressures building globally and the economy gradually absorbing the remaining spare capacity, we expect inflation to rise from here, albeit only gradually and slowly.

Putting upward pressure on the headline rate will be further planned increases in tobacco excise duty. Tobacco excise duties are legislated to increase by 12.5% each year on September 1 of each year from 2017 through to September 1, 2020. This combined with the bi-annual indexation of the tobacco excise to average weekly ordinary time earnings and aligning the tax treatment of roll your own tobacco and cigarettes, will add significantly to headline CPI – around 0.25% points to the annual rate.

In the near term, upward price increases will come from the depreciation of the A\$ since early 2018, with the exchange rate declining from over US79 cents in January 2018 to around US68 cents over August to November 2019. Our forecast is for the A\$ to remain below US70 cents until early 2021, before gradually rising.



The drought and higher food import prices (from the lower \$A) are also expected to push up food prices over the near term, reversing a key factor which has muted prices over recent years – food accounts for over 10% of CPI basket (excluding meals out and takeaway food). Food inflation has averaged close to 3% p.a. over the past two decades but had been very weak over the past five years (averaging only 1.2% p.a.), 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 pick up over the medium term as global oversupply dissipates.

Offsetting these inflationary pressures will be the benign oil price outlook and soft growth in wages over the next two years. Headline CPI inflation is forecast to gradually pick up over the next two years, but still remain below 2%. It is our view that inflation will subsequently accelerate, pushing above 2% in FY22 and then rise to around the 2.5% mid-point of the RBA's band during FY23 as economic growth increases, profits, employment and wage growth strengthen, and inflationary pressures re-build. The rise in the A\$ toward US78 cents in late FY23 will provide some offsetting pressures between FY20 and FY24. An expected softening in the economy around mid-decade will see price and wage pressures weaken, before again rising to 2.5% over the latter half of the 2020s.

#### CPI inflation projected to average close to 2.5% over the 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 constitutes around one-third of the CPI basket, is forecast to increase by an average of around 1.0% - 1.5% per annum contributing around 0.4% 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 (comprising the remaining two-thirds of the basket) is assumed to increase by around 3.0 to 3.3% per annum contributing roughly 2.1% 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 will also contribute to the maintenance of relatively high non-tradeables inflation.

Taken together, we expect annual CPI inflation to increase by 2.5% per annum on average. In forecasting annual tradeables inflation of around 1.5% (compared to 1.2% on average for the past 16 years), we have assumed the following:

 We don't expect a rapid rise in the Australian dollar to mute tradeables inflation like it did in the 2000s, and early this decade. The Australian dollar rose from US 54 cents in 2000/01 to US\$1.03 by 2011/12. We have a modest rise back to US78 cents by 2023 and then a drift back to the long-term average of 76 US cents.



- We don't expect a significant downward pressure on world inflation from significant increases in manufacturing productivity and rapid technological advances, as occurred particularly in China from the late 1990s to early 2010s.
- There will be upward pressure on food prices from rising demand from a growing Asian middle class.
- Oil prices will rise over the long term, due to the rising cost of extraction, as the lower cost reserves are exhausted



#### Fig. 4. Australia: Wages and Prices



	Average	Weekly	Wage	Price	Offic	ial
Year Ended	Ordinary Time	e Earnings <sup>(1)</sup>	Index (All Ir	ndustries)	Headline	CPI <sup>(2)</sup>
June	\$/week	%CH	Index	%CH	Index	%CH
2000	765		71.7		69.4	
2001	804	5.1	74.2	3.5	73.6	6.0
2002	847	5.4	76.7	3.3	75.7	2.9
2003	890	5.0	79.3	3.5	78.0	3.0
2004	932	4.7	82.2	3.6	79.9	2.4
2005	973	4.4	85.3	3.7	81.8	2.4
2006	1,018	4.6	88.7	4.1	84.4	3.2
2007	1,054	3.6	92.2	3.9	86.9	3.0
2008	1,106	4.9	96.1	4.1	89.8	3.4
2009	1,166	5.5	100.0	4.1	92.6	3.1
2010	1,231	5.6	103.1	3.1	94.8	2.3
2011	1,283	4.2	107.0	3.8	97.7	3.1
2012	1,338	4.3	110.9	3.6	100.0	2.3
2013	1,400	4.6	114.6	3.3	102.3	2.3
2014	1,442	3.0	117.6	2.6	105.0	2.7
2015	1,477	2.4	120.4	2.4	106.8	1.7
2016	1,505	1.9	123.0	2.1	108.3	1.4
2017	1,536	2.0	125.4	2.0	110.2	1.7
2018	1,573	2.4	127.9	2.1	112.3	1.9
2019	1,615	2.7	130.9	2.3	114.1	1.6
Forecasts						
2020	1,666	3.2	134.1	2.4	116.1	1.8
2021	1,724	3.5	137.8	2.8	118.3	1.9
2022	1,794	4.0	142.1	3.2	120.8	2.1
2023	1,869	4.2	147.2	3.6	123.6	2.3
2024	1,946	4.2	152.5	3.6	126.5	2.3
2025	2,020	3.8	157.5	3.3	129.4	2.3
	С	ompound An	nual Growth	Rates (3)	•	
1990-2000	3.9				2.1	
2000-2010	4.9		3.7		3.2	
2010-2019	3.1		2.7		2.1	
2019-2025	3.8		3.1		2.1	
2020-2025	3.9		3.3		2.2	

#### Table 4. Wages and Prices Growth - Australia

Source: BIS Oxford Economics, ABS

(1) Average Weekly Ordinary Time Earnings for full-time adults. Data is year ended

May (available only mid month of quarter).

(2) Headline CPI forecasts based on Reserve Bank of Australia

forecasts to the December 2021 quarter. Beyond this, we've taken the 'geometric mean of the 'official' inflation forecasts over the next 10 years, which includes RBA forecasts to December quarter, 2020 and then 2.5% (mid-point of RBA's '2-3% target' range) beyond then.

(3) CAGR (Compound Annual Growth Rates) for 2020-2025 is CAGR for 2020/21 to 2024/25 inclusive (ie next Revenue Determination period).



#### 3.1.1 RBA CPI Forecasts are used to calculate real wages

To calculate real wage increases, we deflate nominal wages growth by deducting expected inflation over a 10-year period, using the CPI forecasts from the Reserve Bank of Australia (RBA). The RBA's August 2019 'Statement on Monetary Policy' forecast the headline CPI rate at "1¾ per cent" in the December quarter 2019 and 2% in the June quarter 2020 – giving an average of 1.75% for FY20. The RBA then forecasts headline CPI to remain at 1.75% in December 2020 and then to rise to "2 percent" in both the June 2021 quarter (giving a year average of 1.9% for FY21), holding at 2% in the December quarter 2021. We then impose the mid-point of the RBA's target band, 2.5%, as the projection for the June quarter 2023, giving a year average CPI rate of 2.1% for FY22.

Expected inflation for the next 10 years is derived by using the geometric mean of RBA forecasts for the next three years, with the 2.5% mid-point of the RBA's inflation target band (i.e. 2 to 3%) used for the remaining 7 years – to give an average of 2.3% for FY23 to FY25. This methodology has been adopted by the AER (Australian Energy Regulator) in their recent revenue decisions. For example, see Transgrid Draft Determination 2018-23, Attachment 3, page 142. Whole Economy Wage Outlook

#### **3.2 NATIONAL WAGES OUTLOOK**

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.

Wages growth has slowed markedly over the past 5 years, primarily due to weaker demand for labour, caused by both cyclical and structural factors. Among the underlying structural changes causing this unspectacular wage growth are increasing market flexibility and casualisation of the work force (what is commonly coined the 'gig-economy'), falling union membership, slower productivity growth and the effects of lower inflation expectations.

Low wages growth is both a product of and key cause of low underlying inflation. Low wages are keeping business costs down and thus muting upward price pressures, while a significant section of pay deals are being 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 has been just above 5% recently. 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 decline in recent years, as a result of falling rates of unionisation and increasing casualisation. Given this, we still see spare capacity in the labour market. Compounding this, Australia's underemployment rate remains at historic highs – averaging 8.4% over the past year. The high underutilisation rate – the sum of unemployment and underemployment – reflects considerable slack in the labour market, which limits the bargaining power of workers and reduces pressure on wages.





#### Fig. 5. Employment and Unemployment

Looking ahead, we expect employment growth to weaken over the next two years. There has been a slowdown in the growth of job advertisements recently (a good leading indicator for employment growth), and the recent high frequency indicators have confirmed our view that the economy is growing at a solid but not spectacular pace. Jobs growth will weaken due to the worsening downturn in residential investment, slower growth in government spending and subdued consumer spending. With employment growth set to remain modest and unemployment to drift up marginally, upward pressure on wages will be limited.

The latest data suggests that we have moved off the bottom of the current wage cycle, with the wage price index (WPI) rising from its lows of 1.9% in June 2017 to 2.4% in the June quarter, 2019. These increases may have been helped by higher increases in the minimum wage decisions and collective bargaining outcomes over the past year.

### 3.1% increases in the National Wage Case and recent higher enterprise agreements will push wages up

At the Annual Wage Review in June 2019, the Fair Work Commission awarded a 3.1% increase to the National Minimum Wage (NMW), down from the 3.5% awarded in 2018, but still higher than recent wage increases in the other pay setting segments. In its recent decisions, the panel estimated around 23% of the labour force (including part-time and casual workers) have their pay set by awards (including around 13% of full-time workers – see Table 5). The minimum award rises take effect from the 1st July 2019. However, the effects may reach a much larger number of employees, potentially up to 40% in total, because wage increases in some enterprise agreements and individual arrangements are linked or benchmarked in some way to the review's outcome.



There has also been an improvement in the outcome of enterprise agreements (via collective bargaining) – under which 38% of the workforce receive their pay increases (see Table 5) - since the low of 2.2% set in September guarter, 2017. Average annualised wage increases (AAWIs) formalised in the enterprise agreements have averaged 2.8% over the past year (latest data from the Department of Jobs and Small Business). It's likely that these outcomes could have been influenced by the 2017 and 2018 national wage cases which awarded 3.3% and 3.5% (which was appreciably higher than the 2.4% and 2.5% increases awarded in the previous two years). The improving labour market may have helped lead to the recent higher outcomes in collective agreements. However, the recent improvement in formalised agreements will take time to manifest in overall wage outcomes. The AAWI in current operating agreements is 2.7%, and, given the average duration for the collective agreement is around 3 years, overall wage agreements in the collective bargaining segment - which cover 38% of the workforce - are likely to see limited increases on the 2.7% recorded in the latest data.

The remaining 48% of 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. Aggregate wage growth has slowed significantly since December 2012 due to a collapse in wage increases awarded to the workers who are on individual agreements (contracts) with their employers. Workers on individual agreements, whose wage rises respond more to prevailing labour market conditions, have been at the mercy of slackness in labour market and by the structural and cyclical weaknesses outlined above and is the main reason why WPI increases are near record lows.

Nevertheless, we expect a continuation of the higher NMW to filter to overall improvements in pay rises in the collective bargaining and individual arrangements segments to gradually lift the wage price index (WPI) from 2.1% in FY18 to 2.3% in FY19 to 2.5% in FY20 and 2.8% in FY21 – which is in line with most other forecasters but below Commonwealth Treasury forecasts of 2.75% and 3.25% for these two years. Other wage measures – average weekly earnings (AWE) and average weekly ordinary time earnings (AWOTE) - will also pick up over the next two years, slightly faster than WPI due to compositional effects and bonuses and incentives linked to recent higher profits.

Wage growth is then predicted to accelerate from FY22, as tighter conditions in the labour market feed through. The forecast increases in profits, combined with rising price inflation and declines in unemployment, will push up wages over FY22 to FY24. The WPI is projected to increase 3.2% in FY22 and peak at 3.6% in both FY23 and FY24, before subsequently easing as economic growth slows around the mid-2020s – while AWE and AWOTE are forecast to rise to around 4.2% around 2023.

In the long run, wage growth is determined by productivity growth and inflation. We expect that AWE growth will level off at its long run level of around 3.7%, driven by non-farm productivity growth of around 1.2% and inflation of around 2.5%. In terms of the wage price index, long run growth in the WPI is expected to be around 0.3% less than AWE, in line with the average historical trends over the past two decades since the introduction of the WPI.



Longer-term, tight labour markets will emerge once again given the ageing population and become a chronic problem for non-tradeables inflation. The large pool of unemployed labour that was a feature of the 1990s has gone. Moreover, skilled labour shortages will remain a problem for the foreseeable future. In addition, administrative charges including health price increases (which invariably rise faster than overall CPI) will place upward pressure on domestic services inflation. Indeed, during the next decade, both skilled and general labour shortages will begin to emerge due to demographic factors, in particular retirements of Australia's 'baby boomers' generation. Australia will continue to experience sustained labour shortages in the decade to 2030 (and beyond), and these shortages will become more significant as the workforce ages. As Australia's 'baby boomers' generation move into the 65+ age group, the growth of the 15-64-year-old component of Australia's working age population (the overwhelming majority of Australia's workforce) will begin to slow.

With more people retiring, the supply of labour is expected to increase at a slower rate through the coming decade. This will lead not only to skilled labour shortages, but total labour shortages. Meanwhile, the demand for labour will continue to rise, particularly in periods of strong investment and economic growth. These sustained labour shortages will result in a long-term upward bias in wage inflationary pressures.

#### Table 5. Wages Growth - All Industries: Australia

Year	% of		Year Average % change													
Ended	Workforce								Forecas	sts					Average	Average
June	in 2018	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2020-25	2021-25
Wage Price Index																
Awards Only	13.1%	2.9	2.6	3.0	2.5	2.4	3.3	3.5	3.1	3.1	3.3	3.5	3.4	3.1	3.3	3.3
Collective Agreements	38.4%	3.6	3.5	3.3	3.2	3.1	2.8	2.8	2.9	3.1	3.3	3.6	3.7	3.7	3.4	3.5
Individual Arrangements	48.5%	3.2	1.9	1.5	1.1	0.8	1.0	1.6	1.9	2.4	3.0	3.6	3.5	2.9	2.9	3.1
Wage Price Index (a)	100%	3.3	2.6	2.4	2.1	2.0	2.1	2.3	2.4	2.8	3.2	3.6	3.6	3.3	3.2	3.3
Compositional Effects +																
Bonuses,etc		1.3	0.4	0.0	-0.2	0.1	0.4	0.3	0.7	0.7	0.9	0.7	0.6	0.6	0.7	0.7
AWOTE (b)	100%	4.6	3.0	2.4	1.9	2.0	2.4	2.7	3.2	3.5	4.0	4.2	4.2	3.8	3.8	3.9
							0					بالمعامية		Development		

(By Full-time Workforce Segmented by Pay Setting Method)

Source: BIS Oxford Economics, Haver Analytics/ABS, Department of Employment

(a) Ordinary time hourly rates of pay for full-time adults.

(b) Average Weekly Ordinary Time Earnings for Full-time Adults (excludes overtime but includes bonuses).

#### 3.2.1 South Australian 'All Industries' Wages Outlook

The 'all industries' WPI for South Australia should be used to escalate SAPN's out-sourced or contracted ICT labour and other professional services. We believe that the all industries WPI would cover the broad spectrum of outsourced labour cost escalation. However, where there is a significant proportion of out-sourced labour which is contracted to perform construction-type activities in the capital expenditure budget, we would advise that the construction WPI



would be more appropriate for that type of out-sourced labour. Forecasts of construction wages growth for South Australia is set out in section 4.2.

Growth in total 'all industries' wages at the state level usually depends on the relative strength of the state economy and labour markets, compared to the national average. Over the four years to FY18 inclusive, the South Australian all industries state average WPI was consistently higher than the national average, averaging over 0.1% higher than the national average (see tables 1, 4 and 10). The relatively strong growth in state final demand (SFD) in South Australia (compared to the growth in Australian domestic demand) and steady improvements in the state's labour market – with state's unemployment falling from 7.3% in FY16 to 5.8% in FY18 – underpinned the relative strength of general wages growth in the state. However, in FY19, South Australian all industries WPI growth underperformed the national average by over -0.1%, as the improvement in the labour market began to reverse and growth in SFD slowed sharply.

Although we expect the South Australian all industries WPI to improve in FY20 and match the growth in the Australian average, relatively weaker growth in SFD, GSP and employment over FY21 and FY22 is expected to see South Australia slightly underperform national wages growth in those two years. Subsequently, a marked improvement in SFD, employment and the state's unemployment rate is then expected to see the state's general wages growth match and then slightly outperform the national average in FY23 and FY24, before relatively slower economic and employment growth in the state sees a sharp deceleration in the South Australian all industries WPI in FY25.



#### **BIS Oxford Economics Wage Growth Model**

BIS Oxford Economics' model of wage determination 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 (see Table 5). 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 2018, the minimum wage has increased by 3.5% following a 3.3% rise in July 2017 and a 2.4% rise on 1 July 2016. 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.
- For employees under collective agreements (representing 38% of all employees), 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, BIS Oxford Economics use the most recent agreements formalised in recent quarters as a basis for our nea- term forecasts. Beyond that, collective agreements are based on our expectations of economic conditions.
- The remaining 48% of 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 a large influence.

Note in table 5, 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 lowerpaid 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).



### 4. INDUSTRY WAGE FORECASTS – ELECTRICITY, GAS, WATER & WASTE SERVICES AND CONSTRUCTION: AUSTRALIA AND SOUTH AUSTRALIA

In this section, we provide an outlook and forecasts for the WPI (wage price index) for the EGWWS (electricity, gas, water and waste services) and construction sectors at the national level and for South Australia.

#### **4.1 EGWWS WPI FORECASTS**

The EGWWS wage price index 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 17 years (see Table 7 and Fig 8). 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 2.6% over the past 6 years, 0.4% higher than the 2.2% national average. While growth in average weekly ordinary time earnings (AWOTE) of the electricity, gas, water and waste services sector has displayed considerably more volatility over the past two decades (mainly related to compositional effects), AWOTE growth in the sector has also usually been higher than the national average over the past six years (see Table 7).

### Wages growth in the EGWWS sector is invariably higher than the total Australian national (all industry) average.

To a large extent, this has been underpinned by strong capital works program in the utilities sector since the beginning of the last decade until 2012/13 (resulting in robust employment growth over the same period), strong competition from the mining and construction workers for similarly skilled labour and the powerful 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 impacting on wages growth in particular. 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 Industry 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).

Sector	% of Total Employment			Five-Year Average					
	Nov'18	Jun'13	Jun'14	Jun'15	Jun'16	Jun'17	Jun'18	Jun'19	(YE June)
Private		3.4	2.6	2.3	2.0	1.8	2.0	2.2	2.1
Public		3.2	2.8	2.6	2.5	2.3	2.4	2.5	2.5
Industry									
Mining	2.0%	4.5	2.8	2.3	1.6	1.0	1.3	2.0	1.6
Manufacturing	7.2%	3.2	2.9	2.7	2.4	2.0	2.2	2.1	2.3
Electricity, Gas, Water and Waste Services	1.2%	4.2	3.3	2.8	2.4	2.2	2.0	2.8	2.4
Construction	9.2%	3.3	3.0	2.1	1.6	1.7	1.9	1.9	1.8
Wholesale Trade	3.2%	4.4	2.2	2.2	1.9	1.8	1.8	2.1	2.0
Retail Trade	10.0%	2.5	2.6	2.2	2.4	1.9	1.6	1.9	2.0
Accommodation and Food Services	7.1%	2.5	2.3	2.6	2.3	2.3	2.1	2.4	2.3
Transport, Postal and Warehousing	5.1%	3.5	2.5	2.4	2.2	2.0	1.8	2.3	2.1
Information Media and Telecommunications	1.8%	2.9	2.4	2.5	2.2	1.9	2.0	1.8	2.1
Finance and Insurance Services	3.5%	3.2	2.7	2.7	2.6	2.1	2.1	2.4	2.4
Rental, Hiring and Real Estate services	1.7%	2.8	2.7	2.3	1.6	1.3	1.7	2.1	1.8
Professional, Scientific and Technical Services	8.5%	3.5	1.9	1.9	1.6	1.4	1.7	2.2	1.8
Administration and Support Services	3.2%	3.3	2.5	1.9	1.4	1.4	1.8	2.1	1.7
Public Administration and Safety	6.6%	3.5	2.9	2.2	2.2	2.2	2.2	2.5	2.2
Education	8.2%	2.8	2.9	3.0	2.7	2.4	2.4	2.5	2.6
Health Care and Social Assistance	13.3%	3.3	2.9	2.7	2.5	2.4	2.8	2.9	2.7
Arts and Recreation Services	1.9%	2.9	2.7	3.0	2.4	2.0	2.5	2.6	2.5
Other Services	3.8%	3.2	2.4	2.2	2.2	1.9	2.3	2.3	2.2
State/Territory									
New South Wales	31.9%	3.1	2.5	2.3	2.1	2.1	2.1	2.3	2.2
Victoria	26.4%	3.0	2.7	2.7	2.1	2.0	2.5	2.9	2.4
Queensland	19.7%	3.0	2.6	2.4	1.9	1.9	2.2	2.3	2.1
South Australia	6.6%	3.3	3.3	2.6	2.3	2.2	2.0	2.2	2.3
Western Australia	10.6%	3.4	2.4	2.1	1.8	1.4	1.5	1.6	1.7
Tasmania	2.0%	2.9	2.3	2.5	2.2	2.0	2.5	2.4	2.3
Northern Territory	1.1%	3.2	2.8	2.4	2.0	2.1	1.5	1.9	2.0
Australian Capital Territory (ACT)	1.8%	2.9	2.3	1.9	1.9	1.9	1.8	2.2	1.9
	10001			. ·			<u>.</u>		
	100%	3.3	2.6	2.4	2.1	2.0	2.1 NS Oxfor	2.3	2.2

#### Table 6. Wage Price Index Growth by Industry Sector and by State

(1) Measures changes in the price of labour. Ordinary hourly rates of pay (excludes overtime and bonuses)

(2) Excludes Agriculture, Forestry & Fishing

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 past 10 years, a higher proportion of workers on collective agreements is associated with higher wage growth, with a correlation coefficient of +0.6 (see Figure 6). 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.





Figure 6. Average wage growth and unionisation rates by industry, 2007-2016

The key elements of the utilities wage forecast are set out in Table 8. This shows that 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%, compared to 3.4% for all industries.

BIS Oxford Economics analysis shows collective agreements in the EGWWS sector have been on average around 1.5% higher than CPI inflation over the decade to 2010 (excluding the effects of GST introduction in 2000/01). In the five years to 2010 when the labour market was very tight, collective agreements were on average 1.7% 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 1.4% above the 'official' CPI over the forecast period, which 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, BIS Oxford Economics 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.

We expect EBA outcomes to show modest growth over the next two years but remain above inflation and the 'all industries' average given that the demand for skilled labour remains strong and particularly given the recent high enterprise agreement outcomes in the construction sector. This 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 decade. Figures 12 and 13 illustrate this relationship, and shows employment has a stronger relationship with utilities engineering construction rather than utilities output.

#### Wage increases under Individual agreements rebounded in FY19 and these and EBAs will strengthen due to stronger demand for skilled labour from Mining, Construction and defence 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.

Wage growth from individual agreements is estimated to have slowed appreciably over the three years to FY18, although we believe there were compositional effects that negatively impacted the estimation for this segment. Nevertheless, some of this reflected the general weakness in the economy and the full-time labour market at that time. However, we estimate that wage increases in the individual agreements segment rebounded in FY19 to around 2.5% as skilled labour shortages began to manifest. Indeed, recent vacancies data from the ABS has shown a marked increase in job vacancies over the past two years, with vacancies also lifting in the Mining and Construction sectors (see figure 7). Currently there are pressures building: a recent survey by the Australian Industry Group found that 3 in 4 employers reported an increasing shortage of technicians and trade workers, and employees with STEM skills. These are essential workers in the utilities sector. Other business surveys are reporting similar findings in terms of increasing difficulties in sourcing skilled workers.

Although we expect the overall labour market to soften over the next 2 years, we subsequently expect an acceleration of employment growth through FY22, which will outpace population and labour force growth and the unemployment rate is expected to drop below 5% early 2022. Hence, we expect to again witness the re-emergence of skilled labour shortages and competition for scarce labour 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 4 years to FY23, before easing (see figure 10). Meanwhile, there is similar strong growth underway in the non-residential building and civil infrastructure segments in the Construction sector, although these are somewhat offset by the current residential building downturn. However, with residential construction expected to recover over FY22 to FY24, there will be a synchronised upswing in the overall construction sector over FY22 and FY23 (see figure 9), leading to strong labour demand in that sector.

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 attract and retain staff and we expect wages under both individual arrangements and collective agreements to increase markedly over the next few years.



#### Figure 7. Job Vacancies as % Employment by Industry









#### Figure 9. Australia – Construction Activity (2016/17 prices)







	Average	Weekly Ordir	nary Time Earn	ings ( <sup>1</sup> )	Wage Price Index ( <sup>2</sup> )							
Year Ended			Electricity, G	Bas, Water			Electricity, G	Bas, Water				
June	All Indu	Istries	and Waste	Services	All Indu	stries	and Waste	Services				
	\$	%CH	\$	%CH	Index	%CH	Index	%CH				
2000	765	3.2	867	4.8	71.7	3.0	68.2	3.8				
2001	804	5.1	918	6.0	74.2	3.5	70.8	3.8				
2002	847	5.4	981	6.8	76.7	3.3	73.8	4.2				
2003	890	5.0	1,001	2.1	79.3	3.5	76.8	4.1				
2004	932	4.7	1,057	5.5	82.2	3.6	79.9	4.1				
2005	973	4.4	1,091	3.2	85.3	3.7	83.3	4.3				
2006	1 018	4.6	1,111	1.9	88.7	4.1	87.6	5.2				
2007	1 054	3.6	1,152	3.7	92.2	3.9	91.8	4.8				
2008	1 106	4.9	1,183	2.7	96.1	4.1	95.7	4.2				
2009	1 166	5.5	1,255	6.1	100.0	4.1	100.0	4.5				
2010	1 231	5.6	1,351	7.6	103.1	3.1	104.4	4.3				
2011	1 283	4.2	1,474	9.1	107.0	3.8	108.7	4.2				
2012	1 338	4.3	1,510	2.5	110.9	3.6	112.5	3.5				
2013	1 400	4.6	1,602	6.1	114.6	3.3	117.3	4.2				
2014	1 442	3.0	1,635	2.0	117.6	2.6	121.1	3.2				
2015	1 477	2.4	1,646	0.7	120.4	2.4	124.5	2.8				
2016	1 505	1.9	1,704	3.5	123.0	2.1	127.5	2.4				
2017	1 536	2.0	1,777	4.3	125.4	2.0	130.3	2.2				
2018	1 573	2.4	1,818	2.3	127.9	2.1	132.9	2.0				
2019	1 615	2.7	1,842	1.3	130.9	2.3	136.6	2.8				
Forecasts												
2020	1 666	3.2	1,904	3.4	134.1	2.4	140.6	3.0				
2021	1 724	3.5	1,974	3.7	137.8	2.8	145.1	3.2				
2022	1 794	4.0	2,055	4.1	142.1	3.2	150.1	3.5				
2023	1 869	4.2	2,143	4.3	147.2	3.6	155.9	3.9				
2024	1 946	4.2	2,236	4.4	152.5	3.6	162.1	4.0				
2025	2 020	3.8	2,326	4.0	157.5	3.3	168.0	3.7				
			Compound	Annual Grow	th Rates (2)		-					
2000-2010	4.9		4.5		3.7		4.3					
2010-2019	3.1		3.5		2.7		3.0					
2019-2025	3.8		4.0		3.1		3.5					
2020-2025	3.9		4.1		3.3		3.6					
						Source: E	BIS Oxford Ecor	nomics, ABS				

### Table 7. Total Australia (All Industries) and Electricity, Gas, Water and Waste Services Average Weekly Ordinary Time Earnings and Wage Price Index (Year Average Growth)

(1) Earnings per person for full-time adults. Data is year ended

May (available only mid month of quarter).

(2) CAGR (Compound Annual Growth Rates) for 2020-2025

is the annual growth for 2020/21 to 2024/25 inclusive

i.e. next Revenue Determination period.



Year	% of		Year Average Per Cent Change (a)											
Ended	Workforce						Forecas	st					Average	Average
June	in 2018	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2020-25	2021-25
Wage Price Index														
Awards Only	1.5%	3.0	2.5	2.4	3.3	3.5	3.1	3.1	3.3	3.5	3.4	3.1	3.3	3.3
Collective Agreements	64.6%	3.3	3.2	3.0	2.9	2.9	3.1	3.3	3.7	3.9	4.0	3.9	3.7	3.8
Individual Arrangements	33.9%	2.0	0.9	0.6	0.4	2.5	2.6	2.8	3.0	3.7	3.8	3.2	3.2	3.3
Wage Price Index (a)	100%	2.8	2.4	2.2	2.0	2.8	3.0	3.2	3.5	3.9	4.0	3.7	3.1	3.6
Compositional Effects +														
Bonuses,etc		-2.2	1.1	2.1	0.3	-1.5	0.4	0.5	0.6	0.4	0.4	0.4	0.4	0.5
AWOTE (b)	100%	0.7	3.5	4.3	2.3	1.3	3.4	3.7	4.1	4.3	4.4	4.0	3.5	4.1
						Source:	BIS Oxf	ord Eco	nomics.	Haver A	nalvtics.	Departr	nent of Er	nplovment

### Table 8. Wages Growth by Workforce segment by Pay Setting Method Electricity, Gas, Water & Waste Services

(a) Ordinary time hourly rates of pay for full-time adults.

(b) Average Weekly Ordinary Time Earnings for Full-time Adults (excludes overtime but includes bonuses).

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

Overall, in terms of underlying wages growth in the utilities sector for total Australia — expressed in wage price index (WPI) terms — BIS Oxford Economics is forecasting an average of 3.6% per annum (0.3 percentage points higher than the national all Industries WPI average of 3.3% per annum) over the five years to FY25. BIS Oxford Economics expects total wage costs for the Australian Electricity, Gas, Water and Waste Services (EGWWS or Utilities) sector — expressed in Average Weekly Ordinary Time Earnings (AWOTE) — will average 4.1% per annum over the five years to FY25, 0.2% higher than the national All Industries AWOTE average of 3.9% per annum over the same five-year period (see Table 7 and Summary Table 1.1).

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.

### Total EGWWS wages growth understates wages growth in the Electricity sub-sector.

Related to the above point, we also believe the overall wage growth forecasts for the total EGWWS sector (presented in the accompanying tables) will understate wages growth in the electricity sub-sector, particularly as the labour market tightens for workers with higher skills. Independent studies have shown that the electricity and gas sub-sectors have a larger number of specialised roles, such as electrical engineers, structural engineers, electricians and gas fitters – who have skills that are transferable across other industries such as mining, construction and manufacturing, and are often in high demand.

On the other hand, the water supply, sewerage and drainage services and waste collection, treatment and disposal services sub-sectors have a higher proportion of non-specialised occupations with lower skill levels, e.g. truck



drivers, forklift drivers (Source: Victorian Department of Education and Early Childhood Development, Victorian Electricity and Gas Industry Skills & Training Needs 2013; Victorian Waste and Waste Services Skills & Training Needs 2013. May 2014). With the supply of lower skilled workers growing relatively quickly, wage increases for this group are subdued compared to higher skilled workers.

This is supported by Industry wage data for 2016/17 from the ABS, which shows that average wage levels in the electricity sub-sector are over 50% higher than employees in the waste sub-sector, and 40% higher than those in the water and sewerage sub-sector. In effect, the overall EGWWS average wage level is dragged down by the water and (particularly) waste sub-sectors. Therefore, it is likely that future labour escalation rates for electricity and gas workers will exceed those of other workers in the overall EGWWS sector.

### EGWWS sector has high levels of productivity, compared to the national average, which underpins higher wages.

The EGWWS sector has one of the highest levels of sectoral productivity – as measured by real Gross Value Added (GVA) per employed person – among the 18 industry sectors, with only Mining and Finance & Insurance Services having higher productivity. Utilities' productivity is more than double the national average according to ABS data for Australia and 2.7 times average state productivity levels in South Australia (see figure 10). High productivity levels and commensurate skill levels are the key reasons why wage levels are much higher in the utilities sector than most other industries (in terms of average weekly earnings measures – see table 7).

However, over the past 18 years, the growth in productivity in the sector has not been a driver of higher wages growth in the utilities sector. Productivity suffered a steep decline over 2001 to 2014 due to a combination of strong employment growth (mainly due to rising investment, as previously discussed) and weak growth in GVA, both in Australia and South Australia (see figures 7 and 8). Meanwhile, utilities wages growth was relatively strong over this same period (see table7). In effect, there is no clear relationship between wages growth and the traditional productivity measures (i.e. GVA/Employment) in the utilities sector. Low productivity is set to continue in part because GVA (output) growth is expected to remain low, with low output a function of low demand caused both by high prices and energy-saving (and water-saving) measures. However, employment levels are expected to remain relatively stable due to the need to maintain a skilled workforce to ensure reliability and undertake capital works to cater for population and economic growth and for capital replacement.

#### 4.1.1 Outlook for utilities wages growth in South Australia

The ABS do 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 2016 only). These three states collectively account for 73% of total Australian utilities employment, with Western Australia accounting for 13.5%, and South Australia for 7.3%. 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 recent differences in outcomes in collective bargaining in South Australia compared to the national average for the utilities sector.



Over FY16 and FY17, overall WPI growth in the EGWWS sector in South Australia is estimated to have been slightly lower than the national EGWWS increase. However, we estimate it was on par with the national EGWWS increase in FY18, although the national average was dragged down by a surprising low outcome in NSW, the largest state employer (see figure 11).

### Figure 11. Electricity, Gas, Water and Waste Services Wage Price Index, Australia, New South Wales, Victoria and Queensland



#### Year Ended June

Source: BIS Oxford Economics, ABS data

Wages in the South Australia utilities sector are expected to grow in line with the national utilities sector average over SA Power Networks' upcoming regulatory period (see table 10). Over the next four years, wage increases are again expected to be slightly lower than the national average – due to relative weaker utilities construction. South Australian EGWWS WPI growth is expected to rise from recent lows, and pick up to 2.9% and 3% (in nominal terms) over FY20 and FY21 respectively.

However, a marked pick-up in economic growth in the state from around FY22 is expected to see employment growth and the labour market tighten (see section 2.2). 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, submarines and army vehicles. 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 (fig. 14). 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 significantly over the 2021 to 2023 period, and subsequently remain elevated over the following two years to FY25.

WPI growth is forecast to average 3.5% per annum in nominal terms over the five years to FY25 inclusive (i.e. over the SA Power Networks next regulatory period; see table 10) – or 1.4% in real (inflation adjusted) terms (see Table 1 and Table 10).

#### **4.2 CONSTRUCTION WPI FORECASTS**

This section provides forecasts of SA Power Networks' contract or 'outsourced' labour escalation where there is a significant proportion of out-sourced labour which is contracted to perform construction-type activities in the capital expenditure budget. We would advise that the construction WPI would be more appropriate for that type of out-sourced labour. Given utility service providers outsourced labour is mostly supplied by firms in the construction industry, we proxy SA Power Networks' contract labour cost escalation by wages growth (as measured by the WPI) in the state's 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 to two years. Hence, our wage forecasts are based on BIS Oxford Economics 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. Forecasts of overall construction activity in Australia and South Australia are detailed in Table 2 and figure 14. The Construction sector wage forecasts for Australia are set out in Table 9, while the South Australian Construction WPI forecasts are set out in Table 10.

Similar to the utilities WPI data, the ABS does not provide WPI data for the Construction sector in South Australia, providing state Construction WPI data only for NSW, Victoria (until recently), Queensland and Western Australia. These four states collectively account for almost 90% of total Australian construction employment, with South Australia accounting for 5.6%. Historical data and forecasts of WPI for the Construction sector in South Australia therefore is based on national Construction WPI forecasts, as well as movements in the 'unknown residual' for the Construction wage price index and recent differences in outcomes in collective bargaining in South Australia compared to the national average for the Construction sector; plus relative movements in overall construction activity at the state level, compared to the national average.

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 of the latter half of last decade. While collective agreements in the sector have maintained their relative high increases over the past 4 years – between 4% 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. However, with the overall labour market beginning to tighten, and construction activity levels remaining strong, we expect wages growth in the sector to continue to improve, after picking up from their lows of 2016. Nevertheless, construction activity is set to again weaken over FY20 and FY21, and this will limit the improvement in construction wages growth over the next two years.

Construction wages are expected to accelerate over FY22 and FY23, driven by the recovery in residential building activity which is expected to rise out of its trough from FY22, while high levels of non-dwelling building and rising engineering construction will underpin higher wages due to strong labour demand and expected widespread skill shortages in the construction industry. Declines in construction activity over FY24 to FY25, coupled with a general weakening across overall labour markets will then cause construction wages growth to ease over FY25.

Our forecast is for the Australian Construction WPI to average 3.2% over the five-year period to 2024/25 at the national level, with South Australian construction wages growth to be slower at 3.1% – or 0.9% per annum on average in real (inflation adjusted) terms (see Table 1 and Table 10). While this is a marked improvement on the past five years, it is still well down on the 4.3% annual average (nominal) of the decade to 2011/12.



Voor Endod	Average	Weekly Ordir	nary Time Earnir	ngs ( <sup>1</sup> )	Wage Price Index ( <sup>2</sup> )							
	All Indus	tries	Constru	iction	All Indu	stries	Constru	uction				
June	\$	%CH	\$	%CH	Index	%CH	Index	%CH				
2000	765	3.2	722	-0.4	71.7	3.0	68.5	2.9				
2001	804	5.1	731	1.2	74.2	3.5	71.3	4.1				
2002	847	5.4	770	5.3	76.7	3.3	73.6	3.3				
2003	890	5.0	832	8.2	79.3	3.5	76.1	3.3				
2004	932	4.7	875	5.1	82.2	3.6	78.9	3.7				
2005	973	4.4	925	5.7	85.3	3.7	83.0	5.2				
2006	1 018	4.6	942	1.9	88.7	4.1	87.0	4.9				
2007	1 054	3.6	988	4.9	92.2	3.9	91.3	4.9				
2008	1 106	4.9	1,078	9.2	96.1	4.1	95.6	4.7				
2009	1 166	5.5	1,162	7.8	100.0	4.1	100.0	4.7				
2010	1 231	5.6	1,251	7.7	103.1	3.1	103.3	3.3				
2011	1 283	4.2	1,314	5.0	107.0	3.8	107.4	4.0				
2012	1 338	4.3	1,360	3.5	110.9	3.6	111.7	4.1				
2013	1 400	4.6	1,418	4.3	114.6	3.3	115.5	3.3				
2014	1 442	3.0	1,448	2.1	117.6	2.6	118.9	2.9				
2015	1 477	2.4	1,480	2.2	120.4	2.4	121.4	2.1				
2016	1 505	1.9	1,501	1.4	123.0	2.1	123.3	1.6				
2017	1 536	2.0	1,534	2.2	125.4	2.0	125.5	1.7				
2018	1 573	2.4	1,550	1.0	127.9	2.1	127.8	1.9				
2019	1 615	2.7	1,541	-0.6	130.9	2.3	130.2	1.9				
Forecasts												
2020	1 666	3.2	1,599	3.8	134.1	2.4	132.9	2.1				
2021	1 724	3.5	1,651	3.3	137.8	2.8	136.1	2.5				
2022	1 794	4.0	1,716	4.0	142.1	3.2	140.2	3.0				
2023	1 869	4.2	1,793	4.4	147.2	3.6	145.4	3.7				
2024	1 946	4.2	1,873	4.5	152.5	3.6	150.9	3.8				
2025	2 020	3.8	1,948	4.0	157.5	3.3	155.7	3.2				
			Compound	Annual Grow	th Rates (2)							
2000-2010	4.9		5.6		3.7		4.2					
2010-2019	3.1		2.3		2.7		2.6					
2019-2025	3.8		4.0		3.1		3.0					
2020-2025	3.9		4.0		3.3		3.2					
						Source	BIS Oxford Eco	nomics, ABS				

### Table 9. Total Australia (All Industries) and Construction Average Weekly Ordinary TimeEarnings and Wage Price Index (Year Average Growth)

(1) Earnings per person for full-time adults. Data is year ended

May (available only mid month of quarter).

(2) CAGR (Compound Annual Growth Rates) for 2020-2025

is the annual growth for 2020/21 to 2024/25 inclusive

i.e. next Revenue Determination period.



	EGWWS W	age Price	e Index	Construction	Wage P	rice Index	All Industries Wage Price Index			
Year Ended	South Aust	ralia (a)		Soι	uth Austra	alia (b)	So	outh Aus	tralia	
June	Nominal Index	%CH	Real growth %CH ( c)	Nominal Index	%CH	Real growth %CH ( c)	Nominal Index	%CH	Real growth %CH ( c)	
2009	100.0			100.0			100.0			
2010	104.8	4.8	2.5	102.7	2.7	0.4	102.8	2.8	0.5	
2011	109.0	4.0	0.8	106.2	3.4	0.3	106.4	3.5	0.4	
2012	112.8	3.5	1.2	110.4	3.9	1.6	110.0	3.4	1.1	
2013	117.8	4.5	2.2	113.6	2.9	0.6	113.7	3.3	1.0	
2014	121.9	3.5	0.8	116.3	2.4	-0.3	117.5	3.3	0.6	
2015	125.4	2.9	1.1	118.6	1.9	0.2	120.4	2.5	0.8	
2016	128.0	2.0	0.7	120.2	1.4	0.0	123.2	2.3	0.9	
2017	130.4	1.9	0.2	121.9	1.4	-0.3	125.8	2.2	0.4	
2018	133.1	2.0	0.1	123.8	1.6	-0.4	128.5	2.1	0.2	
2019	136.4	2.5	0.9	126.0	1.8	0.1	131.3	2.2	0.5	
Forecasts										
2020	140.3	2.9	1.1	128.6	2.0	0.3	134.4	2.4	0.6	
2021	144.5	3.0	1.1	131.4	2.2	0.3	138.1	2.7	0.8	
2022	149.4	3.4	1.3	135.0	2.8	0.7	142.4	3.1	1.0	
2023	155.0	3.8	1.4	139.8	3.6	1.3	147.5	3.6	1.3	
2024	161.1	3.9	1.6	145.0	3.7	1.4	153.0	3.7	1.4	
2025	166.9	3.7	1.3	149.4	3.1	0.8	157.9	3.2	0.9	
				Compound	d Annual	Growth Rates				
2009-2019	3.2		1.0	2.3		0.2	2.8		0.6	
2019-2025	3.4		1.3	2.9		0.8	3.1		1.0	
2020-2025	3.5		1.4	3.1		0.9	3.3		1.1	

### Table 10. South Australia: Electricity, Gas, Water & Waste Services, Construction and All Industries Wage Price Indices (Year Average Growth)

Source: BIS Oxford Economics, ABS

(a) historical data unavailable from ABS, so estimated from Australian WPI, less NSW,Victorian and Queensland data (only states that are published for EGWWS WPI), with the residual further adjusted for differences in movements in collective agreements for South Australia compared to Australia.

(b) historical WPI data unavailable for South Australia, so estimated from Australian Construction WPI, less NSW, Vic, Qld and WA Construction WPI (the only states published by ABS for Construction WPI),with adjustments for collective agreements and construction activity.

(c) Real price changes are calculated by deducting the inflation rate from nominal price changes.





Fig. 12. Australia – Utilities Employment, Output and Investment

Fig. 13. South Australia - Utilities Employment, Output & Investment







Fig. 14. Construction Activity in South Australia







### APPENDIX A: A Note on Different Wage Measures

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 BIS Shrapnel forecasts.

• 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 BIS Shrapnel 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 (ie 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.

For this reason, BIS Shrapnel prefers using AWOTE as the measure that best reflects the increase in wage cost changes (or unit labour costs ie net of productivity increases) for business and the public sector across the economy. On the other hand, wage price index can be used as a measure of underlying wage inflation in the economy. The WPI is preferred by the AER.



### APPENDIX B: STATEMENT OF COMPLIANCE WITH EXPERT WITNESS GUIDELINES

I have read the Guidelines for Expert Witnesses in Proceedings of the Federal Court of Australia and confirm that I have made all inquiries that I believe are desirable and appropriate and that no matters of significance that I regard as relevant have, to my knowledge, been withheld from the Court from this report.



### APPENDIX C: CURRICULUM VITAES OF KEY PERSONNEL

Richard Robinson – Senior Economist and Associate Director - Economics

Richard Robinson has been employed with BIS Oxford Economics since 1986.

Richard is the company's principal economic forecaster, being largely responsible for the short term economic forecasts presented at BIS Economics' half yearly conferences in March and September. He contributes forecasts and analysis to the regular subscription services, Australian Macro Service and Long Term Forecasts.

Richard regularly analyses and forecasts resources investment and civil engineering construction activity, and production of manufactures, consumer goods and commodities. In this work, he has developed considerable industry expertise in the construction, manufacturing, agriculture, services, commodity and resources sectors of the Australian and state economies.

Richard has also been involved in a wide range of consultancy and private client projects including formulating end-use sector demand models for forecasting product demand, project evaluation studies, cost-benefit analysis, assessments of individual property markets and analysing the consistency of escalators in contracts. Some other projects have included analysing and forecasting freight tonnages; a study of the repair and maintenance market; the preparation of economic arguments for the National Wage Case for a private industry group; regular analysis and detailed short and long term forecasts of economic variables in a number of overseas countries; and contributing discussion papers to CEDA (Committee for Economic Development of Australia).

Richard holds a Bachelor's Degree in Commerce with Honours from the University of Wollongong.

#### Nicholas Ng - Economist - Building and Construction

Nicholas has contributed to numerous studies and projects in infrastructure and mining & heavy industry. With a developed understanding of the trends and drivers impacting investment, production, and contracting, Nicholas been a project manager and key contributor to several editions of Mining in Australia, Engineering Construction in Australia, and Road Maintenance in Australia. His experience in the consulting realm includes an audit of capital projects for the Western Australian Department of Mines, cost escalation studies, and detailed investigations into resource investment and supply chain from ground to consumer. A track record of bespoke work has also exposed Nicholas to forecasts of domestic versus foreign engineering work, regional activity analysis, and state level coverage of residential, non-residential, and civil construction.



### **APPENDIX D: TERMS OF REFERENCE**

## SA Power Networks – Updating EGWWS and construction labour escalators for South Australia to 2024/25 – Terms of Reference

16 May 2017

#### 1 OVERVIEW

SA Power Networks seeks to engage BIS Oxford Economics to provide forecasts of the Electricity, Gas, Water and Waste Services (**EGWWS**) and Construction sector wages price index (**WPI**), for South Australia, to be included in our Regulatory Proposal submission for the 2020-25 regulatory control period (**RCP**).

#### 2 BACKGROUND AND CONTEXT

SA Power Networks seeks to engage BIS Oxford Economics to provide an expert opinion on the outlook for labour cost escalators relevant to electricity distribution networks in South Australia over an eight-year period from 2017/18 to 2024/25 inclusive.

The labour cost escalators are used by SA Power Networks for internal business planning and modelling. In recent determinations by the Australian Energy Regulator (**AER**), annual real price increases for labour have reflected the average of two independent sources. SA Power Networks will utilise the labour price growth forecasts provided by BIS Oxford Economic for the 2020-25 RCP and average them with the South Australian industry forecast by Deloitte Access Economics (DAE).

#### **3** SCOPE OF ENGAGEMENT

SA Power Networks wishes to engage BIS Oxford Economics to provide a forecast of the WPI for the EGWWS and Construction sectors for South Australia to 2024/25, considering the most recent economic and wages data.

#### 4 CONTACT DETAILS

If you have any questions or queries in relation to this RFP document, please contact Kelly Bernhardt from SA Power Networks via the contact details below:

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