BIS OXFORD ECONOMICS

LABOUR ESCALATION FORECASTS TO 2027/28

PREPARED BY BIS OXFORD ECONOMICS FOR TRANSGRID

FINAL REPORT

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BIS Oxford Economics

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November 2021

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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1. EXECUTIVE SUMMARY

BIS Oxford Economics was engaged by TransGrid to provide updated price forecasts of labour costs relevant to electricity transmission networks in New South Wales from 2020/21 to 2027/28. Forecasts of wages will be used by TransGrid to develop the real price changes over its upcoming regulatory period – from 1st July 2023 to 30th June 2028 (FY24 to FY28) - which, in turn, will be used by the business to construct its operating and capital expenditure forecasts.

For **electricity network related labour**, BIS Oxford Economics forecasts total wage costs for the New South Wales Electricity, Gas, Water and Waste Services (EGWWS or 'Utilities') sector — expressed in Wage Price Index (WPI) terms — will average 3.0% per annum over the seven-year period from FY22 to FY28, the same as the Australian EGWWS WPI average over the same period. For the five-year regulatory period from FY24 to FY28, the average increase in the NSW and Australian EGWWS WPI is forecast to be 3.2%. In real terms, the NSW EGWWS WPI is forecast to average 0.7% p.a. over the five years to FY28 (see Table 1.1 below).

Note that these forecasts include the impact of the proposed increases to the Superannuation Guarantee (SG) over the five years from FY22 to FY26. We anticipate that the Australian EGWWS WPI will be, on average, -0.13% lower in each of those 5 years, than if the SG increases did not proceed. RBA research shows that employees tend to receive lower wages due to the imposition of a SG increase. In effect some of the employees' wage increase (which they would have received in the absence of the SG increase) is replaced with the extra superannuation contribution. This means that although the 'statutory' incidence of the higher superannuation contributions are borne by employers, over time a proportion of these higher SG costs are passed from employers to employees via lower wage growth. However, given the SGC is in effect a labour 'on-cost', in terms of escalating wage costs over the regulatory period, **the full annual 0.5% for the SGC therefore needs to be added to the forecast increases in the WPI** for each relevant year. Section 4.4 includes a discussion of SG increases, how they apply to the WPI (and other wage measures) and the assumptions underpinning the impacts of the WPI forecasts in this document. Excluding the -0.13% annual impact of the SG increases, the forecast real growth in Australian EGWWS WPI would be 0.8% over the 5-year regulatory period to FY28, below the 1.0% p.a. averaged over the past decade.

During the current COVID-19 crisis, the EGWWS sector has fared much better most other sectors, in terms of wage increases over FY21. The Australian EGWWS WPI growth in the June quarter 2020 was 0.6% q/q in original terms (2.5% y/y), well above the All Industries WPI average of 0% q/q in original terms (1.8%y/y). This strong out-performance continued in the September and December quarters. However, the quarterly increases of 0.1% in each of the March and June quarters 2021 has seen annual growth in the EGWWS WPI slip below the All Industries average for only the second time in the past two decades. We believe this will be a short-lived aberration and that the EGWWS WPI will rebound strongly over the next year to again outpace the national average.

Over the forecast period, EGWWS WPI growth is expected to remain higher than the All Industries WPI average, with the Australian All Industries WPI forecast to average 2.8% over the seven years to FY28. This means that the Australian EGWWS WPI is expected to be 0.4% higher than the All Industries average. Note that the impact of the SG Increases on the All Industries WPI is assumed to be -0.3% in each of the five years to FY26, higher than the impact on EGWWS wages. Excluding the SG increase impacts, the difference vis-a-vis the EGWWS and All Industries WPI would be 0.3%, which is slightly below historical differences over the past decade.

Utilities wages are forecast to increase by more than the national average over the forecast period 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 subdued pace as the labour market tightens, especially from 2023 when the unemployment rate is expected to fall and remain below 4.5%.
- demand for skilled labour will pick up and strengthen with the high levels of utilities investment from FY22 to FY28, with overall utilities investment levels expected to remain elevated over the next 7 years. 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, such as occurred in the wake of the COVID-19 impacts. The EGWWS sector is not impacted in the same way due to its obligation to provide essential services and thus retain skilled labour.

Widespread wage freezes and very modest wage increases has seen both the Australian and NSW **All Industries WPI** growth weaken over FY21 to 1.5%, from 2.1% in FY20. As the economy and employment rebounds through FY22, growth in the All Industries WPI is also expected to exhibit a modest recovery, rising to 1.9%. Part of the rebound will be driven by deferred pay increases from 2020 and early 2021 and the ending of most pay freezes. The higher increase in the NMW – the Fair Work Commission awarded 2.5% effective July 2021 – will also underpin higher increases. Another key element which will add to wage pressures over FY22 and FY23 is the rapid tightening in the labour market that is now apparent. Employment at June 2021 was well above pre-COVID levels, with the unemployment rate at 4.9% and participation rates at record levels. Although employment fell back over August-October due to lockdowns, the end of the lockdowns and re-opening of the economy is expected to see employment rebound back to June 2021 levels by early 2022 and continue increasing. The cessation of international migration to Australia since March 2020 has seen growth in the working age population plummet to just 0.2% in the year to June 2021 - an increase of only 39,000, compared to over 330,000 persons in FY19 and in the year to March 2020. Growth in the labour force has been facilitated by a marked increase in the labour force participation rate to record levels. However, there is now little scope to raise the participation rate further, and, with the underemployment rate pushing lower and job vacancies well above pre-COVID levels, wage pressures are building.

As the economy continues to strengthen over FY23 to FY25, we expect to see further improvement in the labour market, with labour demand increasing and the unemployment rate falling below 4.5% by early 2023 and fall further during FY24 and FY25 (and possibly below 4%). We expect to see skill shortages manifest in many areas of the economy. The tightening labour market will see wage pressures increase, and the NSW and Australian All industries WPI is forecast to increase to 3.1% in FY26, before easing in FY28 due to the lagged effect of a softening in economic growth over FY26

and FY27 (see Table 1.1). Note that the forecasts of the All Industries WPI over the 5 years from FY22 to FY26 include the impact of the SG increase. We have assumed that the All Industries WPI is -0.3% lower in each of those 5 years, than if the SG Increase did not go ahead.

In particular, we expect to again witness the re-emergence of critical 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 3 years to FY24 and remain at elevated levels to the end of the decade. Meanwhile, there is similar strong growth coming through in in the Construction sector, with solid increases forecast across all segments of the overall construction sector (residential construction, non-residential building and civil engineering & infrastructure construction) over FY22 to FY25, leading to strong labour demand in that sector, particularly from 2024 when activity surpasses the 2018 levels.

Table 1.1 Summary – Labour Cost Escalation Forecasts: New South Wales & Australia - including Impact of Proposed Superannuation Guarantee Increases (financial years)

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

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	5 yr Avg (f)
	Actuals				Forecasts		Next Regulatory Period					
NOMINAL PRICE CHANGES												
1. Electricity Network-Related Labour												
EGWWS WPI - New South Wales (a)	**1.3**	**2.6**	**2.5**	**1.7**	**2.1**	**2.7**	**2.9**	**3.3**	**3.4**	**3.3**	**3.1**	**3.21**
EGWWS WPI - Australia (b)	2.0	2.8	2.7	1.9	2 0	2.7	2.9	3.3	3.4	3.3	3.2	3.22
2. Contractor Labour Cost Escalation												
Construction WPI - New South Wales (c)	**2.6**	**2.0**	**1.5**	**2.0**	**2.2**	**2.2**	**2.8**	**3.2**	**3.4**	**3.2**	**2.8**	**3.1**
Construction WPI - Australia (b)	1.9	1.9	1.5	1.3	2 0	2.2	2.7	3.1	3.4	3.3	2.9	3.1
3. All Industries Wages												
All Industries WPI - New South Wales	**2.1**	**2.3**	**2.1**	**1.5**	**1.9**	**2.1**	**2.4**	**2.8**	**3.1**	**3.1**	**2.8**	**2.8**
All Industries WPI - Australia (d)	2.1	2.3	2.1	1.5	1 9	2.2	2.5	2.8	3.1	3.1	2.9	2 9
All Industries AWOTE - Australia (d)	2.4	2.7	3.9	2.7	2.4	2.5	2.8	3.1	3.4	3.5	3.2	3 2
Consumer Price Index (headline) (e)	1.9	1.6	1.3	1.6	3 0	2.3	2.5	2.5	2.5	2.5	2.5	2 5
REAL PRICE CHANGES (g)												
1. Electricity Network-Related Labour												
EGWWS WPI - New South Wales (a)	**-0.6**	**0.9**	**1.2**	**0.1**	**-1.0**	**0.4**	**0.5**	**0.8**	**0.9**	**0.8**	**0.6**	**0.7**
EGWWS WPI - Australia (b)	0.0	1.1	1.3	0.3	-1.1	0.3	0.5	0.8	0.9	0.8	0.7	0.7
2. Contractor Labour Cost Escalation												
Construction WPI - New South Wales (c)	**0.7**	**0.3**	**0.2**	**0.4**	**-0.8**	**-0.1**	**0.3**	**0.7**	**0.9**	**0.7**	**0.3**	**0.6**
Construction WPI - Australia (b)	-0.1	0.2	0.2	-0.3	-1 0	-0.1	0.3	0.6	0.9	0.8	0.4	0 6
3. All Industries Wages												
All Industries WPI - New South Wales	**0.2**	**0.7**	**0.7**	**-0.1**	**-1.1**	**-0.2**	**-0.1**	**0.3**	**0.6**	**0.6**	**0.3**	**0.3**
All Industries WPI - Australia (d)	0.1	0.7	0.8	-0.1	-1.1	-0.2	0.0	0.3	0.6	0.6	0.4	0.4
All Industries AWOTE - Australia (d)	0.5	1.0	2.5	1.1	-0.7	0.2	0.3	0.6	0.9	1.0	0.7	0.7

Sources: BIS Oxford Economics, ABS

(a) Electricity, Gas, Water and Waste Services (EGWWS) Wage Price Index (WPI) for New South Wales.
(b) Australian sector wage forecasts provided for comparison, including Average Weekly Ordinary Time Earnings (AWOTE).
(c) Construction Sector Wage Price Index (WPI) for New South Wales.
(d) Australian All Industries AWOTE and WPI provided for comparison.
(e) Inflation forecasts are RBA forecasts for the next 2 years from latest 'Statement of Monetary Policy'. Beyond that, inflation forecasts are based on a glide-path to the mid-point of RBA inflation target (2.5%) by year 5. The overall forecasts are then calculated as a geometric mean of the 'official' RBA inflation forecasts over the next 5 years or to the end of the regulatory period, with years 3,4 and 5 CPI equal to the calculated 5-year geometric mean. This methodology is the position adopted by the AER in its Final position paper "Regulatory treatment of inflation" of December 2020.
(f) Average Annual Growth Rate for 2023/24 to 2027/8 inclusive, ie for next regulatory period.
(g) Real price changes are calculated by deducting the inflation rate from nominal price changes.

Employers are already reporting an increasing shortage of technicians and trade workers, and employees with STEM skills. These are essential workers in the utilities sector. A key problem is that the TAFE (technical and further education) systems across the country have simply not been training enough workers. BIS Oxford Economics research shows this is being compounded by new graduates in the trades stream in particular not increasing fast enough to replace retiring workers, with some numbers actually falling. Despite government announcements that they are moving to address the

TAFE system, it is unlikely that these issues will be addressed within the next 5 years. Added to this is that skilled immigration has been suspended. When it does return, it is likely to be a slow ramp-up, meaning that the skill shortages will persist and won't be easily or quickly solved by migration

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 FY23 to FY26 period.

Wages in the New South Wales utilities sector are expected to move in line with the national utilities sector average over Transgrid's upcoming regulatory period (see table 1.1). We expect NSW utilities WPI growth to track just above the national average for the next two years. From FY24 we are forecasting the NSW utilities WPI to virtually match the national average. There will be strong wage pressures in NSW, particularly from high and increasing levels of construction activity, while the NSW utilities sector will face competition for key skilled workers from interstate utilities, construction and mining sectors. With strong competition for similarly skilled labour from the mining and construction industries, firms in the NSW utilities sector will need to raise wages to attract and retain workers. This is expected to be accompanied by strong increases in utilities related construction in the state, mining-related investment and construction activity generally. The overall strengthening in the labour market, and particularly in the Construction and Mining sectors – which are key competitors to the utilities sector in terms of 'similarly' skilled workers - is expected to result in utilities WPI growth accelerating over the 2023 to 2026 period, and subsequently remain elevated over FY27.

Given service providers outsourced labour is mostly supplied by firms in the construction industry, we proxy TransGrid's **external labour cost escalation** by wages growth (as measured by the WPI) in the NSW construction industry. Our research has shown that construction activity (ie work done in the sector) normally has a strong influence on construction wages, although changes in wages tend to lag construction (in work done terms) by around one year.

Our forecast is for the NSW and Australian **Construction WPI** to average 3.1% over the five-year period to FY28 at the national level – or 0.7% per annum on average in real (inflation-adjusted) terms (see Table 1.1). While this is a marked improvement on the past five years, it is still well down on the 4.3% annual national average (nominal terms) of the decade to 2011/12. Note that these wage forecasts for the Construction WPI include the impacts of the SG increase over FY22 to FY26 (i.e. covering the first three years of TransGrid's next regulatory period). In the construction industry sector, we estimate the impacts will be -0.3% for each year of the SG increase.

The Australian Construction WPI growth in FY21 (in year average terms) was 1.3%, down from 1.5% in FY20. In NSW, the Construction WPI has staged a very strong recovery since declining -0.4% in the June quarter 2020, with FY21 rising to 2.0%, 0.7% above the national Construction WPI. Much higher enterprise bargaining outcomes in NSW have contributed to this out-performance. Australian and NSW construction wages are expected to pick up over FY22 and FY23 and strengthen appreciably over FY24 to FY26, particularly as construction activity levels surpass the previous highs of FY18 and FY13 (in 2024) and skills shortages begin to manifest. The increases in construction activity from FY22 will be driven by higher levels of residential and non-dwelling building and particularly by strong increases in engineering construction, boosted by a new wave of mining investment and a plethora of publicly funded transport infrastructure projects (particularly in NSW and the other eastern states). The stronger activity will underpin higher wages due to strong labour demand and expected widespread skill shortages in the construction industry.

2. INTRODUCTION

BIS Oxford Economics was engaged by TransGrid to provide updated price forecasts of labour and other input costs relevant to electricity transmission networks in New South Wales from 2020/21 to 2027/28. Forecasts of wages will be used by TransGrid to develop the real price changes over its upcoming regulatory period – from July 1 2023 to June 30 2028 (FY24 to FY28) - which, in turn, will be used by the business to construct its operating and capital expenditure forecasts. Over the next regulatory period forecasts of both nominal and real price growth of the relevant inputs are provided. The forecasts in this report were finalised in early November 2021.

The Australian Bureau of Statistics is the primary data source for the consumer price index, wages, employment, real gross value added and investment (including engineering construction) data, and for a range of other economic variables. The data used in the projections is the latest available as at early November 2021 and includes the September quarter 2021 Consumer Price Index, and the June quarter 2021 Wage Price Index and National Accounts data releases. Other inflation and interest rate data were sourced from the Reserve Bank of Australia.

Forecasts of the economic variables in this report were mostly sourced from BIS Oxford Economics reports, including *Australian Macro Service*, *Long Term Forecasts: 2021 – 2035, Engineering Construction in Australia 2021-2036* and *Building in Australia 2021-2036*, along with other unpublished forecasts and from BIS Oxford Economics internal research and modelling.

The previous Summary section presents an overview of the outlook for the labour and other input costs including numerical forecasts which are presented in the summary table.

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

Section 4 discusses BIS Oxford Economics' national wage and CPI projections and discusses the use of the Reserve Bank of Australia forecasts of the Consumer Price Index (CPI) for the deflation of nominal wages. Forecasts of the All Industries Wage Price Index (WPI) are also provided in chapter 3. Not that most of the references to historical data and forecasts of wages in Sections 4 and 5 are in nominal terms unless specifically stated that the data/forecasts are in real (inflation-adjusted) terms.

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

Appendices include an explanation of different wage measures.

3. MACROECONOMIC OUTLOOK

3.1 AUSTRALIA MACROECONOMIC FORECASTS

Australian economy during and post-COVID recession performed better than expected

The Australian economy suffered a steep downturn in the first half of calendar 2020, with the -7.3% cumulative decline in real GDP over the March and June quarters pushing GDP in FY20 into a -0.2% recession. However, the bounceback in the September and December quarters was stronger-than-expected, despite extended lockdowns in some states (mainly Victoria) and prolonged border closures. Further healthy growth in the March and June 2021 quarters of 1.9% and 0.7% respectively, saw GDP surpass the pre-pandemic levels in the March quarter 2021. Overall, year-average growth in FY21 was 1.4%.

Household consumption increased sharply in Q2 (June quarter), with spending on services outpacing goods. Transport services consumption grew particularly sharply, reflecting pent-up demand for tourism services. Private business investment was broadly flat, with strength in machinery and equipment spending countered by weakness in buildings and structures. Public demand made a strong contribution, boosted by maintenance activity and spending on the vaccine rollout. Net exports were a drag due to disruptions to mining shipments and robust import growth.

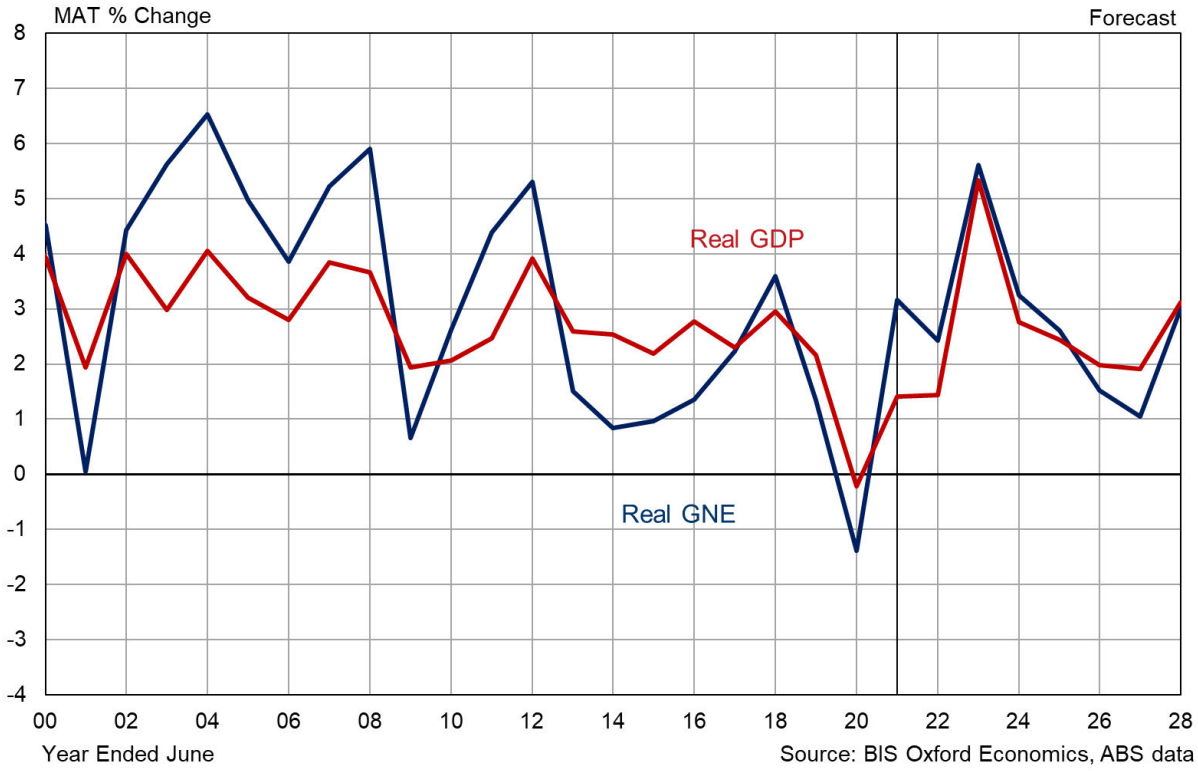
However, conditions have deteriorated markedly since the end of June, with the lockdowns in New South Wales, Victoria, and the ACT set to cause a sharp contraction in output in Q3, due to the sharp fall in private consumption expenditure. The reopening of the Sydney economy has gone smoothly so far, with the state government fast-tracking the return process for residents based overseas. The easing of restrictions in Victoria and the ACT will also provide a fillip to the run of data in the coming months. Nevertheless, travel restrictions are far from uniform across the country, with some state borders to remain closed into 2022, somewhat limiting the scope for recovery in services consumption and the tourism sector. Nevertheless, the continued rapid rollout of the vaccine and relatively smooth reopening of locked down regions has removed some downside risk from the outlook. The recovery appears to be progressing well, and we expect the economy will return to growth in Q4, but GDP will end 2021 well below its Q2 level. We now forecast GDP growth of 1.4% in FY22, with a strong rebound of 5.3% in FY23 as restrictions are eased and largely abandoned.

House prices have risen sharply across the country, spurred by very low interest rates, government support and a shift in buyer preferences. The rise in prices was accompanied by a rebound in the volume of house sales over H1, and the shift in preferences has resulted in detached houses and regional areas leading other segments of the market. The HomeBuilder program has bolstered the pipeline of upcoming work for both new dwellings and renovation activity, with this strength set to continue in the near term. The boost to demand has driven a sharp cycle in approvals, which is now abating. This activity has started to come through as dwelling investment, which increased by a further 1.7% q/q in Q2. The temporary shutdown of the construction industry in Sydney and Melbourne in July and ongoing capacity constraints and cost pressures will result in some projects being delayed. Nevertheless, the pipeline of work to be done is still significant.

Since the start of the pandemic, businesses have been given strong incentives to increase spending on machinery & equipment by the federal government. The strong run of spending continued in Q2, with investment up another 2.4% q/q. Despite the gloomy outlook due to lockdowns, the latest capex survey points to ongoing strength in this component. The outlook for buildings and structures investment is more subdued, although forward looking indicators of activity appear to have troughed in the sectors most impacted by the pandemic and have improved a little elsewhere. Nevertheless, spending fell in Q2 and will be disrupted by the construction industry shutdown in Sydney in Q3. We

expect the strength in business investment has further to run, with these incentives in place until June 2023. The mining sector has remained relatively insulated from the pandemic shock, although there were deferrals of oil and LNG investments. Mining investment picked over FY21 and will continue to rise and remain strong well into the middle of the decade as some of the deferred investments are started. Commodity prices have rebounded from their lows of last year and with prices for a number of commodities to remain at healthy levels over the medium term, we expect further investments to get underway. Overall, new business investment is expected to grow by 8.7% in FY22 and a further 7% in FY23. The recovery in business investment will not only drive near term demand but will also increase the economy's productive capacity in the long run.

Figure 3.1 Australia Key Indicators



Government and RBA policies have supported household income, employment and business investment

Fiscal policy remains very supportive, and infrastructure spending is set to increase in the near term. Projects in planning stages have been brought forward (including accelerating the planning application procedure), and direct grants for individuals to put towards dwelling construction or major alterations and additions (the HomeBuilder program) have spurred activity. Monetary policy settings remain extremely accommodative, but there is little more the RBA can do to stimulate demand in the current environment. The RBA remains committed to providing ample liquidity to the financial system, and credibly committing to lose monetary policy for quite some time – this will give businesses the confidence to invest as the outlook improves.

Public demand made a strong contribution to growth in Q2. Current consumption picked up in Q2, following a surprise contraction in Q1. The vaccine rollout will continue to support spending in the coming months, while greater commitments to aged care and mental health funding will support the profile over the medium term. Government investment grew particularly sharply (+7.4% q/q) in Q2, as several maintenance and 'shovel-ready' projects were fast tracked in response to the onset of the pandemic. We expect the upswing has further to run, with transport and other infrastructure projects

and the 5G rollout set to drive growth in the medium term. Nevertheless, we expect the composition of GDP growth will swing toward the private sector in the coming years, reversing the trend of the past six years.

In terms of household income, the lift in social security payments and other government stimulus payments to households helped prevent very large falls in household income over FY21 and during the current lockdowns, while lower interest payments and lower income taxes cushioned household disposable income to some extent over FY20 and FY21. Indeed, growth in household disposable income was quite strong in FY20 and again in FY21. Beyond the current set-back and expected rebound in FY23, household disposable income will experience slow growth during the subsequent recovery as wage rises will lag the recovery, as taxes rise and as interest payments on higher household debt rise in the absence of further interest rate cuts.

The labour market recovery exceeded expectations, with employment above its pre-pandemic level since March 2021. The unemployment rate made surprisingly fast progress toward its pre-crisis level and has been below 5% since June 2021, with the rate of underemployment as at mid-2021 down its lowest level since mid-2014. But the lockdowns and other restrictions have weighed on conditions. National employment fell by each of August, September and October by a collective 333,700, which saw the unemployment rate move back over 5% in October. The structure of support payments is such that the hit to employment in locked-down cities will likely be larger than in 2020 when JobKeeper was in place. Coupled with the waiving of job search requirements for JobSeeker recipients, this will translate to a sharp fall in the participation rate as displaced workers leave the labour force rather than register as unemployed, which in turn will ameliorate any increase in the unemployment rate. However, once the lockdowns end and restrictions are gradually relaxed, we expect progress toward a tighter labour market will regain pace over 2022. Given the participation rate had gone beyond its pre-COVID level, we expect the pace of employment growth will moderate beyond the end of 2022.

Global Economic Outlook has improved

Oxford Economic' global GDP growth forecast for calendar 2021 has been nudged lower to 5.8% and 4.7% in 2022, because of Delta-related disruption and the mounting evidence that supply-chain bottlenecks are likely to constrain activity for several more months. The sharp drop in the services sub-index as well as in consumer sentiment in the advanced economies probably reflects the latest Delta-driven Covid wave and the realisation that the pandemic is not yet over. Although we have become more cautious about the Q3 consumer outlook, particularly in the US, we continue to expect the Delta wave to delay rather than undermine the recovery. This primarily reflects the fact that higher immunity levels now lessen the risk of major lockdowns.

We have also lowered our assessment of the growth outlook for the industrial sector. Despite buoyant industrial surveys and booming order books, global industrial production has broadly flatlined in H1 due to well-flagged supply chain and transportation issues. With firms continuing to report lower-than-desired inventories and growing problems in sourcing inputs, any upturn in industrial activity in H2 is likely to be modest. Parts of Asia may benefit from a Q4 upturn if restrictions to combat the spread of Covid are loosened, but we expect a less front-loaded and a more gradual increase in industrial activity from here. The Delta variant continues to take a toll on activity and sentiment in many Emerging Markets. Despite headwinds, we expect growth momentum to pick up in Q4, despite headwinds from recurrent virus outbreaks and global supply disruptions. We forecast Emerging Markets' GDP will grow 6.8% this year, due to a weaker-than-expected pick-up in China.

We have recently downgraded our 2021 growth forecast for China to 8%. Growth was weak in Q3, dragged down by Covid outbreaks and a slowdown in the real estate sector, with an additional hit from electricity shortages and production cuts in September. We expect the electricity shortages to

ease later in Q4, but the ongoing downturn in the real estate sector and COVID caution will weigh on the consumption recovery. Elsewhere, waning of the latest COVID wave should allow easing of restrictions and faster recovery, particularly if vaccinations pick up pace. But many countries will continue to use containment measures to control outbreaks in the face of fast-spreading variants. Recent PMI readings have shown some deceleration in activity, particularly in Asia, with shipping delays and supply shortages weighing on export momentum. The outlook should improve as easing of restrictions buoys sentiment and domestic demand. The recovery in services activity is set to lag, however, as variant concerns constrain the reopening of international travel. Inflationary pressures keep building due to higher commodity prices, supply shortages and weak currencies.

The US economy cooled significantly around mid year due to the rapidly spreading Delta variant, the diminishing fiscal impulse and lingering capital and labour supply constraints. However, the clouds over the US economy are now dissipating as one of the two key constraints on activity is abating. An improving health situation amid vaccination progress has led to rising mobility, reinvigorated demand for services, and stronger hiring. While labour and capital supply constraints will linger well into next year, we have raised our GDP growth forecasts to 5.5% in 2021 and to 4.5% in 2022. The $1.9trillion American Rescue Plan will help lift GDP growth by over 3ppts in 2021. A mini boom is underway, propelled by rapid vaccine diffusion and fiscal expansion. Expanded vaccinations will allow for a wider reopening of the economy, sparking the strongest economic performance in nearly 40 years. The risks to growth in 2022 are tilted to the upside with a version of Biden's $2.3tn American Jobs Plan likely to pass Congress later this year.

The anticipated strong performance of the US economy will see a broad-based appreciation of the USD in the near-term. The **Australian dollar** traded in a very narrow range around US$0.78 for most of the first half of 2021. But concerns over the near-term outlook, the pick-up in growth in the US and the correction in iron ore prices have seen the AUD take a step down to around US$0.74 over the past few months. We expect the currency will be broadly steady before appreciating alongside monetary tightening in Australia in the medium term, to near US$0.80 by mid-decade, before easing to the long-term average of US$0.75.

Beyond the near-term disruptions, we expect global growth will return to its trend pace of around 3% by 2023, and gradually slow over the long term as resident population growth eases. Australia's trading partner growth (weighted by export proportions) is forecast to grow at a faster pace over the next 5-20 years (between 0.5 to 1% higher), due to the high weights of China, East Asia and India (all of which are expected to outpace the average pace of global growth) in Australia's export mix.

GDP to lift in FY23 and remain buoyant to FY25

Australian domestic demand increased by 2.5% in FY21, with the huge bounce-back in both farm and non-farm stocks pushing the growth in Gross National Expenditure (GNE) to 3.2%. However, with net exports detracting from growth, GDP rose 1.4%. Although the recent lockdowns will detract from domestic demand in the second half of 2021, but we expect a strong bounce-back over the first half of 2022 and into FY23, led by private consumption expenditure as households spend heavily on services, funded by the increased savings accumulated over the past year or so and the 'return to normalisation' due the widespread dissemination of a vaccines. Australian GNE is forecast to increase 2.3% in FY22 and 5.6% in FY23, with GDP forecast to increase by 1.4% in FY22 and 5.3% in FY23 as domestic demand strengthens and net exports provide less of a drag.

Housing and business investment are expected to ease over FY24 and FY25 as the government incentives finish or are reduced. However, we expect further moderate growth in business investment in FY24 and FY25 as deferred investment is undertaken, although some sectors, such as hotel construction and other tourism-related investment, will take longer to recover. Meanwhile, public investment is expected to peak in FY24, and remain at elevated levels in FY25, as a large pipeline of

transport infrastructure and social and institutional buildings projects come through. Meanwhile, government recurrent expenditure is expected to weaken sharply.

With the initial rebound from the pandemic likely to be over by late 2022, the pace of growth will naturally slow. Overall, we are forecasting GNE to ease to 3.2% in FY24 and 2.6% in FY25. GDP is forecast to ease to 2.8% in FY24 and 2.4% in FY25. Net exports will detract from growth over FY23 to FY25, as a sharp lift in imports (particularly service debits – mainly outbound tourism) outpaces solid increases in exports. Over the four years to FY25, domestic demand growth is forecast to average 3.5% per annum, while GDP is forecast to average 3% p.a.

Table 3.1 Australia – Key Economic Indicators, Financial Years

Year Ended June							Forecasts						
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Total New Private Investment (+)	**-5.3**	**-2.0**	**3.8**	**-2.9**	**-3.6**	**1.9**	**8.2**	**6.3**	**4.6**	**3.3**	**-1.3**	**-3.0**	**4.0**
New Public Investment (+)	**8.1**	**8.6**	**11.4**	**4.7**	**2.5**	**6.1**	**9.5**	**8.4**	**2.8**	**-1.4**	**-3.6**	**-3.0**	**0.4**
Gross National Expenditure (GNE)	**1.4**	**2.2**	**3.6**	**1.3**	**-1.4**	**3.2**	**2.4**	**5.6**	**3.2**	**2.6**	**1.5**	**1.0**	**3.0**
GDP	**2.8**	**2.3**	**2.9**	**2.2**	**-0.2**	**1.4**	**1.4**	**5.3**	**2.8**	**2.4**	**2.0**	**1.9**	**3.1**
Inflation and Wages													
CPI (Yr Avg) - RBA forecasts (*)	1.4	1.7	1.9	1.6	1.3	1.6	3.0	2.3	2.5	2.5	2.5	2.5	2.5
Wage Price Index (Yr Avg)(**)	2.1	2.0	2.1	2.3	2.1	1.5	1.9	2.2	2.5	2.8	3.1	3.1	2.9
Average Weekly Earnings (Yr Avg)(^)	1.9	2.0	2.4	2.7	3.9	2.7	2.4	2.5	2.8	3.1	3.4	3.5	3.3
Employment													
– Employment Grow h (Yr Avg)	2.3	1.5	3.0	2.4	0.5	0.6	1.8	2.5	2.3	2.1	1.8	1.0	1.4
– Employment Grow h (May/May)	1.9	2.1	2.6	2.8	-5.6	8.3	0.8	2.2	2.3	2.0	1.4	1.0	1.8
– Unemployment Rate (May) (%)	5.7	5.5	5.4	5.2	7.0	5.1	4.7	4.3	4.2	4.2	4.5	4.8	4.5
Labour Productivity Growth													
– Total	0.5	0.8	-0.1	-0.2	-0.7	0.8	-0.4	2.8	0.5	0.3	0.2	0.9	1.7
– Non-farm	0.7	0.6	0.1	0.1	-0.5	0.3	-0.5	3.1	0.4	0.3	0.3	0.9	1.7

Source: BIS Oxford Economics, ABS and RBA

+Expenditure on new assets (or construction work done). Excludes sales (or purchases) of second hand assets.
*Headline CPI forecasts based on Reserve Bank of Australia's forecasts to June 2023 quarter. Beyond this, we've used the arithmetic mean he next 2 years and the the mid-point of he Reserve Bank's 2 to 3 per cent inflation target range after 2023.
** Based on Ordinary Time Hourly Rates of Pay Excluding Bonuses. Includes impact of Superannua ion Guarantee increases.
^ Average Weekly Ordinary Time Earnings for Full-Time Adult Persons. Includes impact of Superannua ion Guarantee increases.

Inflation rising, but interest rates to remain low over the next 2 years, before gradually rising

Consumer price inflation was steady at 0.8% q/q in the September quarter 2021, driven by dwelling purchase costs and fuel price inflation. Headline inflation (3% y/y) remains a good deal stronger than underlying inflation (2.1% y/y), boosted by fuel prices, but this divergence is expected to narrow in coming quarters. Transitory components continue to drive headline inflation, but with upward price pressure emerging from supply chain disruption, there are signs inflationary pressures are broadening. Overall wage growth remains benign for now, but as the economy reopens and spare capacity is absorbed, wage pressures will mount. Our forecast is for this to be a gradual process through 2022, but the upside risks to this outlook have increased. The stronger-than-expected inflation data appears to have accelerated the RBA's timetable for raising rates. Governor Lowe has dropped his guidance that rates will be on hold until 2024, but the Bank is still signalling the expect rates will be on hold well into 2023.

The cash rate forecast to remain at or below 0.25% until the second half of 2023, before rising to 1.25% by late 2025 as wages and CPI inflation rise back toward historical averages, and the unemployment rate falls below 4.5% and possibly below 4.0%. Meanwhile, the 1% rise in the cash

rate in Australia means the benchmark housing variable rate will rise to 5.5% by late 2025, which will be enough to slow consumer spending and impact housing and business investment over FY26 and FY27. With government capital spending falling at that time and recurrent spending still constrained, the end result will see annual GDP growth easing to around 2% over those two years.

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. But as consumers and businesses re-adjust to the 'normalcy' of higher interest rates – although at much lower levels than the 2000s and 2010s – investment and consumer spending will return to long term trend (or potential) rates of growth over the second half of the 2020s with an initial rebound in GDP growth to 3.1% in FY28, then easing.

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

3.2 OUTLOOK FOR THE NEW SOUTH WALES

In New South Wales, State Final Demand (SFD) declined -2.0% in FY20, much worse than the national average of -1.0%. Meanwhile, Gross State Product (GSP) fell -0.7% - also worse than the national average where GDP declined -0.2%. NSW suffered the largest contraction in output in the initial COVID-19 shock NSW, suffering among the worst of the impacts from the COVID-19 epidemic. A key reason was that the service sectors in NSW comprised a larger share of GSP than most other states and the service sectors will suffer the largest impacts, with sectors related to travel, tourism, entertainment and real estate particularly exposed to the social distancing restrictions. In particular, NSW accounts for almost 43% of total Australian international services exports and was thus disproportionately affected by the slump in international tourism and lower education exports. It also suffered from the sharp cut-backs in interstate trade and travel, as it runs a strong interstate trade surplus with the other states. In addition, mining production and investment have been less affected than other sectors, which sees WA and NT relatively less affected.

However, over FY21, NSW SFD increased 2.9%, while and GSP growth was estimated to be 2.4% – both above the national equivalents. Momentum in the NSW economy was building over the first half of 2021, with state final demand (SFD) increasing by a further 2.2% q/q in Q2 (against 1.7% q/q nationally). Both the private and public sectors made steady contributions to growth, with household consumption increasing 2.1% q/q, and investment boosted by incentives for machinery & equipment spending and strong dwelling construction activity. But the outlook for the state has deteriorated markedly since then, with Sydney spending the duration of Q3 under strict lockdown and regional areas also enduring intermittent restrictions.

In response to the lockdowns and aided by a diversion of supply to the state, the vaccine rollout has ramped up materially in NSW. The state has begun reopening now that 85% of the population aged over 16 have received their second dose. This has improved the outlook for Q4, but trading restrictions that limit capacity will remain in place into 2022, which will make for a more subdued rebound in activity. Further, the state is highly exposed to COVID-19 restrictions around international travel, with the loss of international tourists, students and migrants also set to weigh on state output into FY22.

Changes to the HomeBuilder program in late 2020 helped drive a strong uptick in approvals, which is now translating into investment. The shutdown of the construction sector in July will cause a sharp fall in output in Q3, but strong underlying demand for housing remains. We expect dwelling activity will

remain elevated beyond the life of the HomeBuilder program and into the medium term. Increased detached house construction work done (on the back of government stimulus measures such as homebuilder) is expected to offset further declines in attached dwelling work done in FY22 (+5.0% in total residential work done). With investors returning to the attached dwelling construction sub-sector, recovering population flows and strong levels of detached dwelling construction, total residential building work done is forecast to grow 15.5% in FY23 ($24.1bn), before falling back at an annual average growth rate of -2.7% in FY24 and FY25 in light of a weakening detached dwelling construction.

Non-residential building and construction will provide strong contributions to state economic growth over the next few years. With the onset of COVID-19 related headwinds, downturns in office, retail and accommodation were beginning to emerge, with a 3.1% decline in FY21 ($16.6bn) and an anticipated fall of 7.5% in FY22 ($15.3bn). Declining office and education building construction is expected to lead to a further decrease of 6.5% in total NRB work done in FY23 ($14.3bn). With a return to positive growth in the commercial and industrial sector, a modest growth of 2.1% is expected in NRB work done in FY24 ($14.6), followed by an increase of 2.6% in FY25 ($15.0bn).

Following three years of declining construction activity, engineering construction work done experienced a trough of $22.6bn in FY21 (-6.3%) due to decreasing levels of construction in the roads, railways and telecommunications sectors. While we expect a strong program of public transport projects, it is clear that FY21 represented the ‘calm before the storm’ with public commencements only seeming to come through at the end of the financial year. As such, FY22 is expected to record a 7.6% growth in activity, backed by the aforementioned state and federal government stimulus in road and rail infrastructure, as well as increasing levels of investment in renewable energy generation assets and associated transmission network development.

As construction on major transport infrastructure projects ramps up, circa 30.0% growth rates in both road and rail construction are expected to drive an increase of 14.7% in total engineering construction activity in FY23. While railway construction will begin a decline in FY24, total engineering construction is expected to peak at $29.0bn (+3.9%) in that same year.

Government-related activity provided substantial support to activity over 2020 and 2021, with government consumption increasing by 9.1%. This support will wane in 2021, with the private sector expected to drive growth to a large extent. Another key sector that provided a kick in the December quarter was merchandise exports, particularly rural exports and agricultural production.

Overall, NSW SFD is forecast to increase 1.0% in FY22, with the lockdown over June-October is also expected to drag on growth in FY22. GSP is forecast to weaken to 0.5% (which will be -0.9% lower than Australian GDP of 1.4%). Merchandise exports will provide some support to GSP. Record winter grain crops over FY21 and FY22 (following very low production in the previous 2 years) and large increases in other crops will drive higher exports over FY21 and FY22. Mining exports, including the dominant coal exports are also expected to increase in FY21 and particularly FY22. On the other hand, NSW will continue to be impacted disproportionately by much lower population growth and international border closures, and the smaller kick from housing subsidies.

With international borders opening and some degree of ‘normalization’ expected to return to much of the economy, we expect growth in NSW SFD and GSP to be closer to the national average (albeit a bit lower) over the three years to FY25. SFD is forecast to increase 5.3% in FY23, before easing to 2.7% and 2.6% in FY24 and FY25 respectively. A key factor in the stronger growth over FY24 and FY25 is expected to be solid housing, business and public investment. This will sustain employment growth and consumer spending. However, we expect weak public consumption to drag on growth over FY23 and FY24 before subsequently picking up. Some key factors that will see NSW experience relatively weaker economic growth than the national average over FY21 to FY25 include:

- The recovery in mining investment now underway - and set to strengthen over the next 3-4 years - is likely to have a relatively larger benefit to other states than for NSW.
- Slower population growth than the national average with the state's population forecast to average 0.9% p.a. over the next 7 years to June 2028 – 0.3% lower than the national average – compared to 1.5% growth of the 5 years to June 2019, when the state virtually matched national population increases. This will affect household consumption and housing demand.

On the other hand, net interstate trade in goods and services will contribute to GSP growth over FY22 to FY25 as other states grow faster than NSW. GSP is forecast to rebound to 5.5% in FY23, before averaging 2.1% over FY24 to FY25. Note that we expect that the strong lift in outbound international tourism in FY24, compared to inbound tourism and education, along with much faster growth in goods imports, will be a key contributor to weaker growth in GSP in that year. Employment growth is expected to track below the national average over each of the next 5 years. However, the state's unemployment rate is still expected to remain below the national average, as it has been for the past seven years. This will help maintain confidence and see a rebound in household spending from next year.

SFD and GSP growth is projected to slow over FY26 and FY27, due to increases in interest rates over 2023-25 impacting housing investment and consumer demand, with NSW suffering relative to the national average due to a higher household debt burden. Declines in public investment over FY26 to FY28 are also expected to contribute to weaker SFD and GSP growth, with public investment declining after a number of very large transport and other infrastructure projects wind down and are completed. A pickup in growth is then expected to ensue from FY28, as consumer spending and housing recover and strengthen, and business investment increases. On a positive note, the Australian dollar is forecast to average US$0.75 during this period, supporting trade-exposed industries. New South Wales will still derive benefits from solid economic growth in other states, given its tendency to run a positive balance on interstate trade in goods and services.

Table 3.2 New South Wales – Key Economic Indicators, Financial Years

							Forecast						
Year Ended June	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
New South Wales													
Total Construction Activity(*)	9.9	8.2	13.5	2.1	-8.2	-1.9	2.5	8.6	1.5	-0.3	-4.3	-6.1	-1.5
State Final Demand	3.9	3.5	3.3	2.0	-1.9	2.9	1.0	5.3	2.7	2.6	1.7	0.8	2.4
Gross State Product (GSP)(**)	**3.7**	**2.8**	**2.4**	**2.6**	**-0.7**	**2.4**	**0.5**	**5.5**	**2.0**	**2.2**	**1.8**	**1.8**	**2.7**
Employment Growth (Year Avg)	3.7	1.1	3.2	3.3	0.0	0.4	1.5	2.2	2.0	1.9	1.6	0.8	1.1
Australia													
Total Construction Activity(*)	-5.1	-3.3	12.2	-9.1	-3.7	-1.2	7.4	10.4	4.9	-1.1	-5.8	-4.5	2.4
Australian Domestic Demand	1.4	2.2	3.5	1.6	-1.0	2.5	2.6	5.5	3.3	2.6	1.6	1.1	3.0
Gross Domestic Product (GDP)	2.8	2.3	2.9	2.2	-0.2	1.4	1.4	5.3	2.8	2.4	2.0	1.9	3.1
Employment Growth (Year Avg)	2.3	1.5	3.0	2.4	0.5	0.6	1.8	2.5	2.3	2.1	1.8	1.0	1.4

Source: BIS Oxford Economics and ABS

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

** GSP is an estimate for FY2021

4. WAGES AND INFLATION OUTLOOK

4.1 CPI OUTLOOK

Inflationary pressures are rising

Consumer price inflation was subdued for the five years to the March quarter 2020, with annual (through-the-year or y/y) headline CPI inflation ranging between 1.0% and 2.2%; averaging 1.7%. Meanwhile, underlying inflation fell below the Reserve Bank's target 2-3% band in March 2016 and has stayed there.

Over the past 18 months, the headline CPI measure has been quite erratic, with the June quarter CPI actually declining by -1.9% q/q to be down -0.3% y/y, which was largely of due to the onset of COVID-19. The price falls flowed from a combination of the sharp downturn in consumer demand, the collapse of oil prices in the June quarter, the deferral of rents, the virtual suspension of childcare fees and other education fees, the deferral of health care rises and a range of other measures to 'administrated' prices in response to the COVID-19 'shock'. The reversal of many of these influences over the subsequent five quarters has seen the CPI move back to 3.0% y/y in the September quarter 2021. Overall, headline CPI inflation averaged 1.6% in FY21, following the 1.3% recorded in FY20.

Consumer price inflation was steady at 0.8% q/q in Q3, driven by dwelling purchase costs and fuel price inflation. Headline inflation (3% y/y) remains a good deal stronger than underlying inflation (2.1% y/y), boosted by fuel prices, although this divergence is expected to narrow in coming quarters. Significantly, underlying (or core) inflation – which excludes the extreme price movements, such as the 'usual' petrol price volatility - is now back in the RBA's 2-3% target range for the first time since the December quarter 2015. Transitory components continue to drive headline inflation, but with upward price pressure emerging from supply chain disruption, there are signs inflationary pressures are broadening. Durable goods have been affected by supply pressures; furniture price inflation remains brisk, while semi-conductor shortages have boosted prices for motor vehicles and AV equipment. Further, sharp growth in house construction costs (both materials and labour) is now being reflected in the CPI as Homebuilder grants taper off.

Price and wage inflation to increase back toward historical averages over the next 2 years

Both underlying and headline inflation are expected to largely remain in the RBA's 2-3% target range over the forecast period. BIS Oxford Economics' forecast for headline CPI inflation (in year average terms) is 2.8% in FY22, before easing to 1.9% in FY23, as fuel prices fall and housing costs begin to ease. However, underlying inflation will stay around current levels over the next two years.

Underlying and headline CPI inflation are subsequently expected to pick up over FY24 to FY26 as economic growth remains bouyant, profits, employment and wage growth strengthen, the unemployment rate declines and inflationary pressures re-build. Wages growth will accelerate as the unemployment rate falls back below 5%, with the rate expected to push below 4.5% by late 2022 and then falls toward 4% in FY24. The ongoing recovery in the global economy will also see global inflationary pressures remain elevated, pushing up manufacturing costs and prices increase over the medium term. The rise in the A$ toward US80 cents in FY25 will provide some offsetting pressures between FY23 and FY25.

Some structural factors may also add to inflation, such as a return to higher rental and food inflation. Food accounts for over 10% of CPI basket (excluding meals out and takeaway food). Food inflation had averaged around 2.8% p.a. over the 25 years to 2014 but had been very weak over the five years to FY19 (averaging only 1.1% p.a.), which was a key factor which muted prices over recent years. This was due to intense competition between the major supermarkets and falling or weak global

agricultural prices. The supermarkets cannot keep cutting prices (and either their own margins or suppliers' margins), while world agricultural prices will pick up over the medium term as global oversupply dissipates.

Overall, headline CPI inflation is forecast to rise to 2.3% in FY24, 2.6% in FY25 and 2.5% in FY26. The expected softening in the economy around mid-decade will see price and wage pressures weaken back to around 2¼ % over FY27 and FY28, before again rising to 2.5% over the latter years of the 2020s. Our forecasts are similar to current RBA forecasts.

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

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

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

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

4.1.1 RBA CPI Forecasts are Used to Calculate Real Wages

To calculate real wage increases, we deflate nominal wages growth by deducting expected inflation, using the CPI forecasts from the Reserve Bank of Australia (RBA) and a longer-term average based on the RBA forecasts for the first two years and the 2.5% mid-point of the RBA's inflation target band (i.e. 2 to 3%). The RBA's November 2021 'Statement on Monetary Policy' forecast the headline CPI rate to be 3¼ per cent in the December quarter 2021 and ease to 2.75% in the June 2022 quarter (giving a year average of 3% for FY22). A further easing to 2 ¼ % is forecast for both the December quarter 2022 and to June quarter 2023 - giving a year average CPI rate of 2.3% for FY23. The RBA then forecasts headline inflation to rise to 2.5% in the December quarter 2023, where we assume it would remain over the medium-to-long term (as this is the RBAs mid-point of the 2-3% tyarget).

The AER has adopted a changed methodology for calculating CPI inflation, according to the AER Final position paper "Regulatory Treatment of Inflation", released in December 2020. The main changes for the expected inflation projection are to reduce the length of the geometric average from 10 to 5 years and have a 'glide-path' from the latest RBA forecast to the 2.5% mid-point by year 5 of the forecast period – with this 2.5% projection maintained until FY28. The average then used for the five years from FY24 to FY28 is 2.5%.

4.2 NATIONAL WAGES

The key determinants of nominal wages growth are consumer price inflation, productivity, the relative tightness of the labour market (i.e. the demand for labour compared to the supply of labour), and compositional (structural) changes in the labour market following the end of the mining investment boom.

Low wages growth over recent years

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 was just above 5% over the two years to the March quarter 2020, before the COVID impacts. Historically this rate was seen as close to the NAIRU, (the Non-Accelerating Inflationary Rate of Unemployment or the `natural rate of unemployment'), but our latest research suggests that the natural rate has lowered in recent years, as a result of falling rates of unionisation and increasing casualisation. In addition, the relatively high underemployment rate suggested spare capacity in the labour market. 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.

Wage growth to pick up over next 2 years, before lifting as labour market tightens

Wage growth in terms of the wage price index (WPI) and average weekly earnings measures had been showing signs of improvement over the second half of 2018 to the March quarter 2020 at an average of 2.3% in terms of annual increases. However, the impact of COVID-19 pandemic saw employment plummet and dramatically lift the unemployment and underemployment rates over the June quarter 2020. This reversed the nascent improvement in wages that had been building.

The sharp deterioration in economic conditions over the June quarter saw the All Industries WPI rise only 0.2% in the June quarter (seasonally adjusted, or 0% in original terms), with the annual rate of increase sliding to 1.8% (June 2020 compared to June quarter 2019), while the average for FY20 slowed to 2.1%. Wages slowed further in the September quarter, rising 0.1% q/q (seasonally adjusted or 0.4% in original terms), to be 1.4% higher than the September quarter 2019. However, the overall labour market has recovered remarkably well (and above expectations) since the middle of 2020, with overall employment levels back above pre-COVID by March – with further strong growth evident in the June 2021 quarter - and underemployment back down below pre-COVID levels (see chart 4.2). This has underpinned a solid recovery in wages growth over the December 2020, March and June 2021 quarters – with the WPI increasing 1.8% through the year (June quarter 2021 compared to June quarter 2021). Nevertheless, the widespread wage freezes and very modest wage increases has seen WPI growth weaken over FY21, with year average growth of 1.5% in the All Industries WPI.

Also contributing in FY21 was the increase in the National Minimum Wage (NMW), which was awarded by the Fair Work Commission at its Annual Wage Review in June 2020 – to be paid to workers in different industry sectors on a staggered timetable over 2020/21. Given the prevailing circumstances back then, the FWC only awarded a 1.75% increase – down from the 3.1% to 3.5% increases of the past 3 years, but which the FWC deemed prudent to provide the poorer paid workers with an adequate wage. Although only 13% of full-time workers (a much higher proportion for part-time workers) rely on the annual increase in the minimum wage as their primary wage-payment mechanism, a significant proportion of workers are also indirectly influenced by the NMW increase, as it usually flows onto industry awards. Furthermore, some industries that were less affected by the COVID-19 impacts also received pay rises over FY21.

Fig. 4.1 Australia: Wages and Prices (includes SG Increases Impact)

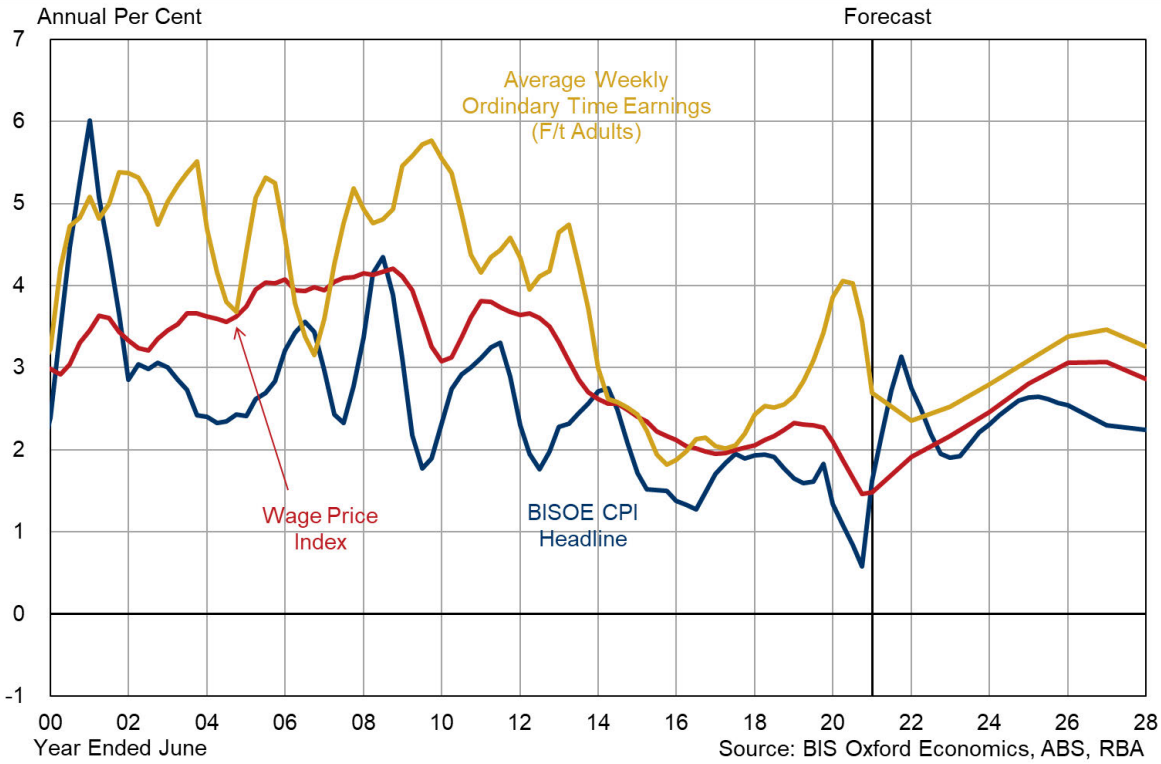
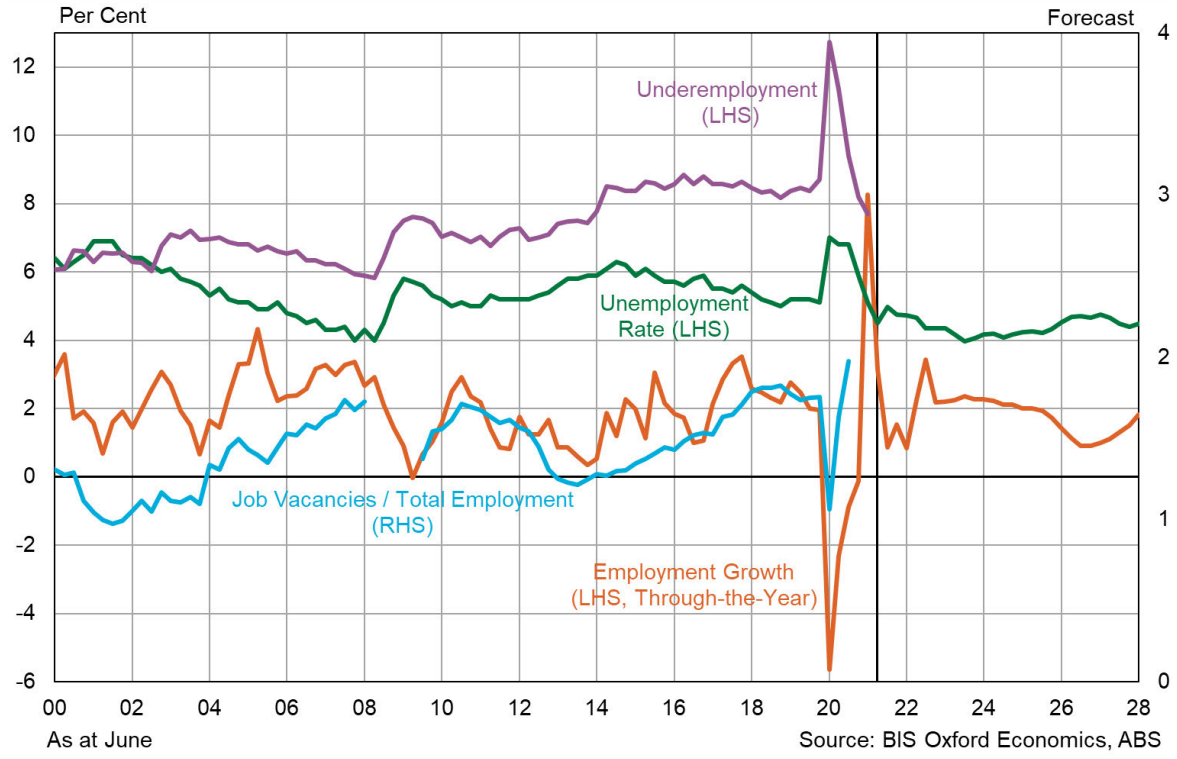


Fig. 4.2 Australia: Employment and Unemployment



As the economy and employment rebounds through FY22, growth in the All Industries WPI is also expected to exhibit a modest recovery, rising to 2.2%. Part of the rebound will be driven by deferred pay increases from 2020 and 2021 and the ending of most pay freezes. The higher increase in the NMW – the Fair Work Commission awarded 2.5% effective July 2021 – will also underpin higher increases. Another key element which will add to wage pressures over FY22 and FY23 is the rapid tightening in the labour market that is now apparent. Employment at June 2021 was well above pre-COVID levels, with the unemployment rate at 4.9% and participation rates at record levels. Although employment fell back over August-October due to lockdowns, the end of the lockdowns and re-opening of the economy is expected to see employment rebound back to June 2021 levels by early 2022 and continue increasing. The cessation of international migration to Australia since March 2020 has seen population growth plummet to just 0.2% (est.) in the year to June 2021, with the growth in the working age population (above 15 years old) increase by only 39,000 (+0.19%), compared to over 330,000 persons in FY19 and in the year to March 2020. Growth in the labour force has been facilitated by a marked increase in the labour force participation rate to record levels. However, there is now little scope to raise the participation rate further, and, with the underemployment rate pushing lower and job vacancies well above pre-COVID levels, wage pressures are building.

As the economy continues to strengthen over FY23 to FY25, we expect to see further improvement in the labour market, with labour demand increasing and the unemployment rate falling below 4.5% by early 2023 and fall further during FY24 and FY25 (and possibly below 4%). We expect to see skill shortages manifest in many areas of the economy. The tightening labour market will see wage pressures increase, and the All industries WPI is forecast to increase to 3.1% in FY26. Note that the forecasts of the All Industries WPI over the 5 years from FY22 to FY26 include the impact of the SG increase. We have assumed that the All Industries WPI is -0.3% lower in each of those 5 years, than if the SG Increase did not go ahead (see section 4.3 for key assumptions underpinning this impact). In the absence of the SG Impact, the All Industries WPI would have been 3.3% in FY26.

Forecasts for All industries wages are detailed in Table 4.1. Overall, using RBA CPI forecasts, real (inflation-adjusted) WPI growth for the Australian All Industries WPI is forecast to average 0.1% per annum over the seven-year period from FY22 to FY28, which includes the -0.3% impact on the All Industries WPI over that 5-year period. Excluding the SG Increase impact, rate of real increase would be slightly below the average of the past decade. Over the five-year period from FY24 to FY28, the real rate of increase is forecast to be 0.4%.

4.3 NEW SOUTH WALES ALL INDUSTRIES WAGE OUTLOOK

Growth in total or ‘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 past five years to FY20, the NSW All Industries state average WPI growth has been the same or 0.1% above the national average. This close-to-average performance was in line with the slightly stronger economic growth, compared to the national average, particularly in regard to state final demand (SFD) and Gross State Product (GSP), while the state’s labour market has performed better with stronger employment growth and consistently lower unemployment.

In FY22, we expect NSW’s economic growth to be much weaker than the national average. This will see growth in the state All Industries WPI converge with the national average. Thereafter, we expect economic growth in the state to slightly lag the national average over FY23 to FY28, although we still expect the state’s unemployment rate to either match or be lower than the national average. Accordingly, the NSW All Industries WPI is forecast to lag the national average over FY23 to FY24, and then match the national average over FY25 to FY28 as the labour market tightens markedly.

In the five years to FY28, we are forecasting the total state (All Industries) WPI in NSW to average 2.8% in nominal terms, slightly below the national average. In real (inflation-adjusted) terms, the average annual increase is forecast to be 0.3% (see Summary Table 1.1 in the Executive Summary). This forecast includes the -0.3% impact on the All Industries WPI (see section 4.4 for key assumptions underpinning this impact).

Table 4.1 Wages and Prices Growth – Australia

Year Ended June	Average Weekly Ordinary Time Earnings[1]			Wage Price Index (All Industries)			Official Headline CPI [2]	
	Nominal $/week	%CH	Real AWOTE %CH	Nominal Index	%CH	Real WPI %CH	Index	%CH
2002	847	5.4	2.5	76.7	3.3	0.5	75.7	2.9
2003	890	5.0	2.0	79.3	3.5	0.5	78.0	3.0
2004	932	4.7	2.3	82.2	3.6	1.2	79.9	2.4
2005	973	4.4	2.0	85.3	3.7	1.3	81.8	2.4
2006	1,018	4.6	1.4	88.7	4.1	0.9	84.4	3.2
2007	1,054	3.6	0.6	92.2	3.9	1.0	86.9	3.0
2008	1,106	4.9	1.6	96.1	4.1	0.8	89.8	3.4
2009	1,166	5.5	2.3	100.0	4.1	1.0	92.6	3.1
2010	1,231	5.6	3.2	103.1	3.1	0.8	94.8	2.3
2011	1,283	4.2	1.0	107.0	3.8	0.7	97.7	3.1
2012	1,338	4.3	2.0	110.9	3.6	1.3	100.0	2.3
2013	1,400	4.6	2.4	114.6	3.3	1.0	102.3	2.3
2014	1,442	3.0	0.3	117.6	2.6	-0.1	105.0	2.7
2015	1,477	2.4	0.7	120.4	2.4	0.7	106.8	1.7
2016	1,505	1.9	0.5	123.0	2.1	0.7	108.3	1.4
2017	1,536	2.0	0.3	125.4	2.0	0.2	110.2	1.7
2018	1,573	2.4	0.5	127.9	2.1	0.1	112.3	1.9
2019	1,615	2.7	1.0	130.9	2.3	0.7	114.1	1.6
2020	1,677	3.9	2.5	133.7	2.1	0.8	115.7	1.3
2021	1,722	2.7	1.1	135.6	1.5	-0.1	117.5	1.6
Forecasts								
2022	1,763	2.4	-0.7	138.2	1.9	-1.1	121.1	3.0
2023	1,808	2.5	0.2	141.2	2.2	-0.2	123.9	2.3
2024	1,858	2.8	0.3	144.7	2.5	0.0	127.0	2.5
2025	1,916	3.1	0.6	148.7	2.8	0.3	130.2	2.5
2026	1,980	3.4	0.9	153.3	3.1	0.6	133.4	2.5
2027	2,049	3.5	1.0	158.0	3.1	0.6	136.8	2.5
2028	2,116	3.3	0.8	162.5	2.9	0.4	140.2	2.5
Compound Annual Growth Rates ([3])								
2001-2010	4.8		2.0	3.7		0.9	2.8	
2010-2020	3.1		1.1	2.6		0.6	2.0	
2021-2028	3.0		0.4	2.6		0.1	2.5	
2023-2028	3.2		0.7	2.9		0.4	2.5	

Source: BIS Oxford Economics, ABS

(1) Average Weekly Ordinary Time Earnings for full-time adults. Data is year ended May.
(2) Inflation forecasts are RBA forecasts for the next 2 years from latest 'Statement of Monetary Policy'. Beyond that, inflation forecasts are based on a glide-path to the mid-point of RBA inflation target (2.5%) by year 5. The overall forecasts are then calculated as a geometric mean of the 'official' RBA inflation forecasts over the next 5 years or to the end of the end of the regulatory period.
(3) CAGR (Compound Annual Growth Rates) for 2023-2028 is CAGR for 2023/24 to 2027/28 inclusive (ie next Revenue Determination period).

4.4 SUPERANNUATION GUARANTEE INCREASES & THEIR IMPACT ON LABOUR COSTS

In light of the proposed increases to the Superannuation Guarantee, BIS Oxford Economics researched the treatment of superannuation contributions in regard to how the ABS measures labour costs. The Superannuation Guarantee is proposed to increase from the current 9.5% in the early-to-mid 2020s, rising 0.5% in July each year from July 2021 to 12% in July 2025.

To summarise, the Superannuation Guarantee Charge (SGC) is **not** included in the regular wage measure preferred by the Australian Energy Regulator – the Wage Price Index (WPI). The SGC is in effect **a labour 'on-cost'**. In terms of escalating wage costs over the regulatory period, the SGC therefore needs to be **added** to the forecast increases in the WPI. The exception to this rule would be where an employer already pays a superannuation amount higher than the legislated minimum (currently 9.5%), and chooses not to increase the super % until that proportion reaches the legislated minimum.

The basic WPI measures "ordinary time payments", with the broader measure – total hourly rates of pay - including only overtime payments in addition to ordinary hourly rates of pay. The ABS description of the Wage Price Index categorically states that:

"The following are specifically excluded from ordinary time payments:

- Employer contributions to superannuation funds"[1]

Six other types of irregular payments are also listed as being excluded from ordinary time earnings, such as severance, termination and redundancy payments; leave loading; etc.

In discerning the relationship between superannuation contributions and measures of wages and earnings we must first make some distinctions in the way the ABS considers superannuation contributions. Firstly, we note that the ABS recognises three distinct categories of labour costs in-line with the International Labour Organisation (ILO) International Standard Classification of Labour Costs, and most of these components are measured by the Major Labour Cost survey (cat. 6348.0):

1. Employee earnings – made up of wages and salaries, fringe benefits and termination payments.

2. Items of a social security nature that provides a future or contingent benefit to employees – made up of superannuation contributions and worker' compensation.

3. Taxes associated with employment – includes payroll tax and fringe benefits tax.

Secondly, the ABS recognises the concept of employer "on-costs", or equivalently "non-wage labour costs". These are considered additional costs employers incur beyond direct payments for work done by employees.

Employer on-costs are generally considered as involuntary outlays as they are primarily imposed by statutory requirements or under collective bargaining agreements. Employers have the obligation to pay the minimum amount of Superannuation Guarantee (SG) to employees. The Superannuation Guarantee Charge (SGC) was introduced from 1 July 1992 and increased both the coverage and minimum contribution levels.

In the September quarter 2004, the ABS expanded the scope of its Wage Cost Index (WCI), which was a predecessor of the Wage Price Index (WPI). Prior to the expanded scope, the WCI focussed

[1] ABS catalogue #6351.0.55.001 'Wage Price Index – Concepts, Sources and Methods, 2012', page 24.

exclusively on wage and salary rates. The series was renamed to the Labour Price Index (LPI), to reflect the inclusion of four separate non-wage indexes being recorded:

1. Employer contributions to superannuation
2. Workers' compensation
3. Annual leave and Public holidays
4. Payroll tax

The ABS discontinued the non-wage and labour price indexes in the September quarter 2012 and this resulted in what we now know as the WPI.

Therefore, we can categorically conclude that WPI in its current form, does not measure employer contributions to superannuation, and therefore will not be directly influenced by any changes to the Superannuation Guarantee.

As for **Average Weekly Earnings** (AWE), earnings in this context are "broadly defined as current and regular payments in cash to employees for work done" (ABS 2018). Through to 2007, AWE excluded amounts salary sacrificed and this is now considered as a form of wages and salaries in cash. In this context we can conclude, similarly with WPI, that AWE does not include superannuation contributions and will not measure any changes to the Superannuation Guarantee.

Assumptions regarding Superannuation Guarantee Increases & Their Impact on Forecasts Wage Increases and Labour Costs

The superannuation guarantee (SG) as it is currently legislated, has the contributions from employers increasing from the current 9.5% by 0.5% on 1st July each year from 2021 to 1st July 2025. This means that it will increase in each of the first 3 of the 5 years of the next regulatory period of Transgrid (i.e. over FY24 to FY28).

As discussed above, the SG increases are not included in the wage price index, but will impact the quantum of the WPI increases in each year from FY22 to FY26 (i.e. 2021/22 to 2025/26). This is based on the notion that a proportion of the costs associated with SG increases will be ultimately borne by employees, via lower wage growth than would be the case if there was no SG increase. The Reserve Bank of Australia has estimated that around 80% of the increase in non-cash benefits, such as superannuation, are passed on to employees in the form of lower wage increases. This is referred to as the 'economic incidence' of the SG increase, whereas the 'statutory incidence' of the whole 0.5% annual SG increase falls on the employers. However, the proportion of the cost borne by employees would differ according to the form of pay-setting method and other intrinsic factors. Those employees who have their pay rises set under collective bargaining **and** who belong to a strong union with considerable industrial power are expected to ultimately receive a much higher proportion of their pay increase than those who receive their pay increase via the annual minimum wage increase (set by the Fair Work Commission) and those employees on 'individual arrangements'.

In terms of overall wage costs, **the full 0.5% for the SG increases each year should be added to the forecast WPI increases each year** for internal wages and also external wages, to arrive at the total percentage increase in labour costs. This is in line with advice from Deloitte Access Economics (DAE) to the AER in their Superannuation Guarantee paper, that "…taking into account the uncertainty regarding how individual NSPs will respond to changes in the minimum superannuation guarantee, it is recommended that the full 0.5 percentage point annual increase to the superannuation guarantee be added to forecast WPI growth" (page 5 of DAE impact of *Changes to the Superannuation Guarantee on Forecast Labour Price Growth,* July 2020).

In deriving the WPI forecasts, we have made the following assumptions when applying a 'discount' to the WPI in the All Industries and specific industry WPI forecasts:

1. The key underlying assumption assumes that around 55% of the economic incidence of the Superannuation Guarantee (SG) increases are passed on to employees, with employers only paying for 45% of the cost of the SG increases. This applies to the All Industries wages. This is in line with RBA research, but with adjustments for certain industries, with the incidence much lower for employees in government-dominated industries and in sectors with stronger unions. This means that All Industries WPI growth is equivalent to 55% less than it would be in the 'alternative' case, where no SG increase occurred. In the context of a 0.5% increase each year, the impact on All Industries WPI is -0.3%.
2. The impact on employees is assumed to be evenly spread in each year, rather than unevenly spread over time. This implies wages are negotiated prior to the SG increase and spread evenly over the whole year. We acknowledge this is a simplified assumption, given that often the economic incidence is not spread evenly across years, with the ultimate impacts often going beyond the period of SG increases.
3. The incidence of the SG increase differs across the three different segments of pay methods. Those 13.1% of employees (full-time adults) who receive their annual pay rise via the Minimum wage case by the Fair Work Commission are assumed to receive 70% less, with those who receive payments via individual arrangements receiving 77% less. At the All Industries level, it assumed that the average of the 38.4% of employees who rely on collective bargaining will receive 36% less. However, this %age for those on collective bargains or EBAs will markedly differ across industry sectors.
4. For employees in the EGWWS sector, the base assumption is that those 64.6% of employees on EBAs will receive 5% less, with employers paying the other 95%. This assumption is based on the strength of the unions covering the EGWWS sector, plus the fact that many on EBAs in the sector have a higher superannuation rate than the base 9.5%, providing added scope to not increase the superannuation rate but pay full wage increases. Overall, the impact on the whole EGWWS WPI will be -0.13% for each of the 5 years from FY22 to FY26 inclusive.
5. In the Construction sector, we are assuming that the discount to wages negotiated by the construction unions covering that industry will be also be only 5%. Overall, the impact on the whole Construction WPI will be -0.3% for each of the 5 years from FY22 to FY26 inclusive.

4.5 ALTERNATIVE SCENARIO – SOME SUPERANNUATION GUARANTEE INCREASES ARE DEFERRED

The scenario which the AER has effectively adopted is to assume that the SG increases as currently legislated proceed under the proposed timetable of increases, i.e. the first 0.5% increases the minimum superannuation guarantee occurs on 1st July starting 1 July 2021 and is increased 0.5% each 1 July until 1st July 2025 inclusive. This is effectively the 'base' scenario which is presented in this document and the associated forecasts.

However, there is a plausible 'alternative' scenario, whereby the proposed SG increases are again deferred. There is a reasonably high probability that the proposed increases in the Superannuation Guarantee Charge (SGC) will again be deferred, as they were in the second half of last decade. BISOE believes there will be considerable pressure from businesses, state and local governments to push out the 'legislated' start of the SGC increases at least 3 years, to say July 2024, given the impacts of COVID-19 on the economy and their perceived ability to pay. It should be remembered that the Commonwealth government decided to defer the original timetable of the SGC increases (then due to occur from the second half of the 2010s) because of the perceived weakness of the economy

in 2014/15. The economy is much, much weaker now. However, as there is considerable uncertainty surrounding both the actual timing and quantum of the SGC increases, in the forecasts in the table below, we have assumed that some of the SG increases are pushed out beyond FY26.

Table 4.2 Alternative Scenario: SG Increases are Deferred – Labour Cost Escalation Forecasts: New South Wales & Australia, Financial Years

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

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	5 yr Avg (f)
	Actuals				Forecasts		Next Regulatory Period					
NOMINAL PRICE CHANGES												
1. Electricity Network-Related Labour												
EGWWS WPI - New South Wales (a)	**1.3**	**2.6**	**2.5**	**1.6**	**2.2**	**2.8**	**3.1**	**3.4**	**3.5**	**3.3**	**3.1**	**3.3**
EGWWS WPI - Australia (b)	2.0	2.8	2.7	1 8	2.1	2.8	3.1	3.4	3.5	3.3	3.2	3.3
EGWWS AWOTE - Australia (b)	2.3	1.3	2.9	1 6	1.9	3.2	3.3	3 6	3.7	3.5	3.2	3.5
2. Contractor Labour Cost Escalation												
Construction WPI - New South Wales (c)	**2.6**	**2.0**	**1.5**	**2.1**	**2.5**	**2.5**	**3.0**	**3.4**	**3.7**	**3.2**	**2.8**	**3.2**
Construction WPI - Australia (b)	1.9	1.9	1.5	1 3	2.3	2.5	3.0	3.4	3.6	3.3	2.9	3.2
Construction AWOTE - Australia (b)	1.0	-0.6	7.2	0 5	3.8	2.9	3.3	3 6	3.9	3.6	3.3	3.6
3. All Industries Wages												
All Industries WPI - New South Wales	**2.1**	**2.3**	**2.1**	**1.5**	**2.2**	**2.4**	**2.6**	**3.1**	**3.3**	**3.1**	**2.8**	**3.0**
All Industries WPI - Australia (d)	2.1	2.3	2.1	1 5	2.2	2.4	2.7	3.1	3.3	3.1	2.9	3.0
All Industries AWOTE - Australia (d)	2.4	2.7	3.9	2.7	2.6	2.8	3.1	3.4	3.7	3.5	3.2	3.4
Consumer Price Index (headline) (e)	1.9	1.6	1.3	1 6	3.0	2.3	2.5	2 5	2.5	2.5	2.5	2.5
REAL PRICE CHANGES (g)												
1. Electricity Network-Related Labour												
EGWWS WPI - New South Wales (a)	**-0.6**	**0.9**	**1.2**	**0.0**	**-0.8**	**0.5**	**0.6**	**0.9**	**1.0**	**0.8**	**0.6**	**0.8**
EGWWS WPI - Australia (b)	0.0	1.1	1.3	0 2	-0.9	0.4	0.6	0 9	1.0	0.8	0.7	0.8
EGWWS AWOTE - Australia (b)	0.4	-0.3	1.6	0 0	-1.1	0.9	0.8	1.1	1.2	1.0	0.7	1.0
2. Contractor Labour Cost Escalation												
Construction WPI - New South Wales (c)	**0.7**	**0.3**	**0.2**	**0.5**	**-0.6**	**0.2**	**0.6**	**0.9**	**1.2**	**0.7**	**0.3**	**0.8**
Construction WPI - Australia (b)	-0.1	0.2	0.2	-0 3	-0.8	0.2	0.5	0 9	1.1	0.8	0.4	0.8
Construction AWOTE - Australia (b)	-0.9	-2.2	5.9	-1.1	0.7	0.6	0.8	1.1	1.4	1.1	0.8	1.1
3. All Industries Wages												
All Industries WPI - New South Wales	**0.2**	**0.7**	**0.7**	**-0.1**	**-0.9**	**0.0**	**0.2**	**0.6**	**0.8**	**0.6**	**0.3**	**0.5**
All Industries WPI - Australia (d)	0.1	0.7	0.8	-0.1	-0.9	0.1	0.3	0 6	0.8	0.6	0.4	0.5
All Industries AWOTE - Australia (d)	0.5	1.0	2.5	1.1	-0.4	0.5	0.6	0 9	1.2	1.0	0.7	0.9

Sources: BIS Oxford Economics, ABS

(a) Electricity, Gas, Water and Waste Services (EGWWS) Wage Price Index (WPI) for New South Wales.
(b) Australian sector wage forecasts provided for comparison, including Average Weekly Ordinary Time Earnings (AWOTE).
(c) Construction Sector Wage Price Index (WPI) for New South Wales.
(d) Australian All Industries AWOTE and WPI provided for comparison.
(e) Inflation forecasts are RBA forecasts for the next 2 years from latest 'Statement of Monetary Policy'. Beyond that, inflation forecasts are based on a glide-path to the mid-point of RBA inflation target (2.5%) by year 5. The overall forecasts are then calculated as a geometric mean of the 'official' RBA inflation forecasts over the next 5 years or to the end of the regulatory period, with years 3,4 and 5 CPI equal to the calculated 5-year geometric mean. This methodology is the position adopted by the AER in its Final position paper "Regulatory treatment of inflation" of December 2020.
(f) Average Annual Growth Rate for 2023/24 to 2027/8 inclusive, ie for next regulatory period.
(g) Real price changes are calculated by deducting the inflation rate from nominal price changes.

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

5.1 CHOICE OF THE WAGE PRICE INDEX AS THE MEASURE OF LABOUR COSTS

The WPI (wage price index) for the EGWWS (Electricity, Gas, Water & Waste Services or 'Utilities') sector in New South Wales is used as a proxy for all of Transgrid's network related labour costs. Network labour costs includes all internal labour (i.e. all head office staff including professional and admin employees plus field employees) as well as any external labour hired to provide field services such as 'asset management' services. Businesses providing these field services are usually classified to the utilities sector. Hence, including their labour costs as part of Transgrid's opex 'network' labour and escalating it with the WPI for the state utilities sector will be consistent with the AER's framework. That being said, some of Transgrid's internal staff may be involved in project delivery such as replacement and/or augmentation capital projects. Their labour cost can be included in the capex calculations.

BISOE chose to use the Wage Price Index (WPI) as the key measure of labour costs for the forecasts of Electricity, Gas, Water and Waste Services. The key motivations for this are:

(a) Greater data availability: the EGWWS WPI is available at the national level and for the key states (NSW, Victoria and Queensland), both on quarterly and annual basis. Average Weekly Earnings (AWE) and Average Weekly Ordinary Time (AWOTE) are not available by industry by state, and at the national level are only published every 6 months; and

(b) The Australian Energy Regulator (AER) prefers the WPI as it has less volatility than AWOTE and is a better measure of underlying trends.

5.2 NATIONAL & NEW SOUTH WALES EGWWS WPI FORECASTS

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

The national (Australia-wide) EGWWS 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 two decades (see Table 5.1 and Fig 5.1). Over these two decades, the average growth in the real (inflation adjusted) WPI was 1.3%. Since the collapse in wages growth following the end of the mining boom, the EGWWS WPI has continued to outpace the All Industries average, increasing by an average of 2.5% over the past 6 years to FY20 inclusive, 0.3% higher than the 2.2% national average.

Over the next seven years to FY28 inclusive, the EGWWS WPI at the Australian level is forecast to average 3.0% p.a., 0.4% above the All Industries WPI average. Over the 5-year period from FY24 to FY28 inclusive (Transgrid's next regulatory period) the Australian EGWWS WPI is forecast to average 3.2%. which will be 0.3% above the All Industries average. In real terms, the Australian EGWWS WPI is forecast to average 0.7% p.a. over the five years to FY28. Note that these forecasts include the impact of the SG increase, which is expected to see the EGWWS WPI be -0.13% lower over FY22 to FY26 than if the SG increase did not proceed on the current proposed timetable. Excluding the SG increase impact, the overall real average of 0.8% is less than the 1.0% p.a. averaged over decade to

FY20. In terms of the historical difference vis-à-vis the All Industries WPI average over the past decade, excluding the impacts of the SG increase (which is assumed to be 0.15% higher for the All Industries WPI) the difference is in line with the 0.4% difference of the past decade.

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

Year Ended June	Average Weekly Ordinary Time Earnings (1)						Wage Price Index (2)					
	All Industries			Electricity, Gas, Water and Waste Services			All Industries			Electricity, Gas, Water and Waste Services		
	Nominal $/week	%CH	Real AWOTE %CH	Nominal $/week	%CH	Real AWOTE %CH	Nominal Index	%CH	Real WPI %CH	Nominal Index	%CH	Real WPI %CH
2002	847	5.4	2.5	981	6.8	3.9	76.7	3.3	0.5	73.8	4.2	1.4
2003	890	5.0	2.0	1,001	2.1	-0.9	79.3	3.5	0.5	76.8	4.1	1.1
2004	932	4.7	2.3	1,057	5.5	3.1	82.2	3.6	1.2	79.9	4.1	1.7
2005	973	4.4	2.0	1,091	3.2	0.8	85.3	3.7	1.3	83.3	4.3	1.8
2006	1 018	4.6	1.4	1,111	1.9	-1.3	88.7	4.1	0.9	87.6	5.2	2.0
2007	1 054	3.6	0.6	1,152	3.7	0.7	92.2	3.9	1.0	91.8	4.8	1.8
2008	1 106	4.9	1.6	1,183	2.7	-0.7	96.1	4.1	0.8	95.7	4.2	0.8
2009	1 166	5.5	2.3	1,255	6.1	3.0	100.0	4.1	1.0	100.0	4.5	1.4
2010	1 231	5.6	3.2	1,351	7.6	5.3	103.1	3.1	0.8	104.4	4.3	2.0
2011	1 283	4.2	1.0	1,474	9.1	6.0	107.0	3.8	0.7	108.7	4.2	1.1
2012	1 338	4.3	2.0	1,510	2.5	0.1	110.9	3.6	1.3	112.5	3.5	1.2
2013	1 400	4.6	2.4	1,602	6.1	3.9	114.6	3.3	1.0	117.3	4.2	1.9
2014	1 442	3.0	0.3	1,635	2.0	-0.7	117.6	2.6	-0.1	121.1	3.2	0.4
2015	1 477	2.4	0.7	1,646	0.7	-1.0	120.4	2.4	0.7	124.5	2.8	1.1
2016	1 505	1.9	0.5	1,704	3.5	2.2	123.0	2.1	0.7	127.5	2.4	1.0
2017	1 536	2.0	0.3	1,777	4.3	2.6	125.4	2.0	0.2	130.3	2.2	0.5
2018	1 573	2.4	0.5	1,818	2.3	0.4	127.9	2.1	0.1	132.9	2.0	0.0
2019	1 615	2.7	1.0	1,842	1.3	-0.3	130.9	2.3	0.7	136.6	2.8	1.1
2020	1 677	3.9	2.5	1,896	2.9	1.6	133.7	2.1	0.8	140.2	2.7	1.3
2021	1 722	2.7	1.1	1,927	1.6	0.0	135.6	1.5	-0.1	142.7	1.8	0.2
Forecasts												
2022	1 763	2.4	-0.7	1,962	1.8	-1.2	138.2	1.9	-1.1	145.6	2.0	-1.1
2023	1 808	2.5	0.2	2,022	3.1	0.8	141.2	2.2	-0.2	149.4	2.7	0.3
2024	1 858	2.8	0.3	2,086	3.1	0.7	144.7	2.5	0.0	153.8	2.9	0.5
2025	1 916	3.1	0.6	2,158	3.4	0.9	148.7	2.8	0.3	158.8	3.3	0.8
2026	1 980	3.4	0.9	2 236	3.6	1.1	153.3	3.1	0.6	164.2	3.4	0.9
2027	2 049	3.5	1.0	2 314	3.5	1.0	158.0	3.1	0.6	169.7	3.3	0.8
2028	2 116	3.3	0.8	2 389	3.2	0.7	162.5	2.9	0.4	175.1	3.2	0.7
Compound Annual Growth Rates (2)												
2001-2010	4.8		2.0	4.4		1.5	3.7		0.9	4.4		1.6
2010-2020	3.1		1.1	3.4		1.4	2.6		0.6	3.0		1.0
2021-2028	3.0		0.4	3.1		0.6	2.6		0.1	3.0		0.4
2023-2028	3.2		0.7	3.4		0.9	2.9		0.4	3.2		0.7

Source: BIS Oxford Economics, ABS

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

(2) CAGR (Compound Annual Growth Rates) for 2023-2028 is the average annual growth for 2023/24 to 2027/28 inclusive i.e. next Revenue Determination period.

BIS Oxford Economics regards the WPI to be a measure of the *underlying* wages growth in the utilities sector for total Australia. In terms of total wage costs total wage costs — expressed in Average Weekly Ordinary Time Earnings (AWOTE) — BIS Oxford Economics expects EGWWS AWOTE to average 3.4% per annum over the five years to FY28, 0.2% higher than the EGWWS WPI. Our AWOTE forecasts are higher due to compositional effects. Apprentices, trainees and numbers of new staff have increased markedly over recent years, across the electricity, gas and water sector generally. Given slower growth in employment numbers over the next decade, it is likely that there will

be overall up skilling of the existing workforce, which will see a commensurate movement by much of the workforce into higher grades (i.e. on higher pay), resulting in higher earnings per employee.

During the COVID-19 crisis, the EGWWS sector has fared much better than just about all other sectors, along with the Education, Health & Social Assistance and Finance and Insurance sectors, in terms of wage increases over FY21. The Australian EGWWS WPI growth in the June quarter 2020 was 0.6% q/q in original terms (2.5% y/y), well above the All Industries WPI average of 0% q/q in original terms (1.8%y/y). This strong out-performance continued in the September and December quarters. However, the quarterly increases of 0.1% in each of the March and June quarters 2021 has seen annual growth in the EGWWS WPI slip below the All Industries average for only the second time in the past two decades. We believe this will be a short-lived aberration and that the EGWWS WPI will rebound strongly over the next year to again outpace the national average.

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

To a large extent, higher relative wages growth been underpinned by strong capital works program in the utilities sector over the past two decades (and particularly up to 2013 - resulting in robust employment growth over the same period), strong competition from the mining and construction workers for similarly skilled labour and the 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 (such as the recent COVID-19 inspired downturn) 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).

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 5.2). As we expect that the EGWWS industry will continue to have higher levels of unionisation than the national average, we expect that unions in the EGWWS industry will continue to be able to negotiate for higher wages for a substantial proportion of EGWWS employees, resulting in EGWWS wages growing faster than the national average.

Collective bargaining dominates the pay setting arrangements in the utilities sector, while the relative absence of workers relying on (often) low-increase awards (set in the National Wage Case) means the overall average level of total utilities wages (in A$ terms) will generally be higher than the All Industries average. Over the outlook period, we expect collective agreements in the EGWWs sector to achieve average increases of 3.4%, compared to 3.2% for All Industries.

Figure 5.1 Wage Price Index - Australia All Industries, Electricity, Gas, Water & Waste Services, and Construction (includes SG increases impacts)

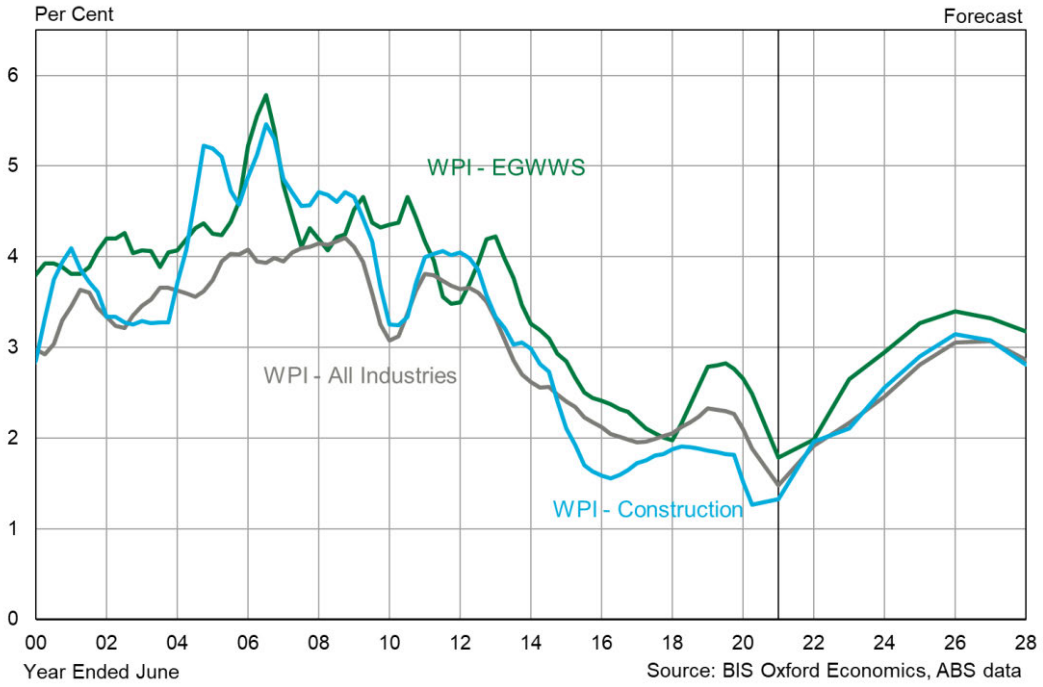
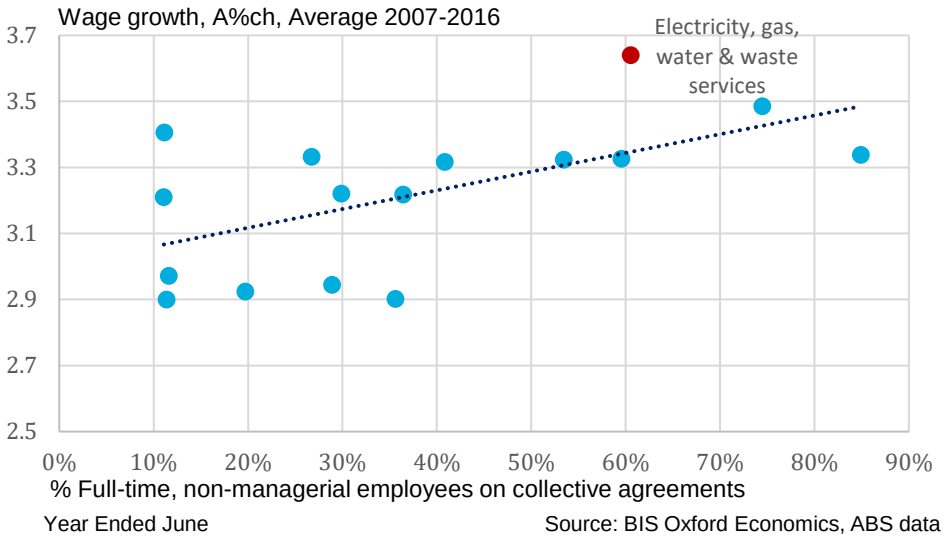


Figure 5.2 Average wage growth and unionisation rates by industry, 2007-2016



BIS Oxford Economics analysis shows collective agreements in the EGWWS sector were on average around 1.5% higher than CPI inflation over the 15 years to FY2014 (excluding the effects of GST introduction in 2000/01). In the six years to FY20, collective agreements were on average 1.4% above the CPI. Given the strength of unions in the sector and a still strong demand for skilled labour, collective agreements are forecast to remain around 0.9% above the 'official' CPI over the forecast period (this excludes SG increase impacts), 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 be weaker over FY21 to FY22, compared to the last 5 year, when EBAs averaged around 2.9%. EBAs in the EGWWS industry have been dragged down by an extremely low agreement in Western Australia in the June 2021 quarter, which will have a short-term impact as this agreement runs for less than 2 years. We expect other EBAs in the sector to rise strongly over the next two years, given that the demand for skilled labour remains strong and particularly given the recent high enterprise agreement outcomes in the construction sector which will influence negotiations in the EGWWS sector, as some skills can be transferable.

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

Wage increases under Individual agreements and EBAs will strengthen from FY24 due to tight supply and stronger demand for skilled labour from the Mining and Construction sectors.

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

The overall labour market is expected remain tight over the next year, with the unemployment rate to fall back under 5% due to an acceleration of employment growth through calendar 2022 and FY23 and FY24, which will outpace population and labour force growth and see the unemployment rate drop to under 4.5% by late 2022/early 2023. Hence, we expect to see the emergence of critical 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 3 years to FY24 and remain at elevated levels to the end of the decade (see figure 5.3). Meanwhile, there is similar strong growth coming through in in the Construction sector, with solid increases across all segments of the overall construction sector (residential construction, non-residential building and civil engineering & infrastructure construction) over FY22 to FY25, leading to strong labour demand in that sector, particularly from 2024 when activity surpasses the 2018 levels (see figure 5.4).

Employers are already reporting an increasing shortage of technicians and trade workers, and employees with STEM skills. These are essential workers in the utilities sector. A key problem is that the TAFE (technical and further education) systems across the country have simply not been training enough workers. BIS Oxford Economics research shows this is being compounded by new graduates in the trades stream in particular not increasing fast enough to replace retiring workers, with some numbers actually falling. Despite government announcements that they are moving to address the TAFE system, it is unlikely that these issues will be addressed within the next 5 years. Added to this is that skilled immigration has been suspended. When it does return, it is likely to be a slow ramp-up, meaning that the skill shortages will persist and won't be easily or quickly solved by migration.

Figure 5.3 Australia – Mining Investment

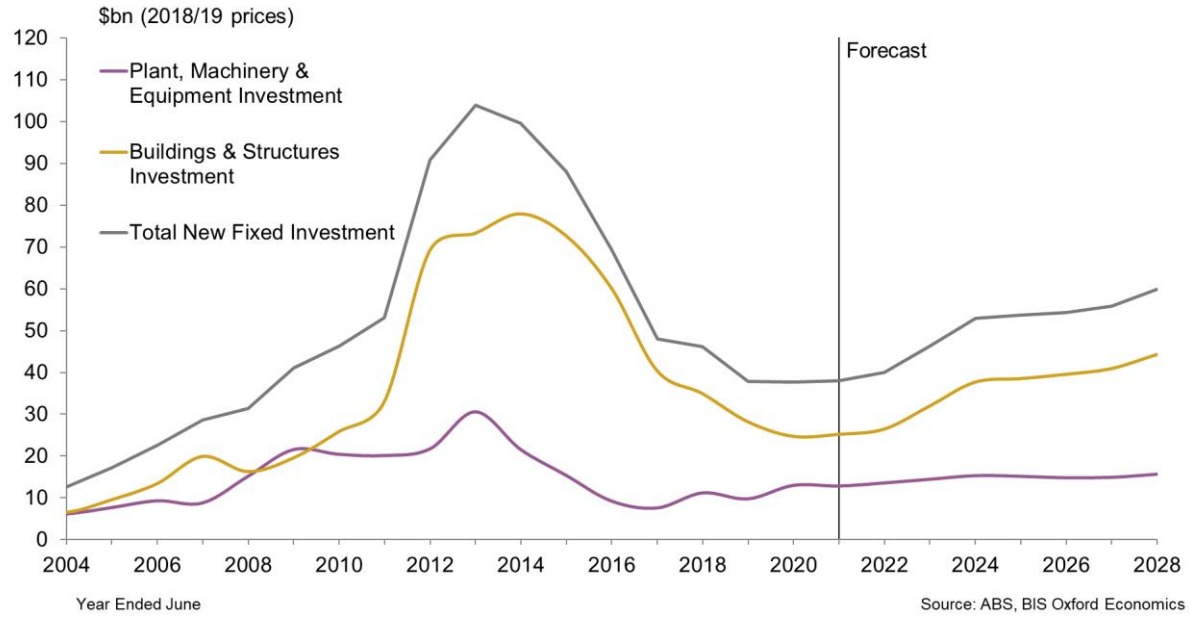
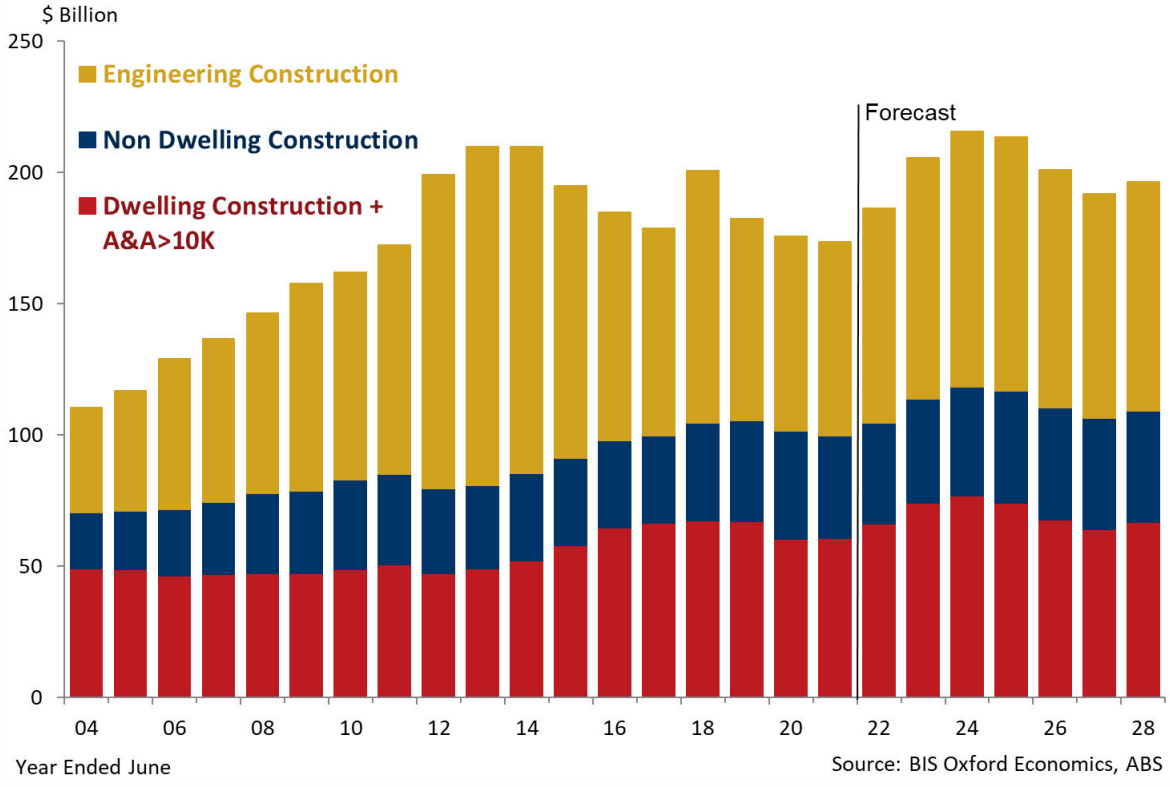


Figure 5.4 Australia – Construction Activity (real work done)



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 FY23 to FY26 period.

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 well above the average for New South Wales (see figure 5.7). 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 5.1).

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 figure 5.5 and 5.6). Meanwhile, utilities wages growth was relatively strong over this same period. 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.

5.2.1 Outlook for utilities wages growth in New South Wales

Wages in the New South Wales utilities sector are expected to move in line with the national utilities sector average over Transgrid's upcoming regulatory period (see tables 5.3 and 1.1). NSW utilities wages growth has been weaker than the national average over the past five years, especially during the 2016-2018 period the NSW government was privatising the electricity networks in the state and forced wages lower as it attempted to make the networks look attractive in terms of their overall cost structure. This was a 'one-off' influence on both NSW and Australian EGWWS wages growth, which has now been fully unwound. Nevertheless, relatively higher EBAs in the Victoria and Queensland utilities sectors (compared to NSW and the national average) have seen NSW utilities wages growth track lower over the 2019 to 2021 period.

Recent enterprise bargaining data from the Commonwealth Employment Conditions Department (formerly the Department of Employment and Workplace Relations) shows that NSW has gradually narrowed the gap in EBAs in relation to the national average over the past three years, with the latest data (June 2021) showing currently operating AAWIs (Average Annualised Wage Increases) were 0.3% higher than the national average. The annual averages of approved agreements are now also just above the national average. Accordingly, we expect NSW utilities WPI growth to track just above the national average for the next two years. From FY24 we are forecasting the NSW utilities WPI to virtually match the national average. There will be strong wage pressures in NSW, particularly from high and increasing levels of construction activity, while the NSW utilities sector will face competition

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

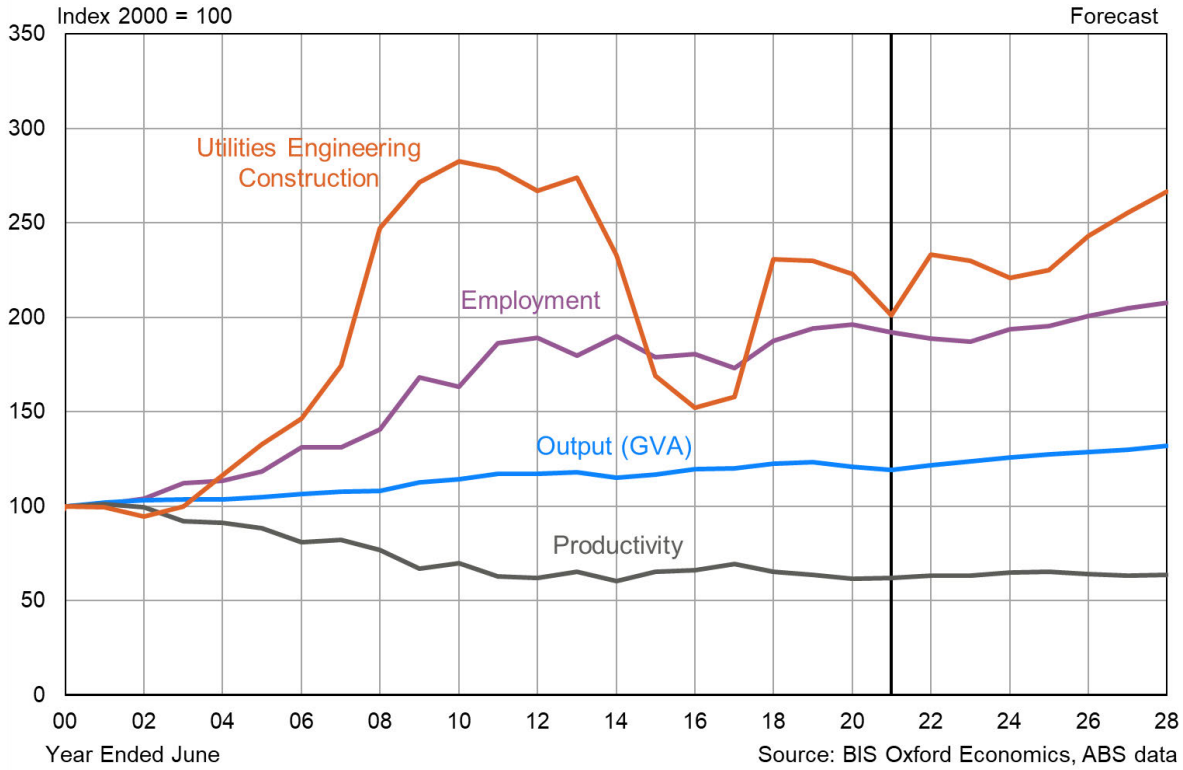


Figure 5.6 New South Wales – Utilities Employment, Output, Investment & Productivity

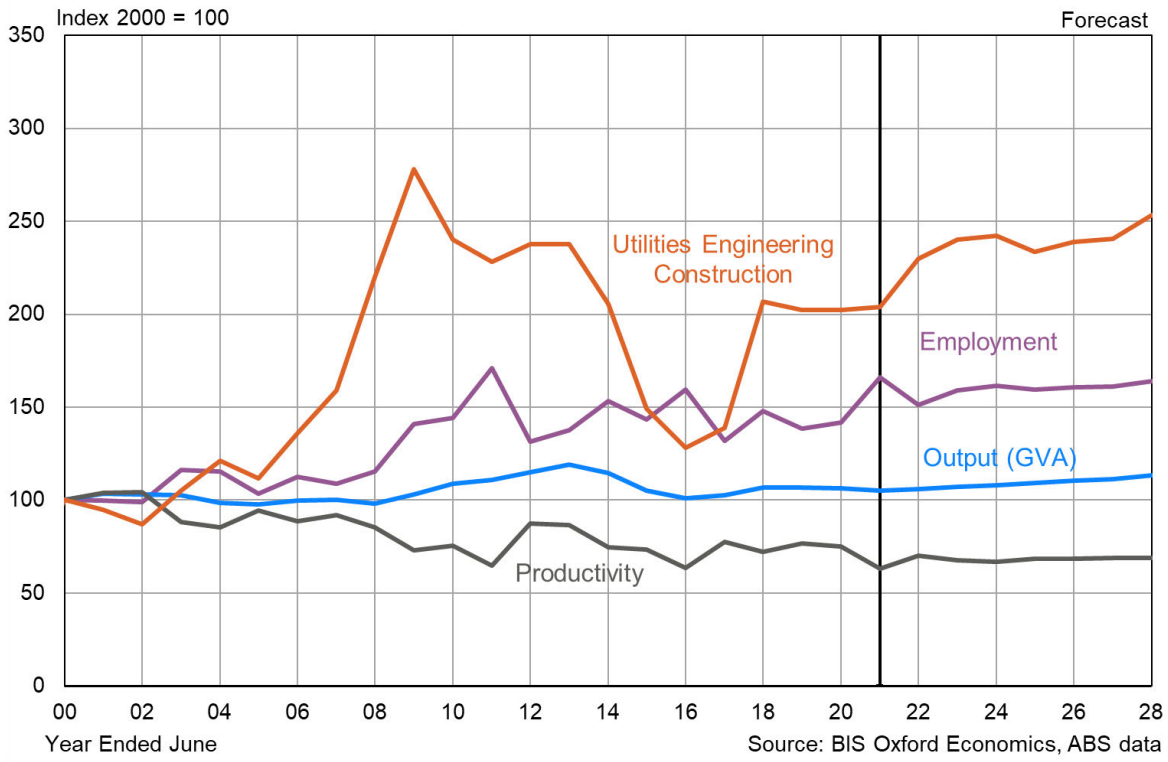
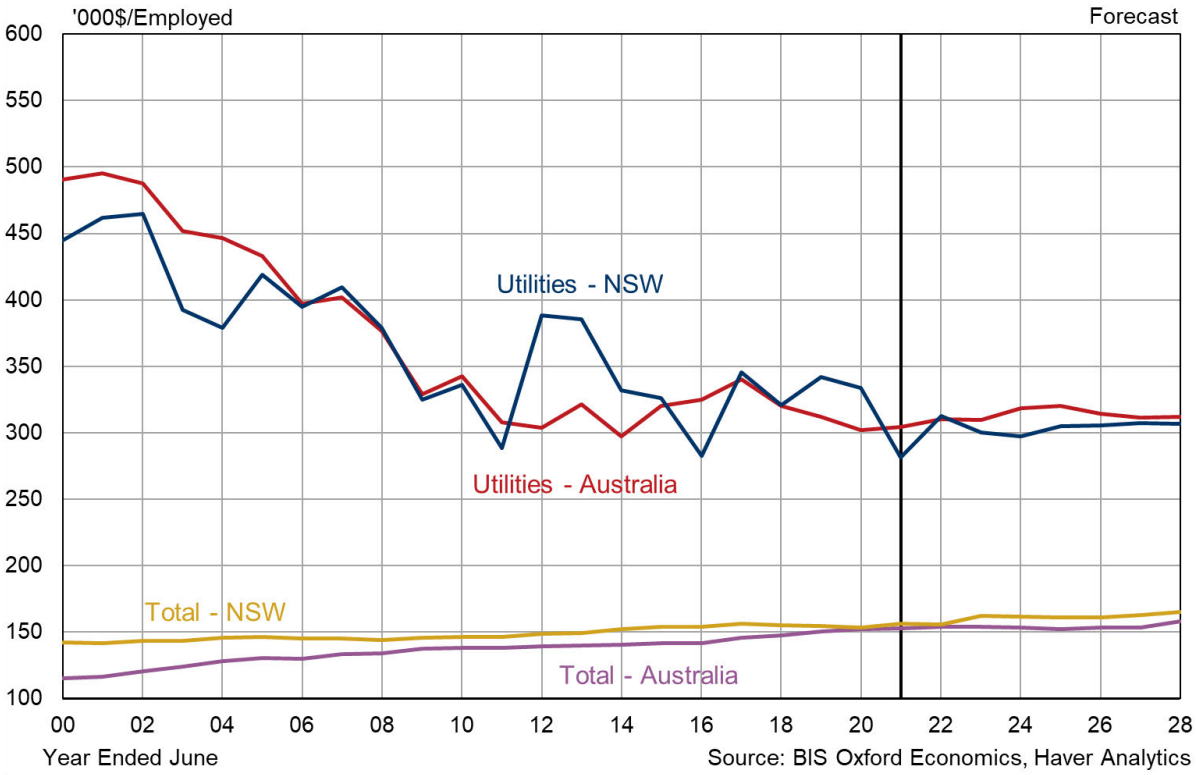


Figure 5.7 Utilities Productivity in Australia and New South Wales



for key skilled workers from interstate utilities, construction and mining sectors. With strong competition for similarly skilled labour from the mining and construction industries, firms in the NSW 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 (figure 5.6). The overall strengthening in the labour market, and particularly in the Construction and Mining sectors – which are key competitors to the utilities sector in terms of 'similarly' skilled workers - is expected to result in utilities WPI growth accelerating over the 2024 to 2026 period, and subsequently remain elevated over FY27.

New South Wales EGWWS WPI growth is forecast to average 3.2% per annum in nominal terms over the five years to FY28 inclusive (i.e. over Transgrid's next regulatory period) – or 0.7% in real (inflation adjusted) terms (see Table 1.1 and Table 5.3). This WPI forecast includes the SG Increase impacts of -0.3% in each of the 5 years from FY22 to FY26 inclusive.

5.1 CONSTRUCTION WAGES

This section provides forecasts of Transgrid's external or 'out-sourced' 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. Accordingly, we proxy Transgrid's external 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 year. 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 New South Wales are detailed in Table 3.2 and figure 5.4. The Construction sector wage forecasts for Australia are set out in Table 1.1, while the NSW Construction WPI forecasts are set out in Tables 1.1 and 5.3.

Table 5.3. New South Wales: Electricity, Gas, Water & Waste Services and Construction Wage Price Indices

Year Ended June	EGWWS Wage Price Index			Construction Wage Price Index		
	New South Wales (a)			New South Wales (b)		
	Nominal Index	%CH	Real growth %CH (c)	Nominal Index	%CH	Real growth %CH (c)
2009	100.0			100.0		
2010	103.9	3.9	1.6	102.5	2.5	0.2
2011	107.6	3.5	0.4	106.7	4.1	1.0
2012	111.0	3.2	0.9	110.1	3.2	0.9
2013	115.1	3.7	1.4	113.8	3.3	1.0
2014	118.6	3.0	0.3	117.1	2.9	0.2
2015	122.1	3.0	1.3	119.6	2.1	0.4
2016	123.7	1.3	0.0	121.7	1.8	0.4
2017	125.4	1.3	-0.4	124.1	2.0	0.2
2018	127.1	1.3	-0.6	127.4	2.6	0.7
2019	130.3	2.6	0.9	129.9	2.0	0.3
2020	133.6	2.5	1.2	131.9	1.5	0.2
2021	135.7	1.6	0.0	134.7	2.1	0.5
Forecasts						
2022	138.5	2.1	-1.0	137.7	2.2	-0.8
2023	142.3	2.7	0.4	140.7	2.2	-0.1
2024	146.4	2.9	0.5	144.6	2.8	0.3
2025	151.2	3.3	0.8	149.2	3.2	0.7
2026	156.4	3.4	0.9	154.3	3.4	0.9
2027	161.6	3.3	0.8	159.3	3.2	0.7
2028	166.6	3.1	0.6	163.8	2.8	0.3
Compound Annual Growth Rates						
2010-2020	2.5		0.5	2.6		0.5
2021-2028	3.0		0.4	2.8		0.3
2023-2028	3.2		0.7	3.1		0.6

Source: BIS Oxford Economics, ABS

(a) historical data from ABS

(b) historical WPI data from ABS

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

Our forecast is for the Australian Construction WPI to average 2.8% over the seven-year period to FY28 at the national level. Over the five year from FY24 to FY28 inclusive (Transgrid's next regulatory period), Australian Construction WPI growth is forecast to be 3.1% p.a., with NSW construction wages growth forecast to be the same – or 0.6% per annum on average in real (inflation adjusted) terms (see Table 1.1 and Table 5.3). While this is a marked improvement on the past five years, it is still well down on the 4.3% annual national average (nominal terms) of the decade to 2011/12. Note that these wage forecasts for the Construction WPI include the impacts of the SG increase. In the construction industry sector, we estimate the impacts will be -0.3% for each year of the SG increase. See section 4.4 for the assumptions underpinning this estimate.

Construction wages at the national and NSW level have weakened dramatically since 2011/12 and are well below the robust increases during the construction boom. While collective agreements in the sector have maintained their relative high increases over the past 4 years – between 3% and 5% – wages growth in the individual agreements segment have been very weak. Construction employees in the individual agreements segment account for around 61% of construction employees, dominating the method of pay-setting within the sector. Wage growth slowly improved from their lows of 2016, despite weaker engineering construction activity (at the Australian level).

The improvement in construction wages growth was effectively reversed in FY20 as the decline in overall construction activity and related-COVID uncertainty saw a sharp weakening in wages growth, with the Australian Construction WPI actually declining -0.5% (q/q) in the June quarter 2020 (the first decline since the WPI's inception in 1997). It then rebounded over the subsequent four quarters (over FY21), with the Australian Construction WPI growth in FY21 (in year average terms) recording 1.3%. In NSW, the Construction WPI has staged a very strong recovery since declining -0.4% in the June quarter, with FY21 averaging 2.0%, 0.7% above the national Construction WPI. Much higher enterprise bargaining outcomes in NSW will have contributed to this out-performance. Construction wages are forecast to gradually improve from FY22 as construction activity recovers. We expect some deferred increases from 2020 will be provided in 2021, which will boost wages growth in FY22 – moreso in states other than NSW which have a much weaker rebound than NSW.

Australian construction wages are expected to strengthen appreciably over FY24 to FY26, particularly as construction activity levels surpass the previous highs of FY18 and FY13 (in 2024 - see figure 5.4) and serious skills shortages begin to manifest. The increases in construction activity from FY22 will be driven by the recovery in residential building activity which is expected to rise out of its trough from FY23, while higher levels of non-dwelling building and rising engineering construction will also underpin higher wages due to strong labour demand and expected widespread skill shortages in the construction industry. Engineering construction will be driven by a new wave of mining investment and a plethora of publicly funded transport infrastructure projects (particularly in the eastern states of the nation). The growth in NSW construction activity is expected to lag the national average over FY21 and FY22, before marginally outpacing national construction work done over FY23 to FY26, as strong growth comes through in NSW infrastructure projects and both dwelling and non-dwelling building activity stage a healthy recovery. With the other states expected to catch up to NSW in FY22, we expect growth in NSW construction wages to 'come back to the pack', with NSW construction wages to closely track the national average through to FY28.

APPENDIX 1: A NOTE ON DIFFERENT WAGE MEASURES & WAGE MODELS

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

The main wage measures are:

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

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

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

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

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

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

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

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. 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 2019, the minimum wage was increased by 3.1%. This followed rises of 3.5%, 3.3% and 2.4% respectively in July 1 of 2018, 2017 and 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, but only 1.5% of Electricity, Gas, Water & Waste Services' (EGWWS) employees.

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

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

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

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

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

The 'bottom-up' approach to wage forecasting is complemented by a more formalised 'top-down' macroeconomic modelling framework – to ensure an overall macroeconomic consistency with output, employment, productivity and price variables. The top-down macroeconomic modelling methodology becomes more relevant beyond the next 2-3 years.

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