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Economic forecasts 2023/24

Prepared for the Australian Energy Market Operator Limited

3 April 2024

Deloitte Access Economics

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3 April 2024

Dear Debborah

Economic forecasts 2023/24

Thank you for asking Deloitte Access Economics to prepare a suite of long-term macroeconomic forecasts to be used in the preparation of the Australian Energy Market Operator Limited's long term energy consumption forecasts.

This report presents the economic forecasts that Deloitte Access Economics has been engaged to provide, along with the modelling methodology and key assumptions.

The macroeconomic forecasts presented in this report were finalised in February 2024. The forecasts do not take into account data released after the Australian Bureau of Statistics September quarter 2023 National Accounts (released in December 2023).

Yours sincerely

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About Deloitte Access Economics

Deloitte Access Economics is one of Australia's most recognised economics advisory practices. Our team is a leader in policy, regulatory, health economics and strategic advisory, as well as forecasting and modelling services that provide detailed business insights ranging across sectors and regions. We provide services to a wide range of government and private sector clients throughout Australia, Asia Pacific and globally as a member of Deloitte's global economics network.

Access Economics has set the benchmark for economic analysis and insight in Australia. In early 2011, the directors and staff of Access Economics joined Deloitte. The team's impressive track record and reputation for independence, integrity and authority place it at the apex of government and business advisory, helping to shape public policy, business insights and investment strategy at the highest levels.

This report has been completed by the Macroeconomic Policy and Forecasting team. The team of specialist modelling practitioners provides modelling and economic consulting services to assist clients to determine the impact of potential economic, policy and other changes on their business, industry, and region.

Data presented in this report

Deloitte Access Economics has prepared this report and the forecasts on which it is based using historical data from a variety of sources, including the Australian Bureau of Statistics. Deloitte Access Economics has not verified any historical data and makes no warranties as to its accuracy or validity.

Completion of forecasts

The macroeconomic forecasts and market analysis presented in this report were finalised by Deloitte Access Economics in February 2024. This information, including the historical and forecast macroeconomic data, does not take into account any information available after this time.

To the extent that this report relates to any forecasts or projections we do not provide any assurance on the reliability of the forecasts or projections or the underlying assumptions. Forecasts and projections relate to the future and, as a result, they may be affected by unforeseen events. Accordingly, actual results are likely to be different from forecast or projected results because events and circumstances frequently do not occur as expected, and those differences may be material. Events may have occurred since we prepared this report which may affect its conclusions.

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Glossary

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AEMO	Australian Energy Market Operator Limited
AUD	Australian dollar
CAGR	Compound Annual Growth Rate
CER	Consumer Energy Resources
CPI	Consumer Price Index
DAEM	Deloitte Access Economics Macroeconomic model
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DSP	Demand Side Participation
ESOO	Electricity Statement of Opportunities
EV	Electric Vehicle
GDP	Gross Domestic Product
GSOO	Gas Statement of Opportunities
GSP	Gross State Product
GVA	Gross Value Added
HDI	Household Disposable Income
IASR	Inputs, Assumptions and Scenarios Report
IEA	International Energy Agency
IGR	Intergenerational Report
IPCC	Intergovernmental Panel on Climate Change
NEM	National Electricity Market
NGFS	Network for Greening the Financial System
NSW	New South Wales
NT	Northern Territory
NZE	Net Zero Emissions
RBA	Reserve Bank of Australia
RCP	Representative Concentration Pathway
SDS	Sustainable Development Scenario
SFD	State Final Demand
STEPS	Stated Policies Scenario
UN	United Nations
USD	United States dollar
VPP	Virtual Power Plant

Executive summary

Deloitte Access Economics has been engaged by the Australian Energy Market Operator Limited (AEMO) to develop long term macroeconomic forecasts for Australia across three distinct scenarios outlined in AEMO's 2023 Inputs, Assumptions, and Scenarios Report (IASR). The three scenarios — Step Change, Progressive Change, and Green Energy Exports — outline possible demographic, economic and decarbonisation pathways for Australia. Each scenario is mapped to a broader global macroeconomic context and decarbonisation pathway.

The macroeconomic forecasts are to be used in the preparation of AEMO's long term energy consumption forecasts published in the Electricity Statement of Opportunities (ESOO) and Gas Statement of Opportunities (GSOO). The forecasts cover economic indicators at the national level and across all states and territories in Australia. The dataset that accompanies this report covers historical and forecast data across all three scenarios.

Deloitte Access Economics has developed these forecasts using a large-scale macro-econometric model that allows for the development of a consistent set of forecasts at the national, state and territory, and industry levels. Upstream models that quantify key assumptions around the global economy, demographics, and climate change are used as inputs to the macro-econometric model. These include an associated cohort-component demographic model and a climate integrated assessment model.

Step Change as the central scenario

Deloitte Access Economics uses the Step Change scenario as a central scenario in developing these forecasts. The Step Change scenario assumes moderate global economic growth and improved international coordination in terms of climate change policy. Step Change maps to the International Energy Agency's (IEA) Sustainable Development Scenario (SDS) and to the Intergovernmental Panel on Climate Change's (IPCC) Representative Concentration Pathway (RCP) 2.6 where relevant. At the domestic level, the Step Change scenario assumes that the demographic and economic drivers of Australia's economy follow a moderate path.

In terms of the domestic response to climate change, this scenario represents an acceleration in the pace of the transition, particularly in the energy sector. Investments in decarbonisation are expected to increase at a faster pace than currently observed, leading to faster and deeper cuts to emissions across the economy than otherwise expected. The economy is projected to adhere to a future target net emissions pathway — one that is consistent with Australia contributing to global temperature rises of less than 2°C compared to pre-industrial levels, whilst also meeting the commitments of the Paris Agreement.

Deloitte Access Economics incorporates these elements into the modelling of the Step Change scenario by following four broad steps.

1. A future demographic pathway is modelled based on key assumptions for net overseas migration, the total fertility rate, and life expectancy. These assumptions are broadly comparable to the Australia Bureau of Statistics' (ABS) 'Medium' scenario in the latest population projections release. The level of net overseas migration to Australia is forecast to average 250,000 persons per annum over the medium and longer term while the total fertility rate is forecast to fall from an estimated 1.62 in 2022-23 to 1.58 by the end of the forecast period in 2055-56. This aligns with the projected ageing of Australia's population.
2. The Step Change scenario assumes long term productivity growth of 1.2% per annum (before considering the effect of specified climate change related parameters on productivity). This is in line with the level specified in the base case for the 2023 Intergenerational Report and is above the average observed in the two decades to 2022-23.
3. The modelled demographic pathway and long run productivity assumption are used as inputs into the macro-econometric mode, which is used to determine a range of other economic variables such as real household disposable income and the exchange rate.

4. Implications of climate change and associated economic and technological changes are incorporated. Physical damages from climate change that map to RCP 2.6 are produced using methodology from Roson and Sartori (2016) with further development by Deloitte Access Economics.[i] These physical damages are added into the macroeconomic modelling. Finally, elements of the expected transition pathway are incorporated based on the key assumption that the target net emissions pathway required to meet short term and longer term climate commitments is not exceeded at any time over the forecast period. This constrains economic growth and alters the structure of the economy to ensure that Australia meets its goals of reducing net greenhouse gas emissions by at least 43% from 2005 levels by 2030 and achieving net zero emissions by 2050.

Key results in the Step Change scenario

In 2024, the global economy is forecast to enter a delicate stage of its post-pandemic rebalancing. Growth is likely to slow below trend before continued disinflation and an eventual easing of monetary policy returns economic activity to a more sustainable path.

Against this backdrop, real gross domestic product (GDP) in Australia is projected to slow over the short run before a recovery sets the economy on a more balanced path. Growth over the medium to long term is driven by a combination of population growth, labour force participation and productivity. The growth profile at the national level filters through to states and territories, and industries.

In the Step Change scenario:

- Australia's population increases at a compound average growth rate (CAGR) of 1.2% across the forecast period (refer to Chart i: Population forecast for all scenarios)
- Real GDP in the Step Change scenario increases at a CAGR of 1.9% across the forecast horizon (refer to Chart ii: Real gross domestic product growth forecast for all scenarios)
- Real household disposable income tracks a combination of productivity growth (and therefore wage growth), population growth, employment and inflation to increase at an average annual rate of 1.8% through the forecast period
- The Australian dollar gradually appreciates to 70 US cents before stabilising at that level over the forecast period
- Services sectors underpin the economy by outpacing overall real GDP growth. Sectors which are relatively emissions-intensive, including the components of industrial production, come under pressure from both physical and transition risks associated with climate change. Deloitte Access Economics' modelling imposes the hard constraint of the target net emissions pathway. This approach forces further reductions in emissions and economic activity to ensure the target net emissions pathway is not exceeded (refer to Chart iii: Real gross value added, Industrial production and services growth forecast for all scenarios)
- States and territories in which the economic profile is strongly influenced by emissions intensive sectors, such as Western Australia, Queensland and the Northern Territory, experience slower economic gains than underlying fundamentals such as population growth and labour force participation would suggest.

Green Energy Exports and Progressive Change

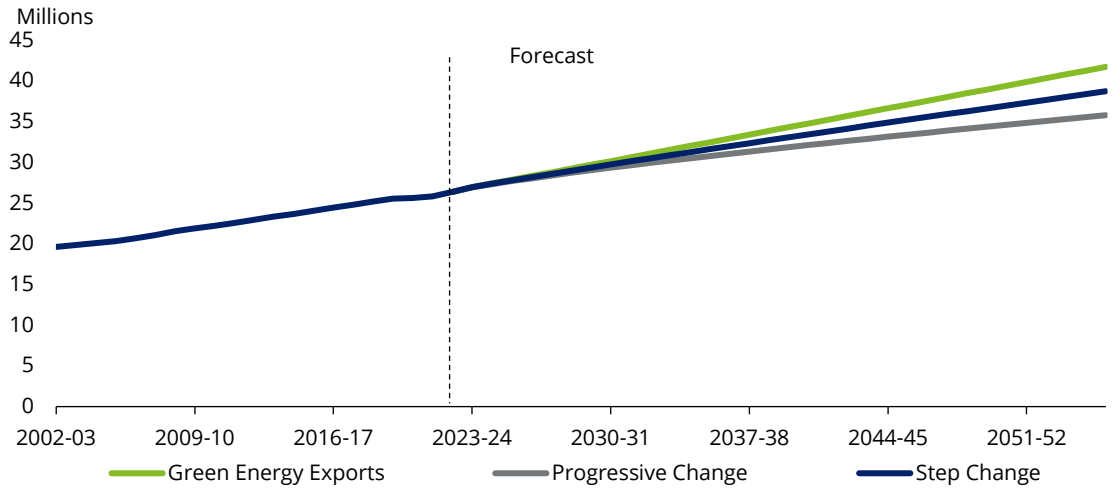
The Green Energy Exports scenario and the Progressive Change scenario are modelled in the same manner as the Step Change scenario using differing input assumptions.

The Green Energy Exports scenario presents an upside possibility to the Step Change scenario. In this scenario, the global economy grows at a relatively fast rate, and global climate change policy is well-coordinated. Australia's demographic and economic drivers follow a higher growth path.

The domestic population and economy are larger and grow faster in this scenario. A surge in clean energy technology and active participation from consumers and businesses result in Australia meeting its net-zero commitment well before 2050.

Unlike the Step Change scenario, the target pathway for net emissions does not impose a constraint because the national emissions profile tracks well below this pathway. Capital expenditure increases sharply as Australia builds renewable energy capacity at scale. Some part of this renewable energy capacity is used to manufacture green hydrogen for domestic use and overseas export.

Chart i: Population forecast for all scenarios



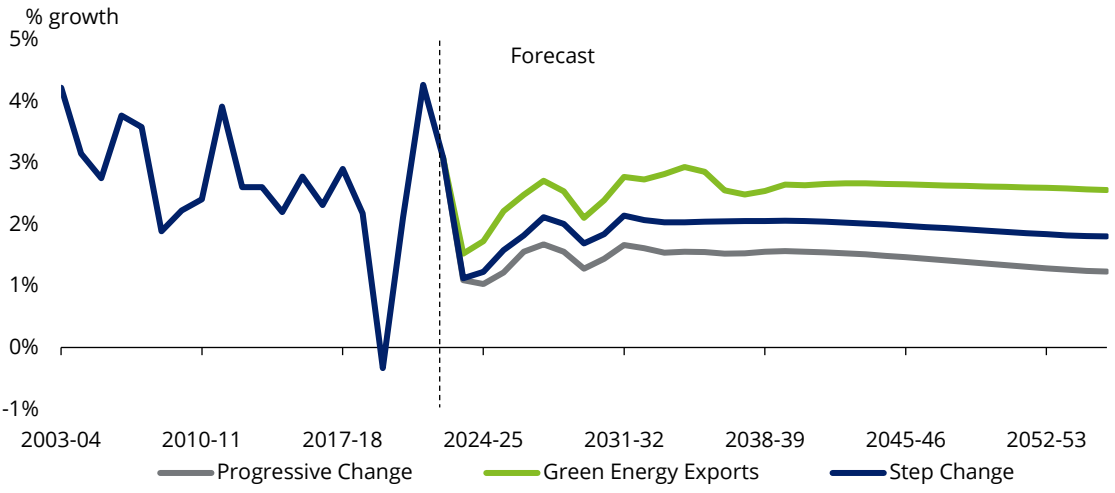
Source: Australian Bureau of Statistics (2023e), Deloitte Access Economics

In the Green Energy Exports scenario:

- Australia's population is 3 million persons larger in 2055-56 than in Step Change. Population grows at a CAGR of 1.4%, slightly faster than the 1.2% forecast in Step Change
- Real GDP grows at a CAGR of 2.5%, faster than the 1.9% forecast in Step Change
- A larger and greener economy and faster growth is reflected in the forecast for states and territories.

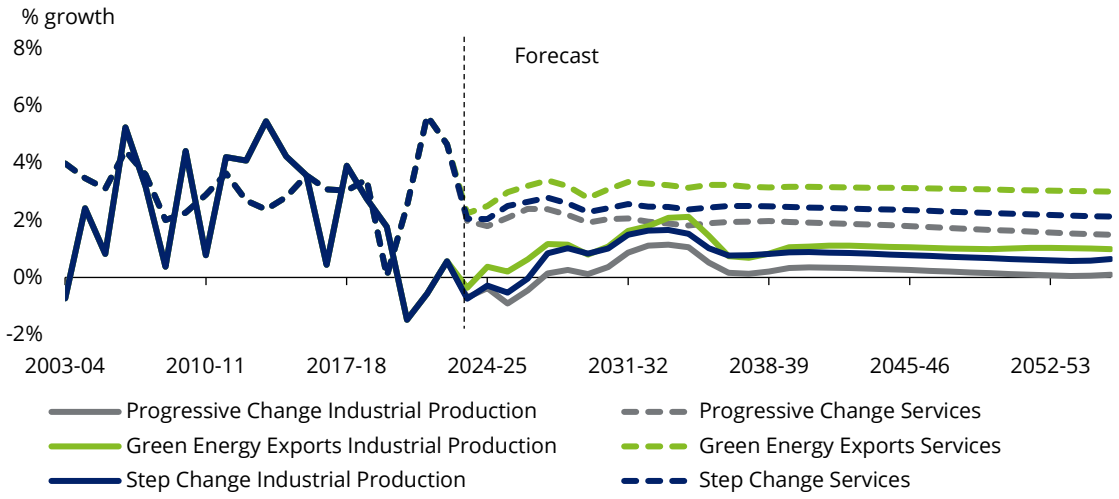
The Progressive Change scenario presents a downside alternative to the Step Change scenario. In this scenario the global economy grows at a slower pace and climate change policy is less coordinated. Australia's demographic and economic drivers follow a slower growth path and domestic efforts to decarbonise do not accelerate beyond the current rate. These factors result in slower economic growth. Additionally, the risk that the national net emissions profile exceeds the target pathway for net emissions during the forecast period is elevated relative to the Step Change scenario. This is because Australia's efforts to decarbonise are generally less ambitious and effective than in the Step Change scenario. The hard constraint on net emissions weighs on certain sectors of the economy and forces output to decrease further or grow at a slower rate. A combination of these factors results in a smaller economy at the end of the forecast period.

Chart ii: Real gross domestic product growth forecast for all scenarios



Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

Chart iii: Real gross value added, Industrial production and services growth forecast for all scenarios



Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

In the Progressive Change scenario:

- Australia's population is nearly 3 million persons smaller in 2055-56 than in Step Change. Population grows at a CAGR of 0.9%, slower than 1.2% in Step Change
- Real GDP grows at a CAGR of 1.4%, slower than 1.9% in Step Change
- A smaller economy with a potentially higher net emissions profile and slower growth is reflected in the forecast for states and territories.

The charts shown throughout this Executive Summary, along with the table on the following page, provide a snapshot of Deloitte Access Economics' macroeconomic forecasts for each of the three scenarios.

Table i: National forecast summary for all scenarios

	History	Forecast				
	2022-23	2025-26	2035-36	2045-46	2055-56	Forecast period*
Step Change						
Gross domestic product						
$ billions	$2,405	$2,501	$3,044	$3,724	$4,484	
CAGR over previous decade	2.4%	2.0%	2.0%	2.0%	1.9%	1.9%
Household disposable income						
$ billions	$1,395	$1,463	$1,792	$2,166	$2,538	
CAGR over previous decade	1.6%	1.5%	2.1%	1.9%	1.6%	1.8%
AUD:USD exchange rate						
$A/$US	$1.49	$1.40	$1.42	$1.42	$1.42	
Change over previous decade	4.3%	0.2%	0.2%	0.0%	0.0%	-0.1%
Population						
Persons (millions)	26.4	27.8	31.6	35.2	38.7	
CAGR over previous decade	1.4%	1.5%	1.3%	1.1%	1.0%	1.2%
Green Energy Exports						
Gross domestic product						
$ billions	$2,405	$2,540	$3,294	$4,267	$5,519	
CAGR over previous decade	2.4%	2.2%	2.6%	2.6%	2.6%	2.5%
Household disposable income						
$ billions	$1,395	$1,487	$1,926	$2,472	$3,148	
CAGR over previous decade	1.6%	1.6%	2.6%	2.5%	2.4%	2.5%
AUD:USD exchange rate						
$A/$US	$1.49	$1.39	$1.40	$1.40	$1.40	
Change over previous decade	4.3%	0.1%	0.1%	0.0%	0.0%	-0.2%
Population						
Persons (millions)	26.4	27.9	32.5	37.1	41.8	
CAGR over previous decade	1.4%	1.5%	1.5%	1.3%	1.2%	1.4%
Progressive Change						
Gross domestic product						
$ billions	$2,405	$2,487	$2,899	$3,375	$3,852	
CAGR over previous decade	2.4%	2.0%	1.5%	1.5%	1.3%	1.4%
Household disposable income						
$ billions	$1,395	$1,455	$1,719	$1,999	$2,211	
CAGR over previous decade	1.6%	1.4%	1.7%	1.5%	1.0%	1.4%
AUD:USD exchange rate						
$A/$US	$1.49	$1.41	$1.44	$1.44	$1.44	
Change over previous decade	4.3%	0.2%	0.2%	0.0%	0.0%	-0.1%
Population						
Persons (millions)	26.4	27.7	30.8	33.4	35.8	
CAGR over previous decade	1.4%	1.4%	1.1%	0.8%	0.7%	0.9%

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023d, 2023e), Reserve Bank of Australia, Deloitte Access Economics

1 Introduction

1.1 Background and scope

Deloitte Access Economics has been engaged to deliver a suite of economic forecasts to be used in the preparation of the Australian Energy Market Operator Limited's (AEMO's) long-term energy and demand forecasts. The forecasts presented in this report are inputs to AEMO's 2024 Electricity Statement of Opportunities (ESOO) and Gas Statement of Opportunities (GSOO). Forecasts are provided for all states and territories, for the variables listed in the table below.

Table 1.1: Forecast variables by jurisdiction

Jurisdiction	Forecast variables
1. Australia	Gross domestic product (GDP) Gross value added (GVA) by industry Household disposable income (HDI) AUD:USD exchange rate Population
2. States and territories	Gross state product (GSP) State final demand (SFD) GVA by industry (including industrial production and its components) HDI Population Dwelling forecast (by dwelling category)

Note: Industries as defined by the Australian and New Zealand Standard Industrial Classification (ANZSIC) used by the Australian Bureau of Statistics (ABS). Industrial production is an aggregate measure of mining, manufacturing, and electricity, gas, water and waste services (utilities) industry activity.

Deloitte Access Economics has modelled three scenarios, Step Change, Green Energy Exports and Progressive Change. The scenarios align with the assumptions described in AEMO's 2023 Inputs, Assumptions and Scenarios Report (IASR), as well as the 2024 Integrated System Plan. The forecasts have been developed using the Deloitte Access Economics Macroeconomic (DAEM) Model of the Australian economy. The DAEM Model is a large-scale macro-econometric model that allows for the development of a consistent set of forecasts at the national, state and territory, and industry levels.

Historical data incorporates the period from 2002-03 to 2022-23 and forecast data for the period from 2023-24 to 2055-56. The key data sources used by Deloitte Access Economics are listed in the table below.

Table 1.2: Data sources

Variable	Data source	Release date
GDP and GSP	ABS – Australian National Accounts: State Accounts 2022-23[ii]	21/11/2023
SFD	ABS – Australian National Accounts: National Income, Expenditure and Product September 2023	6/12/2023
HDI	ABS – Australian National Accounts: National Income, Expenditure and Product September 2023	6/12/2023
Population	ABS – National, state and territory population June 2023	14/12/2023
Dwelling completions	ABS – Building Activity, Australia September 2023[iii]	17/01/2024
GVA by industry	ABS – Australian National Accounts: National Income, Expenditure and Product September 2023	6/12/2023
Consumer price index (CPI)	ABS – CPI, Australia December Quarter 2023	31/01/2024
AUD:USD exchange rate	Reserve Bank of Australia (RBA) – Statistical Tables[iv]	31/12/2023

1.2 Structure of this report

The remainder of this report is structured as follows:

- Chapter 2: Overview of the scenarios – Defines the modelled scenarios, outlines the forecast methodology adopted by Deloitte Access Economics, and summarises the forecast results across all three scenarios.
- Chapters 3-5: Scenario descriptions and forecasts – Presents forecasts for Australia and all states and territories across the Step Change, Green Energy Exports and Progressive Change scenarios respectively. The chapters also detail the assumptions used in the scenario modelling.
- Conclusion – Summarises the key themes and results of the modelling described in this report.
- Appendix A: Comparison to other forecasts – Outlines how the forecasts presented in this report compare to other publicly available forecasts.
- Appendix B: Summary tables – Includes summary tables of the state and territory industry forecasts developed by Deloitte Access Economics.

2 Overview of the scenarios

2.1 Defining the scenarios

Deloitte Access Economics has prepared forecasts for three scenarios specified by AEMO: Step Change, Green Energy Exports and Progressive Change. The scenarios provide a balanced consideration of the potential future decarbonisation pathways for Australia. National decarbonisation targets are met under all three scenarios, but there are differences in the pace of the transition. These differences allow for an analysis of the future path for the Australian economy and demands on the National Electricity Market (NEM) amid uncertainty regarding the pace of decarbonisation. The three scenarios incorporate a range of differing assumptions related to the pace of population and economic growth, the degree of policy coordination, the rate of technology use and improvements in energy efficiency, and climate change. The three scenarios are described below and key parameters for each of the scenarios are outlined in Table 2.1.

Step Change

The Step Change scenario is the central scenario in this report. It incorporates moderate economic and population growth assumptions and includes an acceleration in the pace of the transition in the energy sector to support an economy-wide transition to net zero emissions. It represents a future pathway of limiting temperature rise to below 2°C compared to pre-industrial levels, while meeting the commitments of the Paris Agreement.

Moderate growth in the global and Australian economies supports the development and uptake of technologies required to drive the energy transition. The cost of renewable energy investments is assumed to continue falling, while there is strong appetite and willingness to invest in technologies such as consumer energy resources (CER) and electric vehicles (EVs). There are also improvements in energy efficiency and a greater level of consumer engagement via the use of virtual power plants (VPPs) and demand side participation (DSP).

The level of hydrogen production is assumed to remain relatively low and largely focused on domestic use, while there are modest supply chain barriers compared to other scenarios.

Green Energy Exports

The Green Energy Exports scenario involves a faster pace of economic and population growth compared to the Step Change scenario. The Green Energy Exports scenario involves rapid action towards decarbonisation, with a temperature rise limited to 1.5°C compared to pre-industrial levels. Larger falls in the cost of technology facilitate the expansion of 'green commodity' exports such as hydrogen.

The Green Energy Exports scenario assumes a higher degree of electrification and investment in energy efficiency compared to other scenarios. The ramp-up in production of hydrogen supports a more accelerated decarbonisation of the transport industry, while the export of green commodities supplements the forecast decline of more carbon-intensive energy exports such as coal.

Progressive Change

The Progressive Change scenario assumes ongoing challenges that limit the pace of decarbonisation. Australia is expected to deliver on existing emissions reduction commitments, but the pace of change is unlikely to be consistent with the level required to limit the temperature rise to 2°C compared to pre-industrial levels.

The Progressive Change scenario outlines slower growth in the global and Australian economy compared with the Step Change and Green Energy Exports scenarios. Ongoing disruptions are expected to affect international energy markets and associated supply chains. The more challenging economic backdrop weighs on the pace of investment in the energy transition. Weaker income growth and smaller reductions in the cost of technology are expected compared to other scenarios. This results in a slower uptake of CER and weaker consumer investment in energy efficiency when compared to the Step Change and Green Energy Exports scenarios.

Table 2.1: Key parameters, by scenario

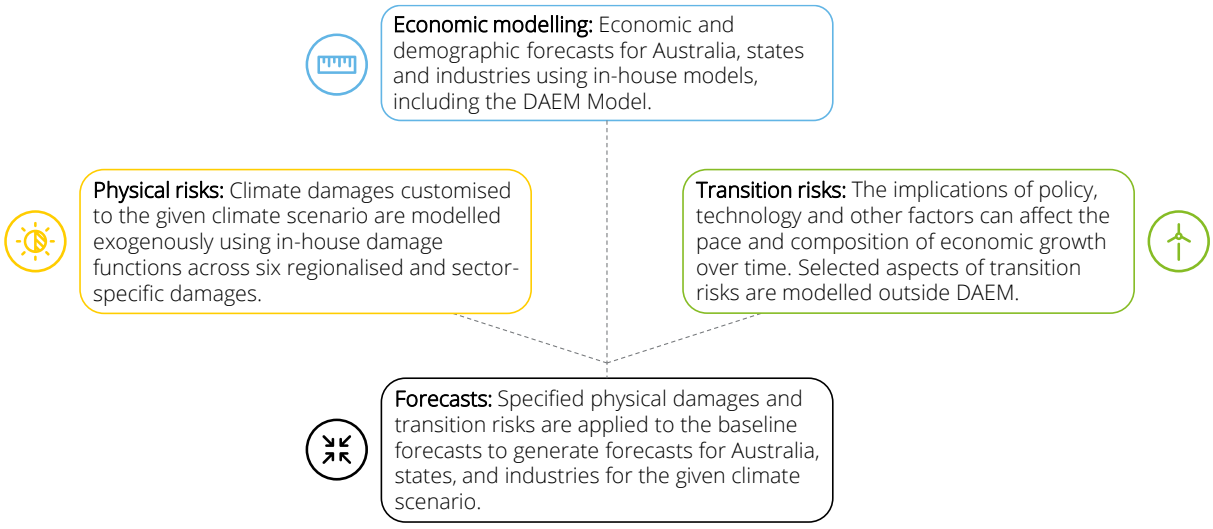
Parameter	Green Energy Exports	Step Change	Progressive Change
Emissions reduction target by 2030	At least 43%	At least 43%	At least 43%
Temperature increase by 2100	~1.5°c	~1.8°c	~2.6°c
Global economic growth and policy coordination	High growth, strong coordination	Moderate growth, strong coordination	Lower growth, lower coordination
Australian economic and demographic drivers	High	Moderate	Low
Rate of technological advancement	High, significant development in hydrogen technology as well as VPP/CER	High, increasing prevalence of VPP/CER	Lower
Hydrogen use	Faster cost reduction. High production for domestic and export use	Medium-Low production for domestic use, with minimal export hydrogen	Low production for domestic use, with no export hydrogen
Energy efficiency	Higher	Moderate	Lower
Supply chain barriers	Less challenging	Moderate	More challenging
IEA 2021 World Energy Scenario	Net Zero Emissions (NZE)	Sustainable Development Scenario (SDS)	Stated Policies Scenario (STEPS)
Equivalent Representative Concentration Pathway Scenario	RCP1.9	RCP2.6	RCP4.5

Source: AEMO 2023 Inputs, Assumptions and Scenarios Report

2.2 Forecast methodology

The forecasts have been developed using the DAEM Model as well as upstream input models that quantify key assumptions around the global economy, demographics, and climate change. A summary of Deloitte Access Economics' modelling methodology is described in Figure 2.1 below.

Figure 2.1: Key components of the modelling approach

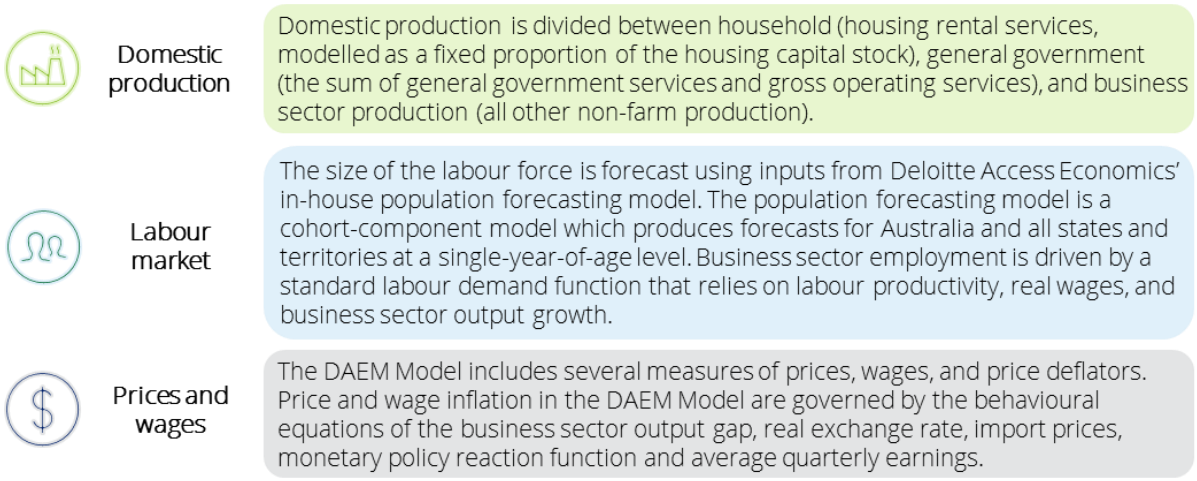


2.2.2 Economic and demographic forecasts

The economic and demographic forecasts have been developed using the DAEM Model of the Australian economy and an associated cohort-component demographic model. The DAEM Model is a macro-econometric model of the Australian economy made up of numerous accounting identities and behavioural equations which describe the aggregate actions of households, businesses, government, and the global economy. The formulation of these behavioural equations is based on mainstream economic theory. The model is best described as a small open economy model in which all foreign (world) prices and interest rates are taken as given (that is, they are exogenous to the model).

The DAEM Model covers all elements of the economy including production, demographics and the labour market, imports and exports, financial markets, prices, and wages. Three key components of the model are described in more detail in the figure below.

Figure 2.2: Key components of the Deloitte Access Economics Macroeconomic Model



A set of key demographic and macroeconomic assumptions are made for each scenario. These include differing assumptions with respect to net overseas migration and total fertility, which affect forecast population growth. The resulting higher or lower population forecast increases or decreases the potential of the Australian economy. Assumptions are also made regarding the pace of productivity growth in the Australian economy.

Industry output is determined using forecasts of industry final demand which indicate the total value of goods and services produced by a specific industry. For example, an increase in commodity exports in response to international demand will generate an increase in mining output. Similarly, an increase in dwelling investment in response to low interest rates will generate an increase in construction output.

Business cycle dynamics play a significant role in the short and medium term. However, supply side dynamics determine the long run forecasts. The key supply side drivers of the long run growth path are population, participation, labour productivity growth and capital intensity.

At the state level, GSP is determined by distributing GDP based on state and territory GSP and population relativities. GSP relativities are influenced by the industrial structure within each jurisdiction. For instance, an increase in global growth and subsequent demand for mining output will result in a more-than-proportionate increase in GSP for the mining-intensive jurisdictions such as Western Australia and Queensland.

Industry output by state and territory is determined by a combination of industry output at the national level, and a range of economic variables, including GSP, consumption and investment. Industry relativities between jurisdictions are also utilised. For example, Victoria has a relatively higher share of manufacturing output when compared to the national manufacturing share of total output. This means that if manufacturing output is forecast to decline nationally, a larger portion of that decline will be felt in Victoria. The industry output forecasts are then normalised to ensure that output across jurisdictions adds to the national total, while GVA across jurisdictions adds to total GSP (after allowing for other items in the national accounts framework such as ownership of dwellings and taxes less subsidies).

2.2.3 Climate change modelling and assumptions

Climate change refers to long term shifts in temperatures and weather patterns that can be caused due to natural phenomena. However, since the 1800s, human activity has been the main driver of climate change. A sharp increase in the emission of greenhouse gases due to the burning of fossil fuels has resulted in the average temperature of the Earth's surface increasing 1.1°C relative to the 1800s (pre-industrial revolution), with the previous decade (2011-2020) being the warmest decade on record.[v]

The implications of climate change are all-encompassing. Effects on weather patterns and on human health translate into effects on the economy. Climate change affects both supply and demand in an economy.[vi] For instance, steadily rising temperatures can result in erratic weather patterns that destroy land and property, heat stress erodes labour productivity, and rising sea levels threaten livelihoods along coastal areas.[1] These effects tend to diminish the potential supply capacity in an economy. The extent to which an economy's ability to produce output is eroded depends on the scale and pace at which the average temperature of the Earth's surface is forecast to rise.

Climate change also influences the nature of demand in an economy. For instance, tourists are likely to take stock of climate risks while travelling, and consumers are more likely to choose cleaner energy alternatives as renewable energy costs become more competitive. The degree to which climate change influences demand and supply in the economy is likely to depend on various factors including policy targets, industry goals, technology innovation, and the pace at which consumers adopt new technology.

Given the broad range of possibilities that climate change presents in terms of the implications for both supply and demand over varied time periods, there is considerable uncertainty regarding the degree to which climate change will affect the economy. Macroeconomic modelling of climate change is therefore regularly linked to a corresponding pathway for global warming and policy action defined by the International Energy Agency (IEA), the United Nations' Intergovernmental Panel on Climate Change (IPCC), the Network for Greening the Financial System (NGFS), or other organisations such as domestic governments.

Deloitte Access Economics' modelling splits the effects of climate change into two categories – physical risks and transition risks. This is in keeping with the broad consensus within literature on the consequences of climate change. For example, approaches used by the Reserve Bank of Australia, the Federal Reserve, the European Central Bank, and the Bank of England, separate the effects of climate change into 'physical risks' and 'transition risks'.[vii] The physical and transition risks presented by climate change act on the forecast growth path for the Australian economy predominantly via labour productivity and capital intensity. The effects of climate change on the global economy also act on the Australian economy through the exports channel. The aggregate knock-on effects, as well as the risks and opportunities presented by the transition away from hydrocarbons to cleaner sources of energy, result in changes in industry structure.

Physical risks

Physical risks associated with climate change in Australia cover the damages that are likely to affect land, labour, and capital in the country. Deloitte Access Economics accounts for these physical risks by estimating potential damages using a set of in-house models.

An emissions pathway or climate scenario is used to model physical damages via a set of damage functions. Climate change damage functions are models that relate climate change to economic effects and form the basis of quantitative modelling of climate change. The damage functions that Deloitte Access Economics uses rely primarily on inputs from Roson and Sartori (2016) but are also subject to regular review and development by Deloitte Access Economics.

Deloitte Access Economics' modelling includes six regional and sector-specific damages:

1. Heat stress damages to labour productivity
2. Human health damages from disease and mortality
3. Sea-level rise damages to land and capital stock
4. Capital damages (from repeated expenditure on repairs rather than new investment) to capital productivity

[1] According to the United Nations about 40% of the world's population lives within 100 kilometres of a coastline

5. Agricultural damages from changes in crop yields
6. Tourism damages to net inflow of foreign currency.

Estimates of climate-related physical damages are aggregated from the regional level to the state and national level and incorporated into the DAEM Model using several assumptions. The assumptions include:

1. Human health damages and heat stress damages erode labour productivity. Heat stress affects all industries. However, productivity in primary industries such as agriculture and mining are affected to a greater degree than productivity in secondary and tertiary industries. This is because the nature of work in primary and secondary industries involves a greater degree of outdoor exposure relative to tertiary industries.
2. Chronic capital damages and sea-level rise damages to land and capital stock affect the capital intensity in an economy which indirectly influences labour productivity.
3. Agricultural damages from diminished crop yields affect agricultural exports since 70% of Australian agricultural output is exported.
4. Physical damages have implications for inbound tourism, which affects Australia's services exports.

The physical damages associated with a particular emissions pathway predominantly alter the potential supply capacity in an economy over the medium to long run period.

Transition risks

Transition risks arise from the mitigating actions taken in response to climate change. These actions, and the risks that arise because of them, map to both supply and demand elements in the economy. Mitigating actions can include policy and regulatory change, technological developments, or shifting consumer preferences, both in Australia and overseas. These complex factors are likely to make production and consumption less carbon-intensive over time, thereby leading to changes in both the structure and size of the economy.

In the Step Change and Progressive Change scenarios, the AEMO's assumption that there is no temporary overshoot of the target net emissions pathway is a binding constraint on emissions and economic activity. As a result, economic structure is forced to change. Despite marked changes in consumer energy consumption patterns in the Step Change scenario, and continued investment in clean energy technology in the Progressive Change scenario, emissions and output in hard-to-abate sectors come under pressure.

Data on emissions intensity by industry – measured in terms of kilograms of carbon dioxide equivalent gas emitted per dollar of industry GVA – are drawn from the latest Federal Government data and projections published by the Department of Climate Change, Energy, the Environment and Water (DCCEEW)[2]. When combined with forecasts of economic activity by industry, historical and forecast data on emissions intensity enables total emissions to be calculated and compared to Australia's policy commitments. The assumption across all scenarios is that Australia meets its goals of reducing net greenhouse gas emissions by at least 43% from 2005 levels by 2030, and achieving net zero emissions by 2050, without exceeding the target net emissions pathway at any stage.

In the Green Energy Exports scenario, the target net emissions pathway serves as a guide but does not constitute a constraint to economic activity because, unlike in the Step Change and Progressive Change scenarios, the economy's net emissions profile betters the target pathway. Lower net emissions in this scenario are underpinned by greater use of renewables to produce hydrogen which, along with an accelerated expansion in renewable energy capacity, is used to decarbonise the domestic economy. Hydrogen is also exported as the global economy decarbonises.

2.3 Forecast summary

In the near term the economy slows across all scenarios due to the lagged effect of tight monetary policy, cost of living challenges and weakness in dwelling construction activity. As demand and supply in the economy move towards a better balance, monetary policy is projected to ease, and growth is expected to accelerate. Beyond

[2] The latest projections, released in November 2023, are available at the following link: https://www.dcceew.gov.au/climate-change/publications/australias-emissions-projections-2023

the near term, variations in demographic profiles, labour productivity paths, and decarbonisation pathways result in divergent economic futures across the three scenarios.

In the Step Change scenario, economic growth over the forecast period is more modest than growth in the decade prior to the COVID-19 pandemic. An ageing population weighs on growth and contributes to a downward trend in the total fertility rate. Net migration does not completely counterbalance the slowdown in fertility, so population growth slows as a result.

Assumptions around population growth in this scenario broadly align with the 'medium' scenario projections published by the ABS (2023c).[viii] Slowing population growth translates to slowing growth in the labour force. Long term labour productivity growth is initially assumed to track the historical average. However, the physical and transition risks presented by climate change drag labour productivity lower. Relatively slow growth in population and moderate growth in labour productivity translates into real GDP growing at a CAGR of 1.9% over the forecast period. This growth profile filters through to states and industries. However, the constraints imposed by adhering to Australia's decarbonisation commitments forces output in hard-to-abate sectors to grow at a slower rate than the overall economy.

The Green Energy Exports scenario is driven by more favourable assumptions around population and economic growth relative to Step Change. The total fertility rate, net overseas migration, and labour productivity trend higher than in recent history. These assumptions result in a faster pace of GDP growth over the forecast period. The adverse effects of climate change are also less damaging in comparison to the Step Change scenario. This is because a combination of policy and technology drives a surge in clean energy. Economic activity shifts from hard-to-abate sectors such as mining to other sectors of the economy, including services sectors which also gain from a larger and more productive labour force. Investment in renewable energy infrastructure and hydrogen production supports the construction, manufacturing, and utilities sectors. A quicker and more coordinated global drive to decarbonise also results in Australia exporting hydrogen to global markets. Australia's economy grows at a CAGR of 2.5% over the forecast period.

The Progressive Change scenario is a downside scenario in which population growth and labour productivity slow more sharply than in the Step Change scenario. Efforts to mitigate the adverse effects of climate change are also less coordinated in the Progressive Change scenario. As a result, a smaller and less productive economy also contends with a heavier climate change burden. Some industries that are more vulnerable to the effects of climate change are hit harder than others by physical impacts such as elevated heat stress, rising sea levels, and more frequent extreme weather events. The economy grows well below trend through the forecast period, recording a CAGR of just 1.4%.

3 Step Change

3.1 Overview of the scenario

3.1.1 Scenario narrative

The Step Change scenario provides the central scenario in this report. The Step Change scenario assumes an acceleration in the pace of the transition in the energy sector to support an economy-wide transition to net zero emissions. It assumes a faster pace of decarbonisation compared to the Progressive Change scenario and a slower pace compared to the Green Energy Exports scenario.

Investments in decarbonisation under the Step Change scenario are expected to increase at a faster pace than currently observed, leading to faster and deeper cuts to emissions across the economy than otherwise expected. This presents a future pathway of limiting global temperature rises to less than 2°C compared to pre-industrial levels, whilst meeting the commitments of the Paris Agreement.

The NEM is expected to lead efforts to decarbonise. The rapid transformation of the energy sector is facilitated by assumed falls in the cost of renewable energy investments, as well as a strong appetite and willingness to invest in CER and EVs. It is also assumed that there are material improvements in energy efficiency as consumers and businesses invest in more efficient buildings, appliances and other tools that help them to manage energy use.

The relatively rapid pace of decarbonisation in the electricity sector may be compatible with limiting temperature rises to 1.5°C, but only if significant complementary action was taken by other industries across the Australian economy.

The Step Change scenario assumes moderate growth in the global and Australian economies that supports the development and uptake of technologies required to drive the energy transition.

The level of hydrogen production is assumed to remain relatively low and largely focused on domestic use, while there are modest supply chain barriers compared to other scenarios.

3.1.2 Economic and demographic assumptions

Deloitte Access Economics uses several key assumptions when producing forecasts for the Australian population and economy in the Step Change scenario. For population, this includes changes to the level of net overseas migration and the number of births per woman (the total fertility rate). For the Australian economy, the rate of labour productivity – the amount of output produced per worker – is set by assumption in the long run.

Deloitte Access Economics uses a cohort-component demographic model to produce forecasts of the Australian population. Those population forecasts are then used as an input, alongside key economic assumptions, to the DAEM Model. The key variables set by assumption in the Step Change scenario are discussed further below.

Population

Changes in Australia's population occur via natural increase (births minus deaths) and net overseas migration. Levels of net overseas migration are largely driven by a range of external social, economic, and political factors. Net overseas migration is set by assumption, based on a combination of:

- Recent trends in migration
- Short term expectations driven by projections released by the Department of Immigration and Border Protection
- Longer term expectations driven by Australia's history as a nation of relatively strong immigration, and the practical requirements needed to keep labour supply growing sufficiently to maintain economic growth.

Under the Step Change scenario, the level of net overseas migration to Australia is forecast to average 250,000 persons per annum over the medium and longer term. This is broadly equivalent to the assumptions adopted by the ABS (2023c), in the 'Medium' scenario of its recent population projections[3] and compares to an average of 215,000 persons per annum in the decade to 2022-23.

The rate of natural increase in the population is influenced by assumptions for the total fertility rate and life expectancy. The total fertility rate is expected to decline modestly in line with the forecast ageing of the Australian population. The total fertility rate is forecast to fall from an estimated 1.62 in 2022-23 to 1.58 by the end of the forecast period in 2055-56.[4]

Productivity

The rate of productivity growth is determined by government policies, decisions taken by businesses and investors, as well as changes in the structure of the global and Australian economies.

The Step Change scenario assumes long term productivity growth of 1.2% per annum (before considering the effect of specified climate change related parameters on productivity). This is in line with the level specified in the base case for the 2023 Intergenerational Report[5] and is above the average observed in the two decades to 2022-23.

As the primary source of per capita income growth in the long term, productivity growth is fundamental to economic growth. Higher rates of productivity growth therefore flow through to a larger economy and higher industry output.

3.1.3 Climate change assumptions

The Step Change scenario is nested within the broader context of the IEA's Sustainable Development Scenario (SDS). The SDS describes a global decarbonisation narrative in which there is widescale change in the energy sector and a sharp reduction in energy-related air pollution. This contributes towards achieving the UN's Sustainable Development Goals.[ix] The Step Change scenario also maps to the Representative Concentration Pathway (RCP) 2.6 where relevant. The RCP 2.6 represents very stringent global mitigation efforts which limit the rise in global mean temperature relative to the pre-industrial period to less than 2˚C by 2100.

Domestically, the scenario assumes that consumer choices contribute to decarbonisation in energy production and some parts of transportation. This is represented by the relatively high uptake of VPPs, greater demand side participation in electricity generation, and accelerated demand for energy storage batteries and electric vehicles. Deloitte Access Economics' modelling takes these assumptions into account by assuming that the emissions intensity of economic activity tracks the latest Federal Government projections published by DCCEEW in November 2023. For the Step Change scenario, emissions per unit of economic output by industry are assumed to be consistent with DCCEEW's 'with additional measures' scenario.

While net emissions decline, AEMO's assumption that there is no temporary overshoot of the target net emissions pathway is a binding constraint on economic activity in the Step Change scenario. As such, Deloitte Access Economics' modelling imposes further reductions in economic activity to ensure the target net emissions pathway is not exceeded. The resulting changes in the economy are evident in the industry structure at the end of the forecast period.

[3] The latest ABS population projections assume 225,000 net migrants per annum in the base case, 175,000 per annum in the low case and 275,000 per annum in the high case.

[4] As a comparison, the ABS population projections include a long run assumption for the total fertility rate of 1.60 in the base case, 1.45 in the low case and 1.75 in the high case.

[5] The 2023 Intergenerational Report includes a long run assumption of 1.2% annual growth in labour productivity in the base case, 0.9% in the low case and 1.5% in the high case. The 2023 Intergenerational Report is available here: https://treasury.gov.au/sites/default/files/2023-08/p2023-435150.pdf

3.2 National forecasts and outlook

3.2.1 Gross domestic product

The rapid tightening of monetary policy by many overseas central banks has seen the global economy enter a delicate stage of its post-pandemic rebalancing in 2024. Growth is likely to slow below trend before eventual easing in monetary policy returns economic activity to a more sustainable path. Disinflation is expected to continue, reflecting the unwinding of supply side bottlenecks and restrictive monetary policy settings.

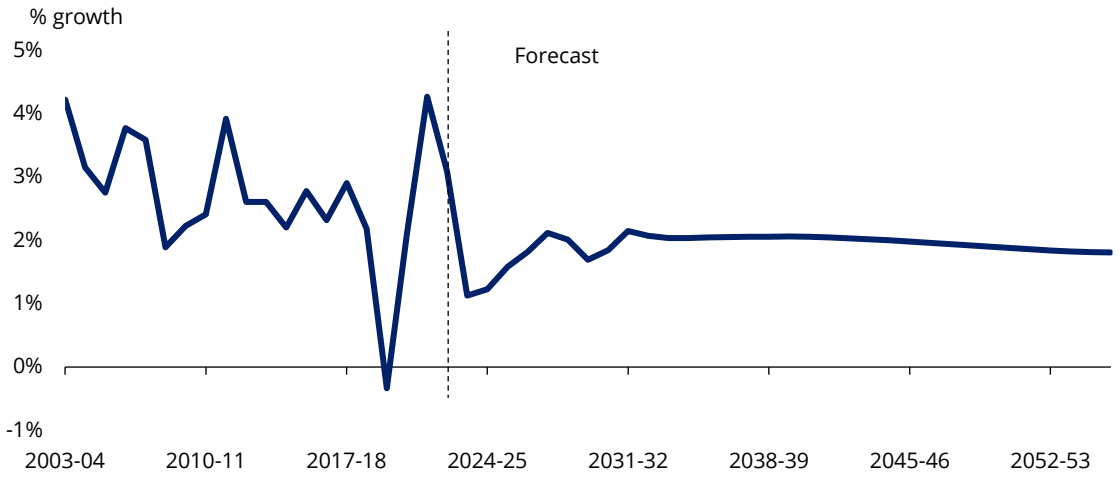
The Australian economy slowed throughout 2023 after a strong rebound from the COVID-19 pandemic. The economy expanded by 2.1% in the year to September 2023[x] as elevated inflation and higher interest rates have weighed on household consumption. Dwelling investment has also been subdued due to capacity constraints in the form of labour and materials shortages in the residential construction sector. Meanwhile a large pipeline of construction work has supported business and public sector investment activity.

Population growth has been a major contributor to aggregate economic activity since the pandemic, led by record high net overseas migration of 518,000 in 2022-23.[xi] Population growth is forecast to decline from record highs but will remain elevated for some time yet, helping to offset otherwise weak consumer spending. Large declines in real household income per capita are expected to see household consumption remain weak through the first half of 2024.

However, economic growth is expected to begin to pick up towards the end of 2024 and into 2025 as inflation moderates and pressure on household budgets eases. The personal income tax cuts scheduled to come into effect from 1 July 2024 will also support household spending. Business investment is expected to remain at elevated levels through 2024 as firms work through a large pipeline of construction work, particularly on major infrastructure projects.

Longer run economic growth is driven by structural factors including demographics, labour force participation and productivity growth. Overall, GDP growth is forecast to average 1.9% per year over the forecast period to 2025-26 (see Chart 3.1). Dwelling investment is expected to increase over the next few years to catch up with the record migration and as supply chain pressures in the sector unwind. This housing cycle is expected to peak around 2028-29 and drop off slightly in 2029-30 causing the slight dip in GDP growth around that year.

Chart 3.1 : Step Change gross domestic product growth, Australia, 2003-04 – 2055-56



Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

Population growth is forecast to decline over time, largely due to a declining fertility rate. Net overseas migration is steady over the forecast period and is the primary driver of population growth in the long run. The labour force participation rate is also expected to gradually decline over the forecast period to 2055-56 as the population ages, shifting a rising proportion of the population out of the workforce.

While productivity growth is expected to remain relatively stable in the long run, physical and transition risks from climate change will weigh on growth in the Step Change scenario.

3.2.2 Household disposable income

Real household disposable income fell by 3.5% in 2022-23 due to higher interest rates, inflation, and strong growth in personal income tax payments. Somewhat offsetting this has been a tight labour market which has led to strengthening nominal labour income gains.

Looking forward, a forecast decline in inflation and interest rates through 2024 and 2025 should support disposable income growth, as will personal income tax cuts that are set to come into effect from 1 July 2024.[xii] However, a gradual easing of labour market conditions over this period is expected to see nominal wage growth slow. Household disposable income is expected to increase by 3.6% in 2024-25 and 2.8% in 2025-26.

In the long run, household disposable income is largely driven by employment and wages growth. An ageing population is expected to see an increasing proportion of the population out of the workforce meaning declining employment growth over time. Real wages growth is expected to remain relatively steady and grow broadly in line with overall productivity growth.

Household disposable income growth is expected to slow over time, mainly driven by declining employment growth, reaching 1.5% by 2055-56.

3.2.3 Dwelling investment

Dwelling investment declined in 2023 amid elevated construction costs, capacity constraints in the residential construction sector, and competition for resources from construction at major infrastructure investment projects.

Future demand for new housing is likely to be supported by strong population growth and elevated home equity[6]. Increases in home equity make property owners (both owner occupier and investors) wealthier, which in turn can increase housing demand. However, it is likely to take some time for construction industry capacity to recover as supply side pressures gradually unwind. This could delay the pace at which dwelling construction activity can increase in the near term.

Another factor supporting growth in the medium term is the Federal Government's target of 1.2 million new homes between 2024 and 2029.[xiii] Both the New South Wales and Victorian Governments have already announced incentives for developers to include affordable housing in their projects, and the Federal Government has established the Housing Australia Future Fund to provide 20,000 new social housing dwellings.

Over the longer run, growth in dwelling investment and housing commencements are expected to mostly reflect underlying demand for new housing, along with an allowance for replacement of the existing stock. Underlying demand is determined by population growth and the associated formation of new households. Growth in new households is expected to be slightly below growth in the total population as average household size increases.

Across the forecast period from 2022-23 to 2055-56 dwelling completions are expected to grow by a CAGR of 1.0%, marginally below population growth of 1.2% per annum.

3.2.4 Industry output

After several years of wet weather that has boosted crop production, agriculture industry output growth is expected to soften. Over the longer run, growth in the industry is expected to be below growth in the broader economy overall as climate change causes increasing extreme weather events and droughts weighing on crop production.

[6] Home equity refers to the difference between a property's market value and the outstanding value of the mortgage. For example if a property is worth $1 million and the amount owing on the mortgage is $750,000, the home equity is $250,000.

The mining industry has largely defied the trend of a weaker Australian economy in 2023 with commodity prices generally remaining above long run averages. Production volumes have also increased amid improved weather conditions and the completion of planned maintenance over the past year. However, mining activity is expected to remain subdued in the near term as subdued global economic activity weighs on exports.

Mining industry output is expected to gain pace in the medium term, as more production from iron ore, coal and other metals projects come online.

Over the long run, growth will increasingly be driven by exports of critical minerals used in renewable energy technology as the global economy transitions towards net zero emissions by 2050. However, this transition will also hit exports of fossil fuel commodities such as coal. On balance the combination of these forces will see the mining industry shrink as a share of the economy over time.

The manufacturing industry has continued its downward trend of the past several decades in 2023. Domestic demand remained soft as heightened uncertainty weighed on new orders. Activity is expected to remain weak across the forecast period as long running structural issues, such as high labour costs and competition from low-cost economies in Asia, constrains growth.

The electricity, gas, water and waste services industry contracted in 2023 as mild weather conditions reduced demand for heating and cooling systems. The industry is expected to gradually rebound in the near term as continued population growth boosts demand and strong emissions reduction targets support the transition to renewables. Over the long run, continued improvements in energy and water resource efficiency will dampen the growth in the industry caused by population growth. This is expected to see the industry grow more slowly than the economy overall.

The construction industry outperformed the broader economy in 2022-23 as a large pipeline of infrastructure projects offset a decline in residential construction work. In the short term, the industry is likely to struggle as capacity constraints weigh on activity. However, strong underlying drivers including population growth and a large infrastructure pipeline, as well as an eventual unwinding of capacity pressures, will see growth rebound.

Over the medium and longer run, population growth will be a major driver of growth in construction, leading to increased demand for housing and infrastructure projects. The transition to net zero and the associated emissions reduction targets are also expected to increase activity.

The transport, postal and warehousing industry has grown strongly as air travel rebounded from record declines during the pandemic. Growth is expected to slow in the short term as the tailwind from the COVID-19 rebound fades and as weak household spending weighs on tourism and travel.

Over the medium term, growth will pick up as consumer spending regains momentum. Declining population growth will constrain activity in the longer run.

Services industries comprise a large share of the Australian economy and therefore tend to reflect trends in the broader economy. After a strong rebound following COVID-19 lockdowns and restrictions, activity across most service industries has softened in line with a slowdown in consumer spending.

In the short term, activity is expected to remain weak, particularly for consumer facing industries as household consumption stalls. Activity is broadly expected to rebound in late 2024 and 2025. In the long term, services industries are largely expected to outperform growth in the broader economy.

3.2.5 Exchange rate

Movements in the AUD/USD exchange rate typically reflect movements in major commodity prices that Australia exports as well as interest rate differentials between Australia and the United States.

Despite large increases in official interest rates by the RBA since 2022, the United States Federal Reserve has increased interest rates by even more, putting downward pressure on the Australian Dollar over the past couple of years. This has somewhat been offset by commodity prices that have remained above long-term averages.

Looking forward, the Federal Reserve is expected to begin its rate cutting cycle before the RBA, narrowing the spread between interest rates in the US and Australia in 2024. This should provide some support to the Australian dollar. Weighed against that support will be movements in commodity prices which remain very uncertain.

Over the longer run interest rates in both countries are expected to stabilise at equilibrium levels while the term of trade is also assumed to stabilise. This is expected to see the exchange rate level out at $A1.40 in the long run.

3.2.6 Forecast summary

Table 3.1 presents a summary of national-level forecasts for the Step Change scenario.

Table 3.1: Forecast summary for the Step Change scenario

	History	Forecast				
	2022-23	2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross domestic product						
$ billions	$2,405	$2,501	$3,044	$3,724	$4,484	
CAGR over previous decade	2.4%	2.0%	2.0%	2.0%	1.9%	1.9%
Household disposable income						
$ billions	$1,395	$1,463	$1,792	$2,166	$2,538	
CAGR over previous decade	1.6%	1.5%	2.1%	1.9%	1.6%	1.8%
AUD:USD exchange rate						
$A/$US	$1.49	$1.40	$1.42	$1.42	$1.42	
Change over previous decade	4.3%	0.2%	0.2%	0.0%	0.0%	-0.1%
Population						
Persons (millions)	26.4	27.8	31.6	35.2	38.7	
CAGR over previous decade	1.4%	1.5%	1.3%	1.1%	1.0%	1.2%
Gross value added by industry						
Agriculture ($ billion)	$64.0	$63.0	$70.3	$78.6	$85.8	
CAGR over previous decade	1.8%	2.1%	1.1%	1.1%	0.9%	0.9%
Mining ($ billion)	$321.1	$317.6	$375.2	$419.6	$461.8	
CAGR over previous decade	3.4%	0.9%	1.7%	1.1%	1.0%	1.1%
Manufacturing ($ billion)	$124.0	$120.6	$116.5	$115.6	$111.1	
CAGR over previous decade	-0.4%	-0.2%	-0.3%	-0.1%	-0.4%	-0.3%
Utilities ($ billions)	$45.2	$44.6	$46.7	$49.5	$51.0	
CAGR over previous decade	0.6%	0.3%	0.5%	0.6%	0.3%	0.4%
Construction ($ billion)	$158.5	$165.1	$191.5	$218.4	$242.6	
CAGR over previous decade	0.3%	0.7%	1.5%	1.3%	1.1%	1.3%
Services ($ billion)	$1,343	$1,434	$1,836	$2,335	$2,908	
CAGR over previous decade	3.1%	2.9%	2.5%	2.4%	2.2%	2.4%

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023d, 2023e), Reserve Bank of Australia, Deloitte Access Economics

3.3 State and territory forecasts and outlook

3.3.1 New South Wales

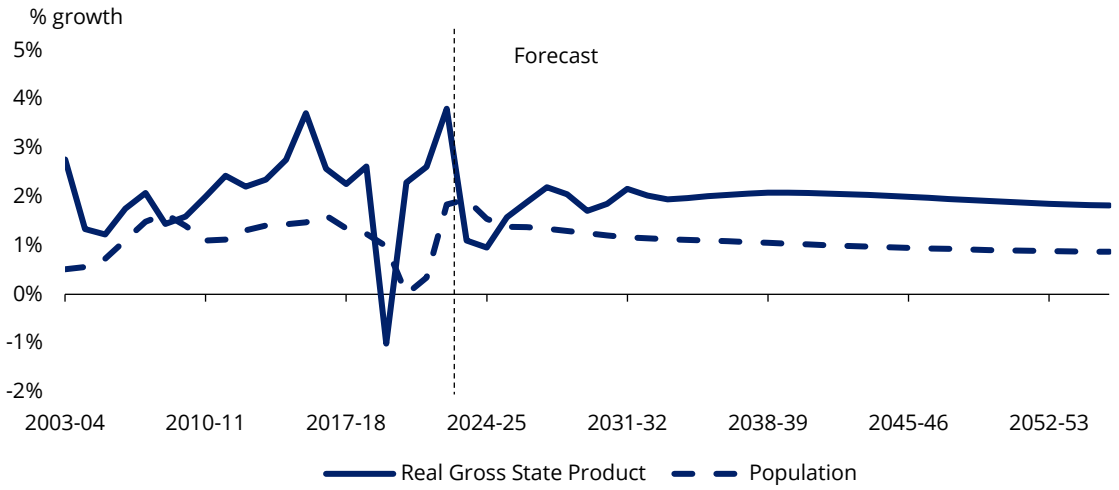
Elevated overseas migration inflows to Australia will continue to bolster growth in the New South Wales population in the near term. In the longer run, New South Wales population growth is forecast to moderate to 0.9% by 2055-56 as fertility rates decline.

Recent GSP growth in New South Wales has reflected the slowing national economy as high inflation and interest rates weigh on household consumption (refer to Chart 3.2: Real gross state product and population growth, New South Wales). Higher living costs will continue to burden households, leading to softer GSP growth in 2023-24 and 2024-25. As tight financial conditions begin to unwind, GSP growth is expected to increase from 1.0% in 2024-25 to 1.6% by 2025-26.

In the longer run, New South Wales GSP growth will be influenced by factors reflected at the national level, including moderating population growth and labour force participation. Growth in GSP will decline from 2.2% in 2031-32 to 1.8% in 2055-56.

Recent strength in services exports has supported growth in the New South Wales economy. While domestic activity remains weak, in line with a slowdown in consumer spending, state overseas exports of services increased by over 35% in 2023. Domestic services activity is expected to recover as the national economy strengthens, and over time services are expected to increase as a share of the state economy.

Chart 3.2: Real gross state product and population growth, New South Wales



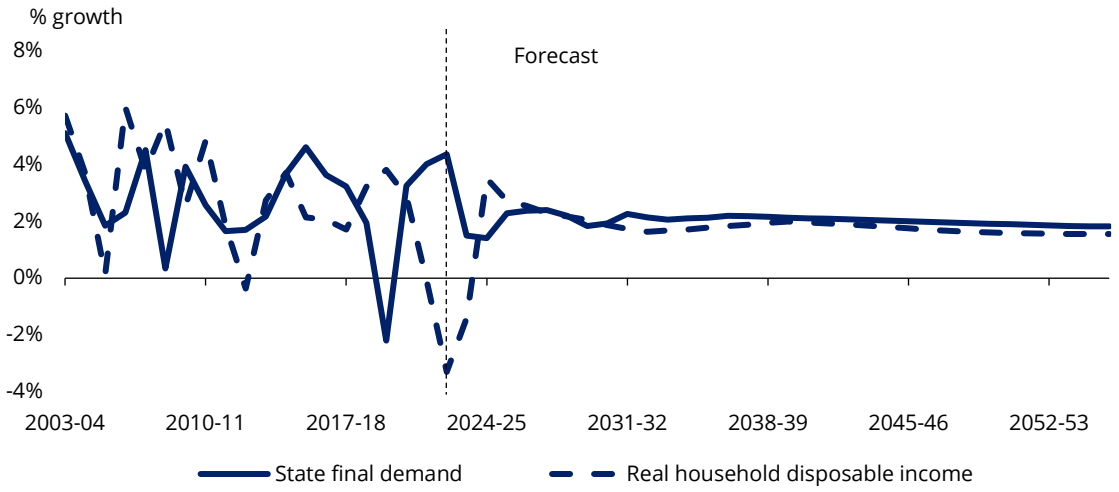
Source: Australian Bureau of Statistics (2023a, 2023e), Deloitte Access Economics

Real household disposable income fell by 3.3% in 2022-23 in New South Wales due to higher interest rates, inflation, and increases in personal income tax payments (refer to Chart 3.3: State final demand and household disposable income, New South Wales). As inflation eases and interest rates are expected to decline, household disposable income is expected to recover to 3.5% growth in 2024-25 to 2.7% growth in 2025-26.

In the long run, New South Wales household disposable income is driven by state employment and wages growth. As the population ages in the state, employment growth will decline over time while real wages growth remains relatively steady. Growth in New South Wales household disposable income is expected to reach 1.5% by 2055-56.

Dwelling investment in New South Wales is expected to be driven in the long run by population growth and the formation of new households. From 2022-23 to 2055-56, dwelling completions in New South Wales are expected to grow by a CAGR of 0.9%, below the national growth of 1.0% over the same period.

Chart 3.3: State final demand and household disposable income, New South Wales



Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

Table 3.2: New South Wales outlook, Step Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$734	$761	$925	$1,133	$1,366	
CAGR over previous decade	*2.4%*	*2.2%*	*2.0%*	*2.0%*	*1.9%*	*1.9%*
State final demand						
$ billions	$716	$754	$931	$1,146	$1,382	
CAGR over previous decade	*2.8%*	*2.8%*	*2.1%*	*2.1%*	*1.9%*	*2.0%*
Household disposable income						
$ billions	$458	$480	$581	$700	$821	
Change over previous decade	*1.9%*	*1.7%*	*1.9%*	*1.9%*	*1.6%*	*1.8%*
Population						
Persons (thousands)	8,273	8,682	9,794	10,834	11,847	
CAGR over previous decade	*1.2%*	*1.4%*	*1.2%*	*1.0%*	*0.9%*	*1.1%*
Dwelling completions						
Total (thousands)	48.6	41.9	61.5	64.6	66.4	
CAGR over previous decade	*3.9%*	*-2.4%*	*3.9%*	*0.5%*	*0.3%*	*0.9%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

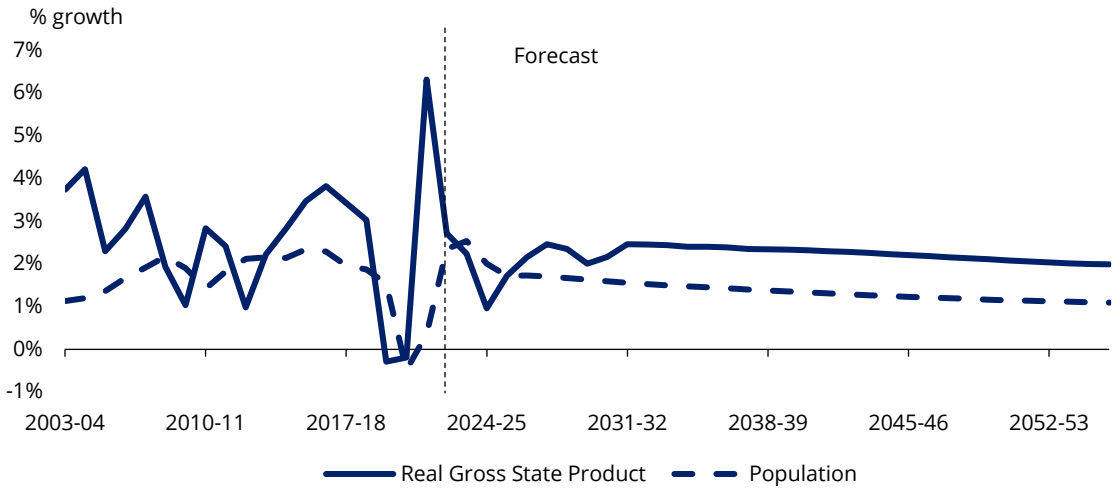
Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

3.3.2 Victoria

The recent spike in overseas migration to Australia has boosted population growth in Victoria. In 2022-23, Victoria was one of the most popular destinations for overseas migration , driven by a large increase in tertiary students on temporary visas. Due to this, 2022-23 was Victoria's largest annual net overseas migration level on record. Over the longer term, population growth will slow in line with declining fertility rates. However, Victoria is expected to continue to benefit from a steady net overseas migration over the forecast period.

The Victorian economy experienced a strong rebound from the COVID-19 pandemic and associated lockdowns, which saw GSP growth recover from -0.2% in 2020-21 to 6.3% in 2021-22. The economy has since slowed throughout 2023 as elevated inflation and higher interest rates weighed on household consumption.

Chart 3.4: Real gross state product and population growth, Victoria



Source: Australian Bureau of Statistics (2023a, 2023e), Deloitte Access Economics

Over the longer run, the Victorian economy is expected to grow above the national rate of GDP growth as the state continues to be supported by relatively strong structural factors such as population growth and labour force participation. GSP growth is forecast to decline from 2.5% in 2031-32 to 2.0% in 2055-56.

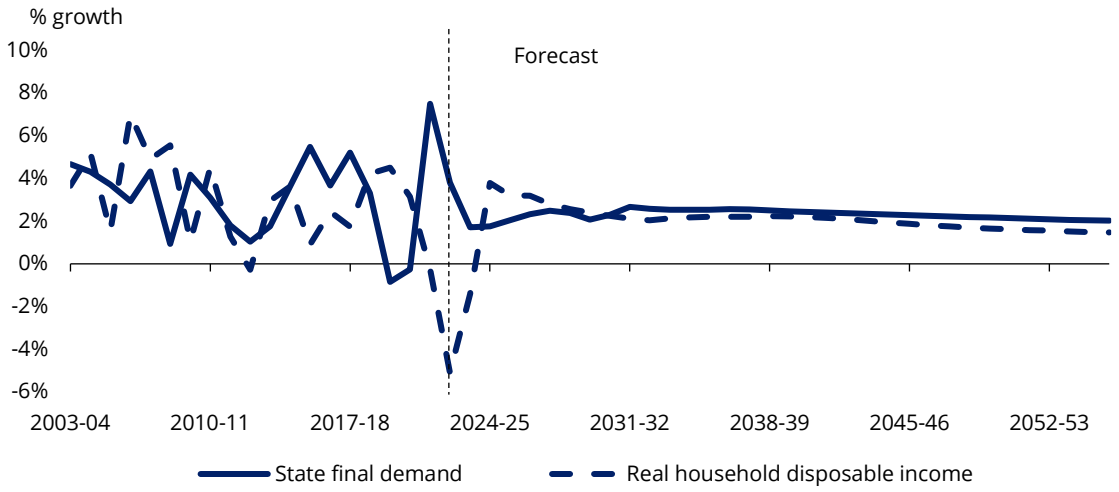
Victoria accounts for almost a third of Australia's total manufacturing industry. This industry has historically seen growth decrease because of structural challenges such as international competition and high labour costs. This is a trend that will continue through the forecast period.

While more traditional industries in Victoria such as manufacturing and wholesale trade are forecast to weaken over the forecast period, Victoria will be able to leverage existing strength in services industries including financial services, telecommunications, and arts. Services industries are expected to outperform growth in the broader economy over the forecast period.

Growth in Victorian household disposable income was weak throughout 2023 as disposable income was constrained by higher interest rates, high inflation, and an increase in personal tax rates. However, a near term recovery in household disposable income growth is expected as inflation moderates and interest rates decrease. Victorian household disposable income is forecast to grow above the national level for most of the forecast period, reflecting relative strength in the Victorian labour market.

Growth in dwelling investment in Victoria in the long run is expected to be driven by population growth and the formation of new households. From 2022-23 to 2055-56, dwelling completions in Victoria are expected to grow by a CAGR of 1.0%, in line with national growth.

Chart 3.5: State final demand and household disposable income, Victoria



Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

Table 3.3: Victoria outlook, Step Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$536	$563	$708	$889	$1,092	
CAGR over previous decade	*2.7%*	*2.7%*	*2.3%*	*2.3%*	*2.1%*	*2.2%*
State final demand						
$ billions	$575	$607	$773	$982	$1,213	
CAGR over previous decade	*3.3%*	*3.3%*	*2.4%*	*2.4%*	*2.1%*	*2.3%*
Household disposable income						
$ billions	$327	$346	$438	$540	$634	
Change over previous decade	*1.8%*	*1.7%*	*2.4%*	*2.1%*	*1.6%*	*2.0%*
Population						
Persons (thousands)	6,744	7,175	8,395	9,573	10,728	
CAGR over previous decade	*1.6%*	*1.8%*	*1.6%*	*1.3%*	*1.1%*	*1.4%*
Dwelling completions						
Total (thousands)	56.5	58.7	70.1	75.5	77.9	
CAGR over previous decade	*1.2%*	*0.0%*	*1.8%*	*0.8%*	*0.3%*	*1.0%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), , Deloitte Access Economics

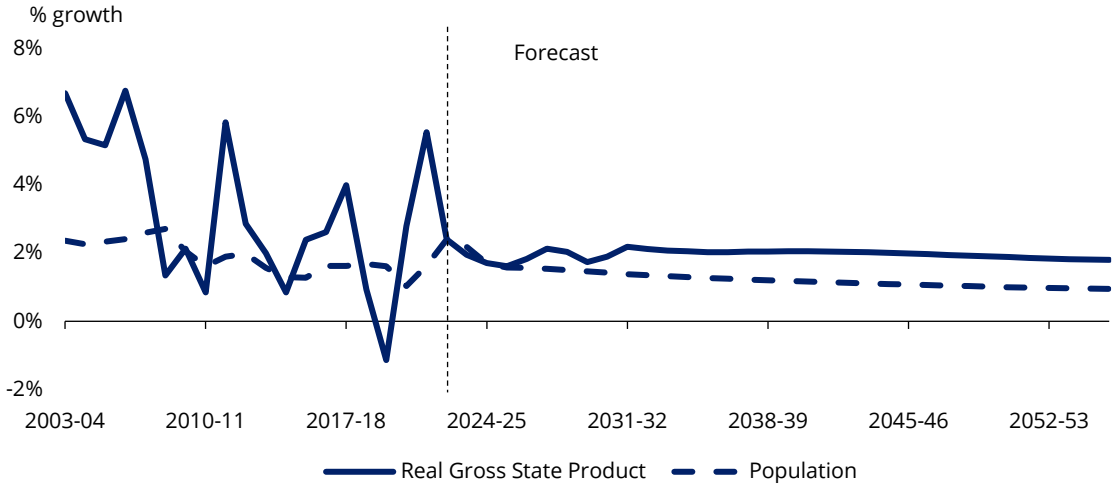
3.3.3 Queensland

Queensland has benefited from strong population growth in recent years as the state was the most popular destination for interstate migration through the COVID-19 pandemic. Population growth is expected to soften back towards longer term trends in the near term. However, Queensland is expected to maintain stronger population growth than the national trend over the forecast period, reflecting Queensland's status as a popular destination for both overseas and interstate migrants.

Recent GSP growth in Queensland has been weak, reflecting a slowing national economy as inflation and interest rates weigh on household consumption. Recent policy intervention to address cost of living pressures has mitigated the decline in private consumption in Queensland. Growth in Queensland GSP is expected to recover as the national economic strengthens.

In the long run, Queensland GSP is forecast to grow at broadly the same rate as the national economy, with annual growth increasing from 2.2% in 2031-32 to 1.8% in 2055-56. The forecast moderation growth largely reflects a declining labour force participation as the Queensland population ages.

Chart 3.6: Real gross state product and population growth, Queensland



Source: Australian Bureau of Statistics (2023a, 2023e), Deloitte Access Economics

Mining is Queensland's largest single industry. Increased coal exports have driven recent strength in mining output. Despite a softening in metallurgical coal demand from China resulting in cooling prices, the near-term outlook for Australian coal exports – which predominantly benefits Queensland – is bolstered by strong demand from India. In the longer run, mining industry output will fall as a share of the economy as demands for renewable energy technology on balance weaken demand for fossil fuel commodities such as coal.

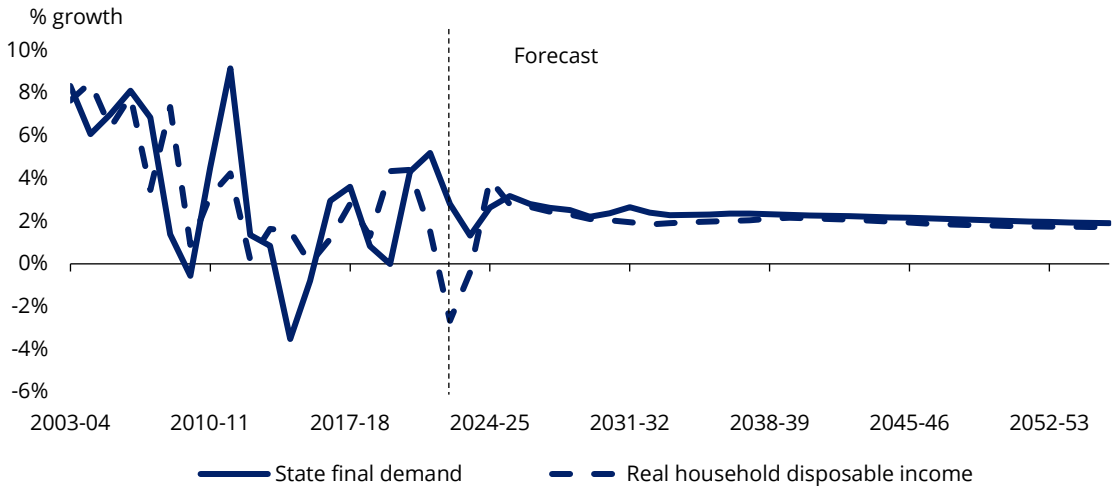
Other large industries in Queensland, such as health care and social assistance, will continue to grow in line with longer term drivers such as population growth.

Queensland household disposable income has had some buffer from the decreases seen at the national level due to state government policy interventions addressing cost of living pressures. These measures are expected to continue through 2024, as new additional cost of living support measures come into place including free kindergarten and a freeze on motor vehicle registration fees.

Queensland household disposable income is expected to increase by 4.0% in 2024-25 and 2.8% in 2025-26. In the long run, Queensland household disposable income will decline in line with the national trend to reach 1.7% annual growth in 2055-56.

Dwelling investment growth in Queensland is expected to be driven by population growth and the formation of new households in the long run. From 2022-23 to 2055-56, dwelling completions in Queensland are expected to grow by a CAGR of 1.7%, above the national growth of 1.0%. This reflects a stronger population growth forecast in Queensland than the national level.

Chart 3.7: State final demand and household disposable income, Queensland



Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

Table 3.4: Queensland outlook, Step Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$465	$490	$598	$731	$880	
CAGR over previous decade	*2.2%*	*2.5%*	*2.0%*	*2.0%*	*1.9%*	*2.0%*
State final demand						
$ billions	$437	$469	$597	$747	$911	
CAGR over previous decade	*1.6%*	*2.6%*	*2.4%*	*2.3%*	*2.0%*	*2.3%*
Household disposable income						
$ billions	$271	$289	$356	$437	$521	
Change over previous decade	*1.6%*	*1.9%*	*2.1%*	*2.1%*	*1.8%*	*2.0%*
Population						
Persons (thousands)	5,405	5,706	6,566	7,369	8,141	
CAGR over previous decade	*1.6%*	*1.8%*	*1.4%*	*1.2%*	*1.0%*	*1.2%*
Dwelling completions						
Total (thousands)	32.3	34.9	53.7	56.4	57.1	
CAGR over previous decade	*1.2%*	*-1.1%*	*4.4%*	*0.5%*	*0.1%*	*1.7%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

3.3.4 South Australia

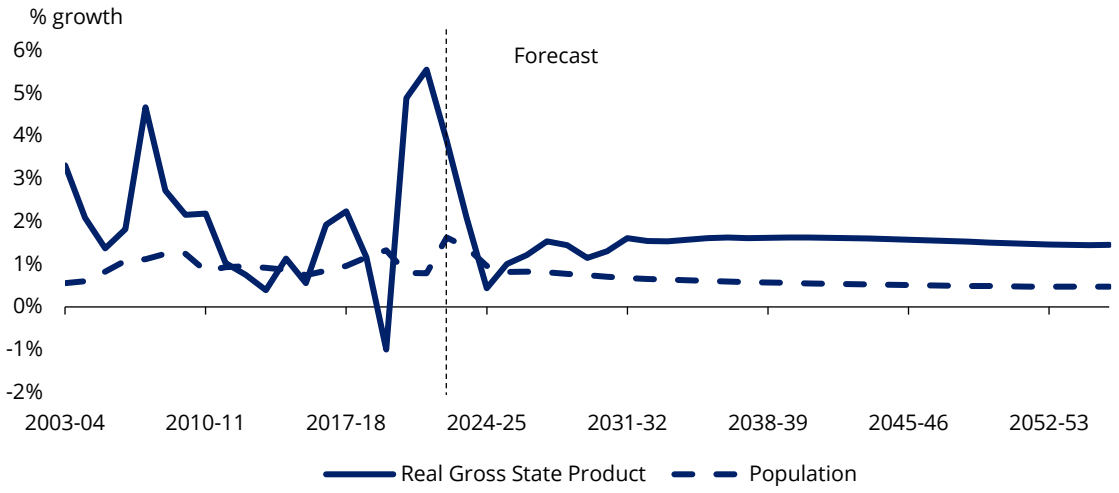
South Australia experienced a reversal of usual population trends during the pandemic when the state had two years of a positive net inflow of interstate migration. The state is now returning to pre-pandemic trends and population growth is moderating. Those leaving the state are likely to be of working age, contributing to a structurally lower rate of labour force participation and a relatively older population in South Australia.[xiv] This trend is forecast to continue over the forecast period as the population continues to age.

South Australia's GSP growth has slowed in recent quarters, reflecting a weaker national economy. Slowing population growth will drag on South Australia's near term GSP growth, alongside elevated inflation and higher interest rates which continue to weigh on activity.

South Australian GSP growth is expected to increase from 0.4% in 2024-25 to 1.0% in 2025-26 as inflation moderates and household consumption recovers. In the longer run, relatively lower population growth in South Australia will see GSP growth decline over time at a sharper rate than at the national level. Growth will decline from 1.6% in 2031-32 to 1.5% by 2055-56.

A large proportion of South Australia's total industry output is concentrated in the services sector. However, South Australia's share of the national services output is expected to decrease over the forecast period. This reflects a relatively slower population growth outlook in South Australia relative to the national average over the forecast period. South Australia's agriculture industry will grow below the broader economy over the long run. While recent activity has been near record highs, climate change is expected to cause increasingly extreme weather events and droughts over the longer term which is likely to weigh on crop production.

Chart 3.8: Real gross state product and population growth, South Australia



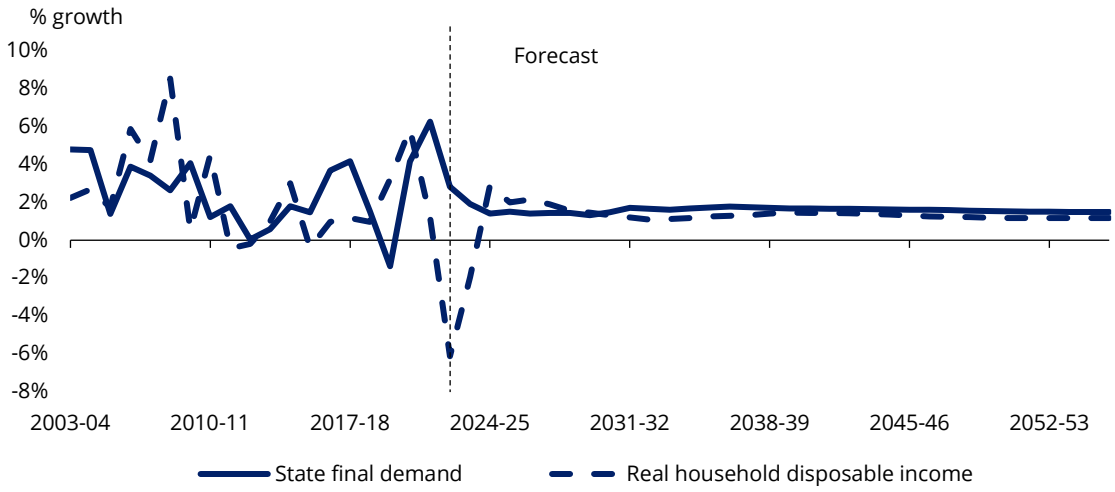
Source: Australian Bureau of Statistics (2023a, 2023e), Deloitte Access Economics

In line with the national profile, South Australian household disposable income is expected to increase when pressures on income – such as inflation and interest rates – ease. South Australian household disposable income is forecast to recover to 2.9% growth in 2024-25 and 2.0% growth in 2025-26.

Over the longer term, South Australia's ageing population will drive lower employment growth. This will lead to declining household disposable income growth over time, reaching 1.2% by 2055-26.

From 2022-23 to 2055-56, dwelling completions in South Australia are expected to grow by a CAGR of -1.2%, below the national growth of 1.0%. This reflects a weaker population growth forecast in South Australia than the national level.

Chart 3.9: State final demand and household disposable income, South Australia



Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

Table 3.5: South Australia outlook, Step Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$134	$139	$161	$188	$219	
CAGR over previous decade	*2.1%*	*2.3%*	*1.5%*	*1.6%*	*1.5%*	*1.5%*
State final demand						
$ billions	$144	$151	$176	$208	$242	
CAGR over previous decade	*2.5%*	*2.7%*	*1.5%*	*1.7%*	*1.5%*	*1.6%*
Household disposable income						
$ billions	$86	$89	$102	$117	$132	
Change over previous decade	*1.0%*	*0.9%*	*1.4%*	*1.4%*	*1.2%*	*1.3%*
Population						
Persons (thousands)	1,841	1,899	2,038	2,152	2,259	
CAGR over previous decade	*1.0%*	*1.1%*	*0.7%*	*0.5%*	*0.5%*	*0.6%*
Dwelling completions						
Total (thousands)	11.6	11.8	8.1	7.8	7.8	
CAGR over previous decade	*3.3%*	*1.6%*	*-3.6%*	*-0.4%*	*0.0%*	*-1.2%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

3.3.5 Western Australia

The COVID-19 pandemic led to a boost in interstate migration to Western Australia as residents of eastern states moved to avoid long term lockdowns. Following the pandemic, overseas migration to Western Australia has surged, supported by international student numbers.

As international migration trends return to normalcy, population growth is expected to moderate towards longer term trends. Over the longer term, population growth in Western Australia is expected to grow at slightly below the national rate. In line with national trends, declining fertility rates will see population growth moderate over time in Western Australia.

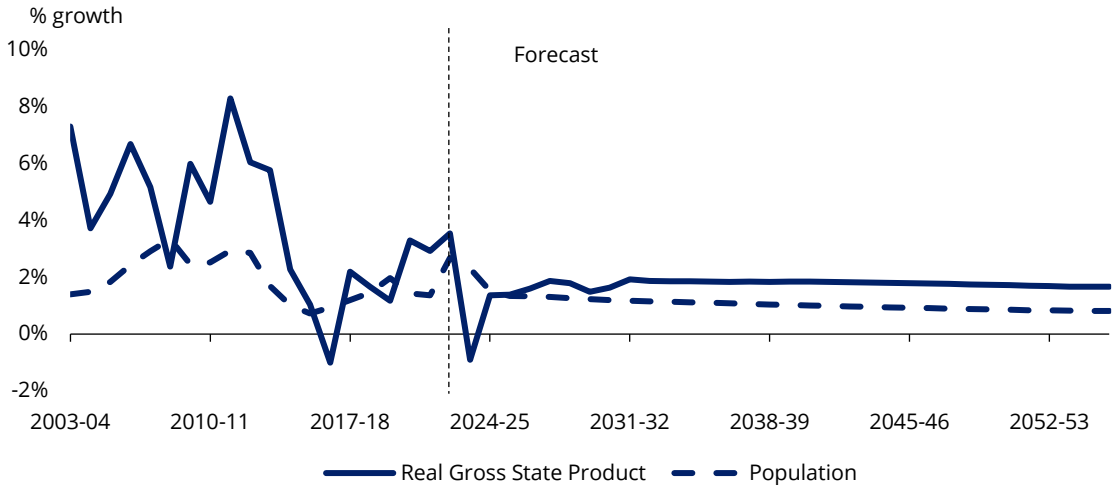
Western Australian GSP growth fared relatively well through the pandemic as shorter lockdowns allowed economic activity to continue in the state. Reflecting national trends, household spending in Western Australia slowed significantly through late 2023 as cost of living pressures restricted consumer spending.

High inflation and interest rates are expected to continue to weigh on activity until 2024-25, when inflation is expected to moderate. GSP growth is forecast to increase from -0.9% in 2023-24 to 1.4% in 2025-26. In the longer run, economic growth will moderate in line with declining population growth and participation rates. Growth in Western Australia will decline in line with the national trend the forecast period, slowing from 1.9% in 2031-32 to 1.7% by 2055-56.

The mining industry is Western Australia's largest industry and accounts for a significant volume of Australia's minerals and petroleum exports. The state's mining industry had higher output through 2022-23 stemming from increased capacity in minerals including iron ore. Demand for Western Australia's resource commodities is expected to be subdued in the near term as slower global economic activity weighs on exports.

Over the long run, growth in Western Australia's mining sector will be driven by the exports of minerals used in renewable energy technology. While the transition towards net zero will support the demand for some minerals, the transition will weaken demand for many fossil fuel commodities from Western Australia. The mining industry is forecast to shrink as a share of the economy over time.

Chart 3.10 : Real gross state product and population growth, Western Australia

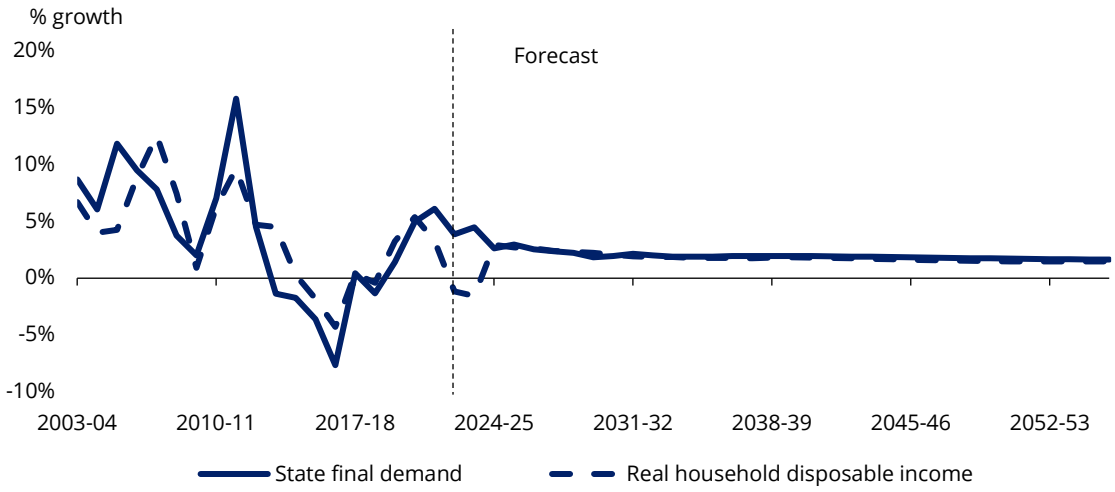


Source: Australian Bureau of Statistics (2023a, 2023e), Deloitte Access Economics

Real household disposable income in Western Australia is forecast to fall by -1.2% in 2023-24 as Western Australian households face higher interest rates, inflation, and growth in personal tax payments. In line with national trends, a decline in inflation and interest rates in 2024 and 2025 will support a recovery in household disposable income in Western Australia. Over the long run, household disposable income in Western Australia will slow, driven by declining employment growth, and is forecast to reach 1.5% annual growth in 2025-26.

Total dwelling completions in Western Australia are expected to grow at a CAGR of 0.9% from 2022-23 to 2055-56, slightly below the national growth of 1.1%. Population growth, which is a key driver of dwelling completions in the long run, is forecast to be slightly below the national level in Western Australia over the forecast period.

Chart 3.11: State final demand and household disposable income, Western Australia



Source: Australian Bureau of Statistics (2023b), Deloitte Access Economics

Table 3.6: Western Australia outlook, Step Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$419	$427	$509	$610	$722	
CAGR over previous decade	*2.3%*	*1.7%*	*1.8%*	*1.8%*	*1.7%*	*1.7%*
State final demand						
$ billions	$256	$282	$347	$418	$496	
CAGR over previous decade	*0.0%*	*1.3%*	*2.1%*	*1.9%*	*1.7%*	*2.0%*
Household disposable income						
$ billions	$166	$173	$213	$253	$293	
Change over previous decade	*0.9%*	*0.8%*	*2.1%*	*1.7%*	*1.5%*	*1.7%*
Population						
Persons (thousands)	2,845	2,994	3,374	3,726	4,056	
CAGR over previous decade	*1.4%*	*1.7%*	*1.2%*	*1.0%*	*0.9%*	*1.1%*
Dwelling completions						
Total (thousands)	15.2	17.1	19.4	20.7	20.7	
CAGR over previous decade	*-2.0%*	*-6.2%*	*1.3%*	*0.7%*	*0.0%*	*0.9%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

3.3.6 Tasmania

Population growth in Tasmania has limited the state's economic growth over recent periods. The state has historically had lower population growth than the national level and faces some structural demographic challenges. Interstate migration to Tasmania is low and the state receives a relatively small share of Australia's overseas migration. However, Tasmania's key demographic challenge is a decline in natural increase as the population ages.

Tasmania is expected to have a lower population growth than the national level over the forecast period. In line with national trends, a decline in the fertility rate in Tasmania is expected to drive a weaker population growth in the long run.

Tasmania's economic growth has been relatively subdued in recent history, with the economy expanding by 1.2% in 2022-23. Tasmanian economic growth is forecast to remain slow in the near term as elevated inflation and a high interest rate continue to lead to weakness in household consumption.

As national growth recovers through 2024 and 2025, Tasmania's economy will remain relatively weak. The state's GSP growth is forecast to increase from 0.3% in 2024-25 to 0.6% in 2025-26.

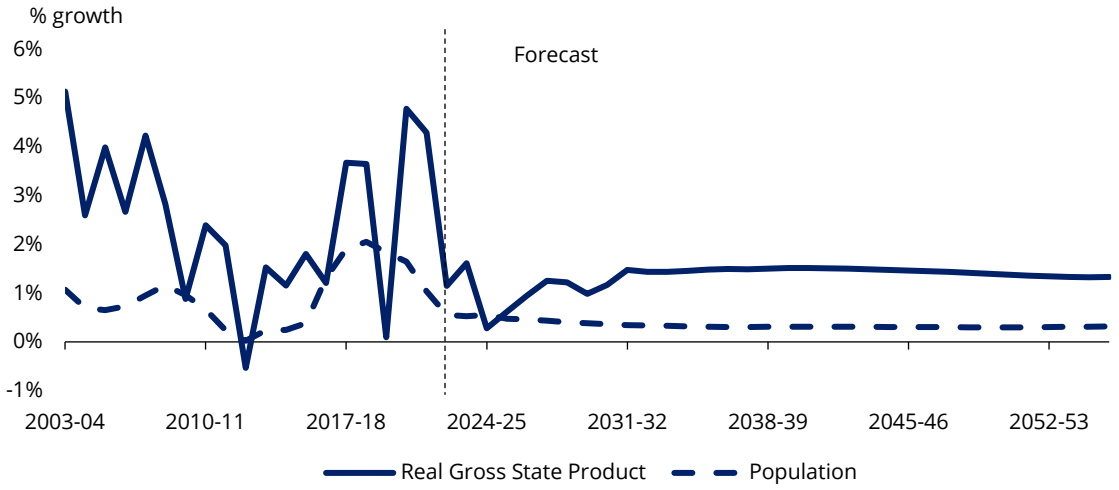
In the longer run, Tasmania's economic growth will be below the national level. This underperformance reflects forecast lower population growth in the state, which is expected to have a lower fertility rate than the national level over the forecast period. In the long run, Tasmania is expected to continue to have a relatively older population, which will cause a declining labour force participation rate as a greater portion of the population move out of the workforce.

Overall GSP growth in Tasmania will decline at a greater rate than the national level in the long run, due to a relatively lower population growth and participation rates. Tasmanian GSP growth is forecast to decline from 1.5% In 2031-32 to 1.3% by 2055-56.

The agriculture industry in Tasmania is a key sector of the state's economy. The industry has seen favourable weather conditions in recent years, leading to record performance across Tasmania's relatively diversified agriculture sector, which includes dairy, livestock, fruits and vegetables, and field crops. Agricultural activity is expected to remain near record highs in the near term.

Tasmania's agricultural production benefits from ideal growing conditions in a temperate climate, however over the forecast period the sector is expected to face increasing challenges from climate change. This is expected to cause agriculture industry output growth to grow below the broader economy as climate change increases the impact of extreme weather events.

Chart 3.12: Real gross state product and population growth, Tasmania



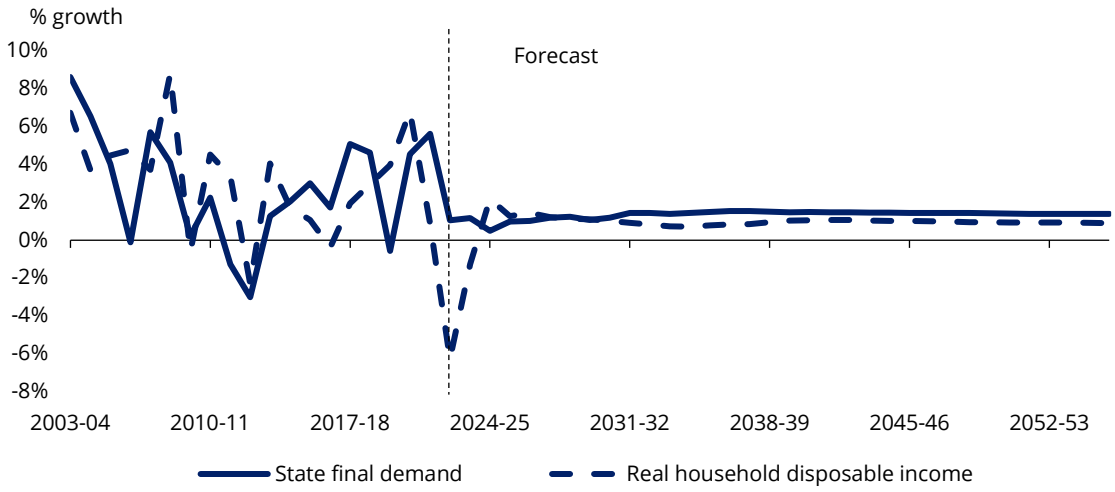
Source: Australian Bureau of Statistics (2023a, 2023e), Deloitte Access Economics

Like other states and territories, Tasmania has seen a slowing in household disposable income as inflation, interest rates, and weak wage growth has weighed on household incomes. As inflation and interest rates moderate over 2024 and 2025, Tasmanian household disposable income is expected to increase, albeit at a slower rate than seen nationally. Household disposable income is expected to increase by 2.2% in 2024-25 and 1.3% in 2025-26.

Over the longer run, Tasmania's demographic challenges are expected to weigh on household disposable income growth. An ageing population will lead to declining employment growth in the state, below the national level. Tasmanian household disposable income growth is expected to grow at a declining and slower rate than the national level through the forecast period, reaching 0.9% by 2055-56.

In line with national trends, dwelling investment in Tasmania is expected to be driven in the long run by population growth and the formation of new households. From 2022-23 to 2055-56, dwelling completions in Tasmania are expected to grow by a CAGR of -2.8%, below the national growth of 1.0% over the same period. This reflects relatively slower population growth in Tasmania over the forecast period.

Chart 3.13: State final demand and household disposable income, Tasmania



Source: Australian Bureau of Statistics (2023b), Deloitte Access Economics

Table 3.7: Tasmania outlook, Step Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$39	$40	$45	$52	$60	
CAGR over previous decade	*2.3%*	*2.3%*	*1.3%*	*1.5%*	*1.4%*	*1.3%*
State final demand						
$ billions	$44	$45	$51	$59	$68	
CAGR over previous decade	*2.8%*	*2.7%*	*1.3%*	*1.5%*	*1.4%*	*1.3%*
Household disposable income						
$ billions	$28	$28	$31	$35	$38	
Change over previous decade	*1.6%*	*1.3%*	*1.0%*	*1.0%*	*0.9%*	*0.9%*
Population						
Persons (thousands)	572	581	603	622	642	
CAGR over previous decade	*1.1%*	*1.2%*	*0.4%*	*0.3%*	*0.3%*	*0.3%*
Dwelling completions						
Total (thousands)	3.4	2.6	1.5	1.3	1.3	
CAGR over previous decade	*4.6%*	*-0.1%*	*-5.4%*	*-1.8%*	*0.7%*	*-2.8%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

3.3.7 Northern Territory

The Northern Territory population benefited in the surge in overseas migration to Australia in 2022-23. In the near term, population growth is expected to return to longer term trends. The Northern Territory has historically seen net interstate migration detract from total population growth, as more people leave the Northern Territory to move to other states than the number of people who migrate from other states to the Northern Territory.

The largest driver of population growth in the Territory has historically been natural increase. The Northern Territory has a younger age profile and higher fertility rate than the national average. While the fertility rate is forecast to decline over time in line with national trends, the relatively young age profile of the Territory is forecast to result in population growth above that expected at the national level.

In line with national trends, the Northern Territory economy has slowed as household demand has dropped as cost of living pressures have increased. At the same time, exports from the Northern Territory have dropped as

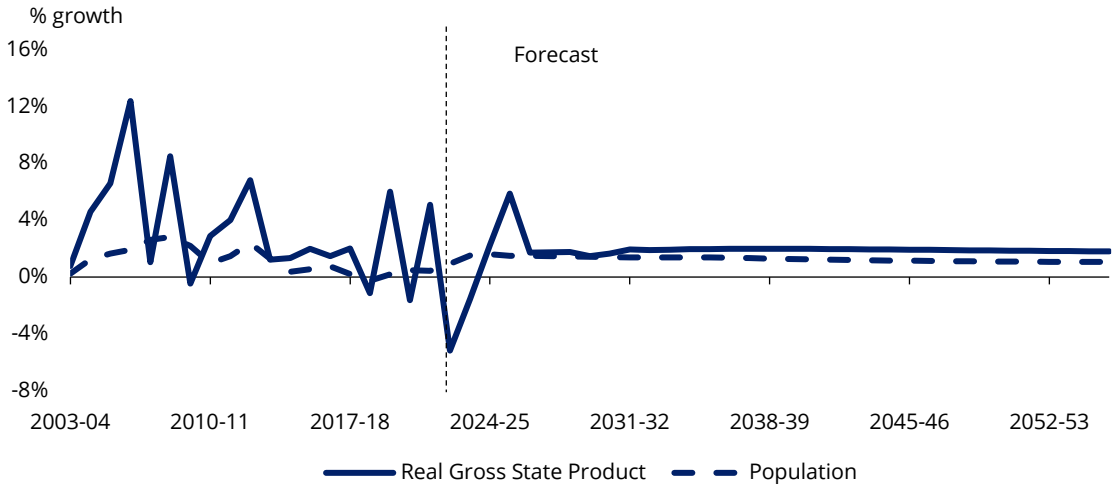
the large Bayu-Undan liquified natural gas project ceased production at the end of 2023. The Territory economy is largely driven by exports of energy and mineral products, and the closure of the plant is forecast to slow the Northern Territory economy.

Through 2024, national cost-of-living pressures are expected to ease as inflation and interest rates decline. This will increase household consumption in the Territory. At the same time, the Northern Territories' Barossa project is forecast to commence extraction and transport of natural gas in the first half of 2025, boosting the state's exports.[xv] This will see Northern Territory GSP grow by 2.3% in 2024-25 and 5.9% in 2025-26.

In the longer run, the Northern Territory economy is forecast to grow below the national level. This reflects a relatively lower labour force participation in the Territory, which is a driver of long run economic growth. Overall Northern Territory GSP growth is forecast to decrease over time from 1.9% in 2031-32 to 1.8% in 2055-56.

The mining industry is the Northern Territory's largest industry, and a key source of economic growth for the Territory. Nationally, the mining industry has defied the trend of a weaker economy in 2023 as commodity prices have remained elevated above long run-averages. Mining industry output is expected to gain pace in the medium turn, particularly in the Territory as the Barossa plant commences production. However, over the long run demand for fossil fuel commodities is expected to decrease as the global economy transitions towards net zero emissions. This will see the Territory's key industry decline as a share of the economy over time.

Chart 3.14: Real gross state product and population growth, Northern Territory



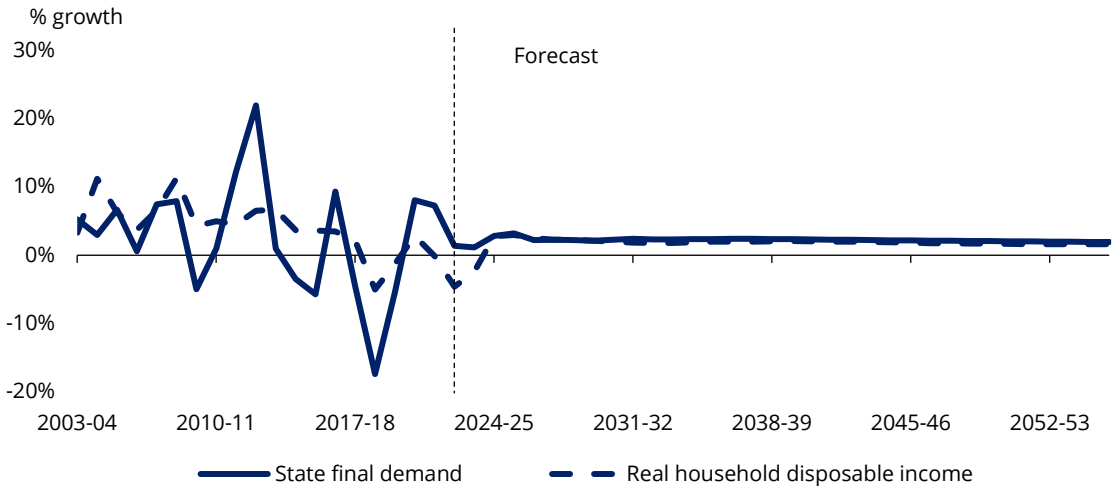
Source: Australian Bureau of Statistics (2023a, 2023e), Deloitte Access Economics

Household disposable income in the Northern Territory is expected to be boosted in line with national trends over 2024 as inflation eases, interest rates decline, and personal income tax cuts come into effect. This will see household disposable income in the Territory increase by 2.8 % in 2024-25 and 3.0% in 2025-26.

In the long run, the Northern Territory's household disposable income is forecast to grow above the national level, but still decline over time. Long run household disposable income is largely driven by employment and wages growth, and the Territory is forecast to have stronger employment growth than the national level through the forecast period. Household disposable income in the Territory is expected to reach 1.6% by 2055-56.

Growth in dwelling investment in the Northern Territory in the long run is expected to be driven by population growth and the formation of new households. From 2022-23 to 2055-56, dwelling completions in the Northern Territory are expected to grow by a CAGR of 3.6%, over national growth of 1.0% over the same period. This stronger growth is reflective of population growth in the Northern Territory above the national level over the forecast period.

Chart 3.15: State final demand and household disposable income, Northern Territory



Source: Australian Bureau of Statistics (2023b), Deloitte Access Economics

Table 3.8: Northern Territory outlook, Step Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$30	$32	$38	$47	$56	
CAGR over previous decade	*1.1%*	*1.5%*	*1.8%*	*2.0%*	*1.8%*	*1.9%*
State final demand						
$ billions	$30	$32	$40	$50	$61	
CAGR over previous decade	*-1.3%*	*-0.3%*	*2.3%*	*2.3%*	*2.0%*	*2.2%*
Household disposable income						
$ billions	$17	$18	$22	$26	$31	
Change over previous decade	*1.1%*	*0.4%*	*2.1%*	*2.0%*	*1.7%*	*1.8%*
Population						
Persons (thousands)	251	263	302	342	381	
CAGR over previous decade	*0.5%*	*0.8%*	*1.4%*	*1.2%*	*1.1%*	*1.3%*
Dwelling completions						
Total (thousands)	0.6	0.9	1.7	1.9	2.0	
CAGR over previous decade	*-7.9%*	*-6.9%*	*6.7%*	*0.8%*	*0.6%*	*3.6%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

3.3.8 Australian Capital Territory

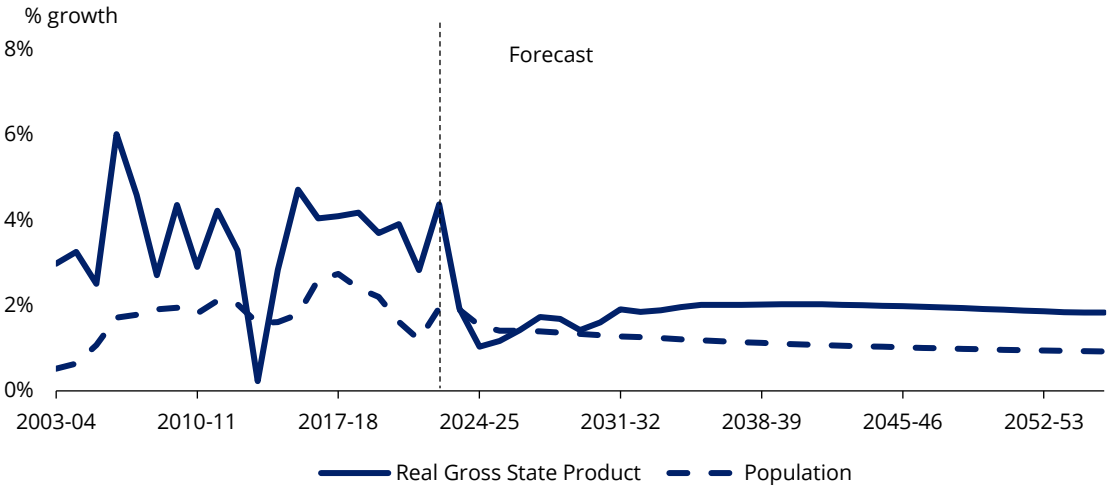
The Australian Capital Territory (ACT) population grew over 2023 as Australia saw a lift in net overseas migration. Temporary migrants, such as international students, drive much of this growth due to the ACT's tertiary education industry. Over the longer term, population growth in the ACT is expected to slow in line with national trends as fertility rates decline.

The ACT economy is forecast to slow in the near term as household consumption remains relatively subdued. As a large share of ACT households are employed in the federal public sector, the ACT has a relatively stronger degree of employment and income stability than other households.[7] This meant that ACT households were

[7] The Australian 2021 Census found that 30.5% of employed persons in the ACT work in the federal public sector, a significantly higher rate than the national rate of 3.8% of all employed persons in Australia.

somewhat more resistant to initial rises in cost of living pressures. However, more households are now feeling higher cost of living pressure and household consumption is forecast to weaken in the ACT in the near term.

Chart 3.16: Real gross state product and population growth, Australian Capital Territory



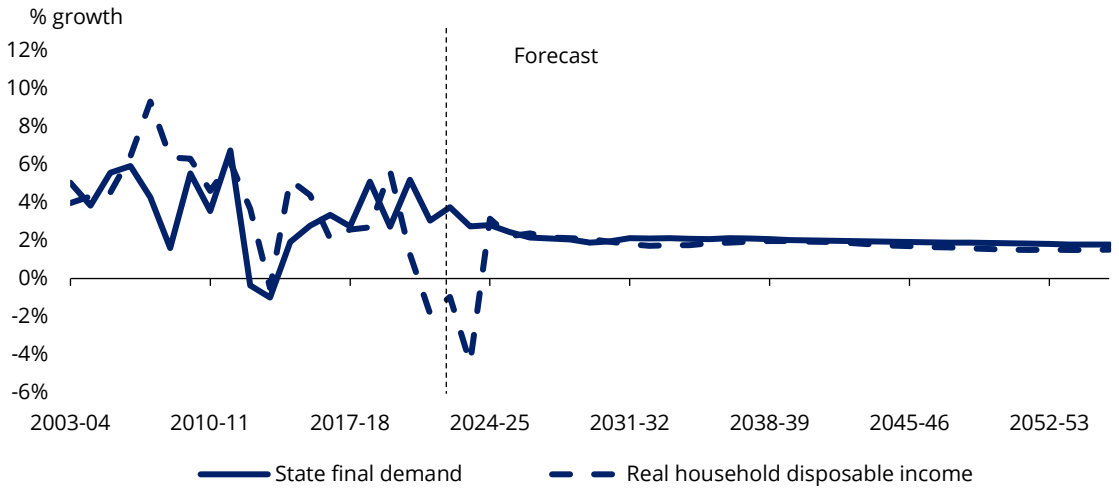
Source: Australian Bureau of Statistics (2023a, 2023e), Deloitte Access Economics

Through 2024 and 2025, economic growth in the territory is forecast to increase as domestic conditions improve. GSP growth is forecast to increase from 1.0% in 2024-25 to 1.2% in 2025-26. Over the long run, economic growth in the ACT will decline in accord with the national trend. GSP growth in the ACT will decline from 1.9% in 2031-32 to 1.8% by 2055-56.

The ACT's largest industry is the public administration and safety sector. This sector includes Federal Government employees, which account for a significant share of the ACT workforce. In the long run, population growth is a key driver of growth of the public sector, and other major ACT industries including education and training. Over the forecast period, growth in the public sector and education industries will decline in line with slowing population growth. As a large share of ACT households are employed in the public sector, average household incomes are higher than other jurisdictions. This provided some buffer for ACT households against weakening household disposable income due to higher interest rates and inflation. Growth in household disposable income will be supported by a decline in inflation and interest rates. ACT household disposable income is expected to increase by 3.2% in 2024-25 and 2.2% in 2025-26.

Over the forecast period, household disposable income in the ACT is expected to slow to 1.5% by 2055-56. Dwelling investment is forecast to grow by a CAGR of -0.6% from 2022-23 to 2055-56, below the national rate of growth. This reflects a weaker population growth forecast in the ACT relative to the national level.

Chart 3.17: State final demand and household disposable income, Australian Capital Territory



Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

Table 3.9: Australian Capital Territory outlook, Step Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$49	$51	$60	$74	$89	
CAGR over previous decade	*3.5%*	*3.6%*	*1.8%*	*2.0%*	*1.9%*	*1.8%*
State final demand						
$ billions	$66	$71	$87	$106	$128	
CAGR over previous decade	*3.0%*	*3.7%*	*2.1%*	*2.0%*	*1.8%*	*2.0%*
Household disposable income						
$ billions	$40	$41	$49	$59	$69	
Change over previous decade	*2.0%*	*1.6%*	*2.0%*	*1.9%*	*1.5%*	*1.7%*
Population						
Persons (thousands)	463	486	553	616	678	
CAGR over previous decade	*2.0%*	*2.1%*	*1.3%*	*1.1%*	*1.0%*	*1.2%*
Dwelling completions						
Total (thousands)	5.3	4.7	3.9	4.2	4.3	
CAGR over previous decade	*0.5%*	*3.7%*	*-1.9%*	*0.7%*	*0.3%*	*-0.6%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

4 Green Energy Exports

4.1 Overview of the scenario

4.1.1 Scenario narrative

The Green Energy Exports scenario assumes a rapid electrification of the energy sector to support the close coordination of an economy-wide transition to net zero emissions. Green Energy Exports assumes a faster pace of decarbonisation and a faster pace of economic growth compared to both the Step Change and Progressive Change scenarios.

The strong macroeconomic outlook for the global and Australian economies is expected to support the development and uptake of technologies required to drive the energy transition. Investments in decarbonisation under the Green Energy Exports scenario are expected to increase at a significantly faster pace than observed in either the Step Change or Progressive Change scenarios, leading to faster and deeper cuts to emissions across the economy.

Australian domestic policy is expected to be supported by international efforts, with positive macroeconomic spillovers generated from the transition. This presents a future pathway of limiting global temperature rises to 1.5°C compared to pre-industrial levels, while meeting the commitments of the Paris Agreement.

The rapid transformation of the energy sector is facilitated by assumed falls in the cost of renewable energy investments, as well as a strong appetite and willingness to invest in CER and EVs. The cost of technology that facilitates the expansion of 'green commodity' exports such as hydrogen is expected to fall rapidly, and this provides a new export market for Australia.

The level of hydrogen production is assumed to steadily increase and is provided for both domestic and export use, which will supplement the forecast decline of more carbon-intensive energy exports such as coal.

4.1.2 Economic and demographic assumptions

The Green Energy Exports scenario assumes a faster rate of growth in the Australian population, as well as the global and Australian economies when compared to the Step Change and Progressive Change scenarios.

Deloitte Access Economics uses several assumptions when producing forecasts for the Australian population and economy in the Green Energy Exports scenario. The assumptions underpinning the Green Energy Exports scenario are outlined below.

Population

Changes in Australia's population occur via natural increase (births minus deaths) and net overseas migration. Levels of net overseas migration are largely driven by a range of external social, economic, and political factors.

Under the Green Energy Exports scenario, the level of net overseas migration to Australia is forecast to average 300,000 persons per annum over the medium and longer term. This is above the 'High' scenario adopted by the ABS in the population projections data release[8] and compares to an average of 215,000 persons per annum in the decade to 2022-23.

The rate of natural increase in the population is influenced by assumptions around the total fertility rate. The total fertility rate is forecast to increase from an estimated 1.62 in 2022-23 to 1.73 by the end of the forecast period in 2055-56, in line with the ABS 'High' scenario[9].

[8] The ABS population projections include a long run assumption of 225,000 net migrants per annum in the base case, 175,000 per annum in the low case and 275,000 per annum in the high case.

[9] The ABS population projections include a long run assumption for the TFR of 1.60 in the base case, 1.45 in the low case and 1.75 in the high case.

Productivity

The rate of productivity growth is determined by government policy, business decisions and changes in the structure of the global and Australian economies. Productivity growth is fundamental to forecasts for economic growth in the long term. It is the main source of per capita income growth and therefore flows through to a larger economy and higher industry output.

The Green Energy Exports scenario assumes long term productivity growth of 1.4% per annum (before considering the effect of specified climate change related parameters on productivity). This is in line with the level specified in the 2023 Intergenerational Report 'High' scenario[10] and exceeds the average observed in the two decades to 2022-23.

4.1.3 Climate change assumptions

The Green Energy Exports scenario maps to the IEA's Net Zero Emissions (NZE) scenario and RCP 1.9. The NZE scenario and RCP 1.9 describe a decarbonisation pathway in which the global economy achieves net zero emissions by 2050 with several advanced economies reaching net zero earlier. Global efforts to decarbonise are very well coordinated and rapid mitigation policies limit the rise in global mean temperature relative to the pre-industrial period to less than 1.5˚C by 2100.

In the Green Energy Exports scenario, the Australian economy achieves net zero emissions well before 2050. This is enabled by capitalising on Australia's abundant natural endowment of sun, wind, and water. Strategic and swift investment in renewable energy infrastructure allows Australia to produce green hydrogen. Deloitte Access economics assumes that the capital expenditure required to achieve this outcome surges over the next 15 years. Renewable sources of energy and green hydrogen power the economy. Additionally, global demand and the favourable domestic economics allow Australia to become a hydrogen exporter. However, while green energy infrastructure and hydrogen exports add to the economy, a fall in traditional exports such as thermal coal dent gains in GDP. Australia's mining sector shrinks as a share of the economy over the forecast period while growth in services accelerates.

4.2 National forecasts and outlook

4.2.1 Gross domestic product

In the short term, the global economy achieves a soft landing where inflation across most economies returns quickly to trend while at the same time global economic growth rebounds solidly.

In the domestic economy, inflation also rapidly returns to within the RBA target band and GDP growth rebounds faster than in Step Change. Improved growth leads to a tighter labour market, stronger wage growth and a faster recovery in consumer spending. Productivity growth strengthens due to increased investment in new technologies. Elevated migration boosts population growth relative to Step Change.

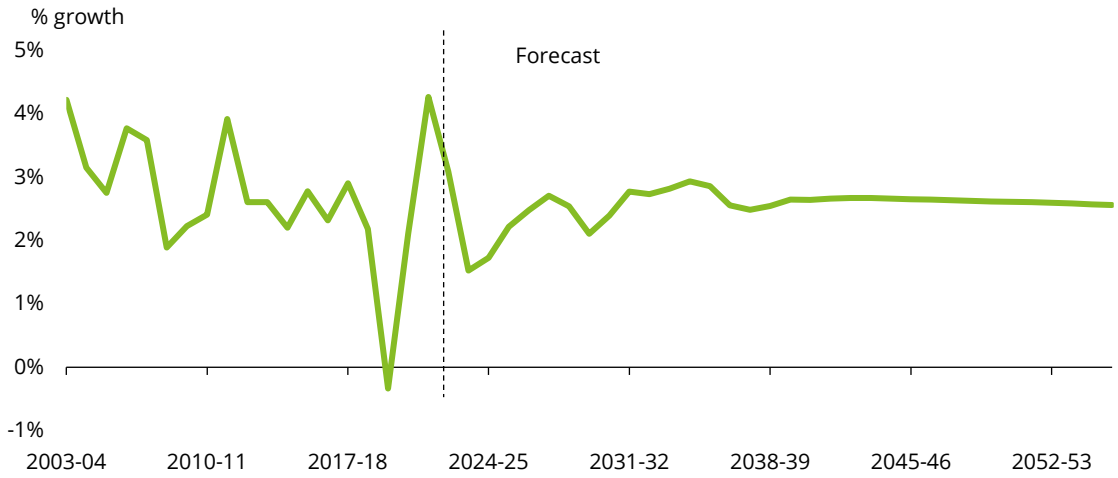
Over the longer run, productivity continues to grow strongly relative to the Step Change scenario as more investment leads to increased capital stock making workers more productive. Increased numbers of overseas migrants leads to increased population and economic growth.

The adverse effects of climate change are less damaging in comparison to the Step Change scenario. This reflects improved global coordination on climate change, a faster rollout of renewable energy technology and increased investment in the energy system. More muted physical damages reduce the hit to productivity and GDP growth in the Green Energy Exports scenario relative to Step Change.

The long run drivers of GDP growth are more favourable relative to Step Change, including higher population and productivity growth while the risks from climate change are also reduced. GDP growth is forecast to decline from around 2.8% in 2031-32 to 2.6% by 2055-56 (Chart 4.1).

[10] The 2023 Intergenerational Report includes a long run assumption of 1.2% annual growth in labour productivity in the base case, 0.9% in the low case and 1.5% in the high case. The 2023 Intergenerational Report is available here: https://treasury.gov.au/sites/default/files/2023-08/p2023-435150.pdf

Chart 4.1: Green Energy Exports gross domestic product growth, Australia, 2003-04 – 2055-56



Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

4.2.2 Household disposable income

In line with a stronger profile for GDP growth relative to the Step Change scenario, household disposable income growth is also stronger in the Green Energy exports scenario. Over the long term, higher productivity growth causes faster wage growth leading disposable income to be 24% higher compared to the Step Change scenario by 2055-56.

4.2.3 Dwelling investment

In the near term a rapid unwinding of labour shortages and capacity constraints in the residential construction sector causes a lift in dwelling investment and completions relative to the Step Change scenario. In the longer run higher population growth and household formation also leads to higher underlying demand for new housing. This leads to a higher level of dwelling investment and completions. Dwelling completions are 16% higher in 2055-56 compared to the Step Change scenario.

4.2.4 Industry output

Compared to the Step Change scenario, higher productivity and population growth increase the total size of the economy and therefore improve the output growth profile for all industries.

These economic and demographic factors are the primary driver of higher output in the services industries. However, the emergence of an Australian and global green hydrogen industry has important implications for several other industries.

The manufacturing industry will see higher output from hydrogen production. However, the outlook for the mining industry is more mixed as fossil fuel exports such as thermal coal are phased out from use in the global economy during the transition to net zero.

The longer run growth in the mining industry is increasingly driven by the production and export of critical minerals that are used in the manufacture of renewable energy technologies including batteries and wind turbines.

Output in the utilities industry increases as demand for green energy power rises over the longer run. The construction industry will also benefit as the necessary infrastructure to manufacture and export hydrogen is developed.

4.2.5 Exchange rate

The main factor affecting the AUD/USD exchange rate relative to the Step Change scenario is a stronger global economy that increases demand for Australian exports and increases the terms of trade, putting upward pressure on the Australian dollar.

Over the longer run interest rates in both countries are expected to stabilise at equilibrium levels. With similar technological changes affecting both Australia and the United States economies, there is expected to be little change in the interest rate differential between the two countries relative to the Step Change scenario. While interest rates are expected to differ in both countries relative to Step Change, the interest rate differential is expected to remain unchanged relative to the Step Change scenario. The exchange rate is expected to settle at $A1.42 over the long term.

4.2.6 Forecast summary

Table 4.1 below provides a summary of the key national-level forecasts for the Green Energy Exports scenario.

Table 4.1: Forecast summary for the 'Green Energy Exports scenario

	History	Forecast				
	2022-23	2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross domestic product						
$ billions	$2,405	$2,540	$3,294	$4,267	$5,519	
CAGR over previous decade	2.4%	2.2%	2.6%	2.6%	2.6%	2.5%
Household disposable income						
$ billions	$1,395	$1,487	$1,926	$2,472	$3,148	
CAGR over previous decade	1.6%	1.6%	2.6%	2.5%	2.4%	2.5%
AUD:USD exchange rate						
$A/$US	$1.49	$1.39	$1.40	$1.40	$1.40	
Change over previous decade	4.3%	0.1%	0.1%	0.0%	0.0%	-0.2%
Population						
Persons (millions)	26.4	27.9	32.5	37.1	41.8	
CAGR over previous decade	1.4%	1.5%	1.5%	1.3%	1.2%	1.4%
Gross value added by industry						
Agriculture ($ billion)	$64.0	$64.3	$74.8	$87.1	$99.5	
CAGR over previous decade	1.8%	2.3%	1.5%	1.5%	1.3%	1.3%
Mining ($ billion)	$321.1	$320.2	$375.9	$428.5	$492.8	
CAGR over previous decade	3.4%	1.0%	1.6%	1.3%	1.4%	1.3%
Manufacturing ($ billion)	$124.0	$124.9	$134.9	$139.2	$137.9	
CAGR over previous decade	-0.4%	0.2%	0.8%	0.3%	-0.1%	0.3%
Utilities ($ billions)	$45.2	$46.3	$53.4	$54.5	$57.6	
CAGR over previous decade	0.6%	0.6%	1.4%	0.2%	0.6%	0.7%
Construction ($ billion)	$158.5	$170.9	$220.4	$244.3	$282.5	
CAGR over previous decade	0.3%	1.0%	2.6%	1.0%	1.5%	1.8%
Services ($ billion)	$1,343	$1,450	$1,983	$2,706	$3,655	
CAGR over previous decade	3.1%	3.0%	3.2%	3.2%	3.1%	3.1%

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023d, 2023e), Reserve Bank of Australia, Deloitte Access Economics

4.3 State and territory forecasts and outlook

Faster population growth and more robust labour productivity gains relative to the Step Change scenario are distributed proportionally through the economy. A larger national economy and a faster growth profile are reflected at the state and territory level. Additionally, the economy is not constrained by the target net emissions pathway in the Green Energy Exports scenario, unlike in the Step Change and Progressive Change scenarios. Instead, active investment in renewable energy, including hydrogen, and the quicker uptake of clean technology among consumers allows the economy to reach net-zero carbon emissions well before 2050. This rapid decarbonisation is the driving force behind industry composition in this scenario. The relatively strong global macroeconomic outlook in the Green Energy Exports scenario also creates export demand for Australia's hydrogen production.

Changes in state and territory dwelling investment in the Green Energy Exports scenario reflect changes at the national level. In the longer term, higher population growth and household formation is expected to drive increased demand for new housing. This leads to higher levels of dwelling completions in each state and territory relative to the Step Change scenario. Relative differences in dwelling completion forecasts between the states and territories reflect differences in underlying drivers including population, household formation, and the state or territory growth profile.

4.3.1 New South Wales

New South Wales will benefit from elevated flows of net overseas migration and a high total fertility rate in the Green Energy Exports Scenario. This will result in the New South Wales population increasing by an average of 140,000 people per year over the forecast period.

New South Wales real GSP is forecast to grow in line with the national outlook. Improved global coordination on climate change policy and clean technology is projected to result in less damaging physical and transition impacts on the economy. Real GSP growth moderates as population and labour productivity stabilise over the long run. Overall real GSP in New South Wales is forecast to record a healthy CAGR of 2.6% over the forecast period. The cluster of services sectors that are key to the New South Wales economy grow faster than the state economy. Key sectors such as financial and insurance services, professional, scientific, and technical services, and healthcare services are projected to record strong growth over the forecast period.

Real household disposable income in New South Wales is projected to increase at a CAGR of 2.5% over the forecast period, significantly faster than 1.8% in the Step Change scenario. Over the long term, forecast higher productivity growth drives faster wage growth, driving higher disposable income.

Table 4.2: New South Wales outlook, Green Energy Exports Scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$734	$772	$1,003	$1,302	$1,688	
CAGR over previous decade	*2.4%*	*2.4%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*
State final demand						
$ billions	$716	$768	$1,017	$1,341	$1,740	
CAGR over previous decade	*2.8%*	*3.0%*	*2.8%*	*2.8%*	*2.6%*	*2.7%*
Household disposable income						
$ billions	$458	$488	$626	$803	$1,026	
Change over previous decade	*1.9%*	*1.9%*	*2.5%*	*2.5%*	*2.5%*	*2.5%*
Population						
Persons (thousands)	8,273	8,715	10,098	11,494	12,898	
CAGR over previous decade	*1.2%*	*1.4%*	*1.5%*	*1.3%*	*1.2%*	*1.4%*
Dwelling completions						
Total (thousands)	48.6	42.4	67.0	74.1	78.6	
CAGR over previous decade	*3.9%*	*-2.2%*	*4.7%*	*1.0%*	*0.6%*	*1.5%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

4.3.2 Victoria

Victoria's population is forecast to increase by an average of 147,000 people per year over the forecast period. The CAGR for population is projected to be 1.7% over the same period.

Real GSP is forecast to increase at a relatively rapid rate of 2.8% over the forecast period as the state gains from population growth and productivity improvements. Services drive growth through the forecast. The sizeable manufacturing sector grows over the medium term before structural forces result in a gentle downward trend. This contrasts with the Step Change scenario where the effects of climate change and the need to reduce emissions results in a steady downward trend in manufacturing output through the forecast.

Forecast higher productivity growth is expected to lead to faster wage growth, driving higher disposable income. Real household disposable income is forecast to increase at the rate of 2.7% over the forecast horizon, outpacing growth at the national level.

Table 4.3: Victoria outlook, Green Energy Exports Scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$536	$571	$768	$1,020	$1,345	
CAGR over previous decade	*2.7%*	*2.9%*	*3.0%*	*2.9%*	*2.8%*	*2.8%*
State final demand						
$ billions	$575	$618	$840	$1,139	$1,508	
CAGR over previous decade	*3.3%*	*3.5%*	*3.1%*	*3.1%*	*2.8%*	*3.0%*
Household disposable income						
$ billions	$327	$352	$471	$616	$786	
Change over previous decade	*1.8%*	*1.9%*	*3.0%*	*2.7%*	*2.5%*	*2.7%*
Population						
Persons (thousands)	6,744	7,201	8,637	10,105	11,586	
CAGR over previous decade	*1.6%*	*1.9%*	*1.8%*	*1.6%*	*1.4%*	*1.7%*
Dwelling completions						
Total (thousands)	56.5	59.3	75.5	84.9	89.7	
CAGR over previous decade	*1.2%*	*0.1%*	*2.5%*	*1.2%*	*0.6%*	*1.4%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

4.3.3 Queensland

Queensland is projected to add an average of 99,000 people per year over the forecast period. This translates into a CAGR of 1.4% over the forecast horizon.

Under the Green Energy Exports scenario, Queensland's real GSP is forecast to grow in line with the national outlook, recording a CAGR of 2.6%. The services sectors are forecast to record strong growth. Growth in mining moderates as coal production comes under pressure, but manufacturing output accelerates as hydrogen is produced for domestic use and for export overseas.

Queensland's real household disposable income is forecast to grow at a CAGR of 2.6% through the forecast period. This is significantly faster than 2.0% in the Step Change scenario. Over the long term, forecast higher productivity growth is expected to lead to faster wage growth, driving higher disposable income.

Table 4.4: Queensland outlook, Green Energy Exports Scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$465	$497	$645	$833	$1,077	
CAGR over previous decade	*2.2%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*	*2.6%*
State final demand						
$ billions	$437	$476	$647	$862	$1,126	
CAGR over previous decade	*1.6%*	*2.8%*	*3.1%*	*2.9%*	*2.7%*	*2.9%*
Household disposable income						
$ billions	$271	$294	$382	$495	$640	
Change over previous decade	*1.6%*	*2.1%*	*2.7%*	*2.6%*	*2.6%*	*2.6%*
Population						
Persons (thousands)	5,405	5,720	6,704	7,684	8,659	
CAGR over previous decade	*1.6%*	*1.9%*	*1.6%*	*1.4%*	*1.2%*	*1.4%*
Dwelling completions						
Total (thousands)	32.3	35.2	56.5	61.7	64.8	
CAGR over previous decade	*1.2%*	*-1.0%*	*4.8%*	*0.9%*	*0.5%*	*2.1%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

4.3.4 South Australia

South Australia's population is forecast to grow at a CAGR of 0.8% over the forecast period, increasing by an average of 18,000 people per year over the forecast horizon.

Real GSP is forecast to grow at a rate of 2.1% under the Green Energy Exports scenario, quicker than 1.5% in Step Change. Growth in services is expected to be strong through the forecast period. The agriculture sector records relatively strong growth and the downward trend in manufacturing output is expected to flatten in this scenario.

Real household disposable income is forecast to grow at a CAGR of 2.0% over the forecast period in South Australia. Over the long term, higher productivity growth in South Australia is expected to lead to faster wage growth, driving higher disposable income.

Table 4.5: South Australia outlook, Green Energy Exports Scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$134	$141	$174	$215	$267	
CAGR over previous decade	*2.1%*	*2.4%*	*2.1%*	*2.2%*	*2.2%*	*2.1%*
State final demand						
$ billions	$144	$154	$192	$242	$303	
CAGR over previous decade	*2.5%*	*2.9%*	*2.2%*	*2.3%*	*2.3%*	*2.3%*
Household disposable income						
$ billions	$86	$90	$109	$133	$163	
Change over previous decade	*1.0%*	*1.1%*	*2.0%*	*2.0%*	*2.1%*	*2.0%*
Population						
Persons (thousands)	1,841	1,905	2,088	2,262	2,433	
CAGR over previous decade	*1.0%*	*1.2%*	*0.9%*	*0.8%*	*0.7%*	*0.8%*
Dwelling completions						
Total (thousands)	11.6	11.9	9.2	9.6	10.1	
CAGR over previous decade	*3.3%*	*1.7%*	*-2.5%*	*0.3%*	*0.5%*	*-0.4%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

4.3.5 Western Australia

Population in Western Australia is forecast to grow at a CAGR of 1.3% over the forecast period. This implies that Western Australia is expected to add an average of 47,000 people to its population each year.

In line with national trends, Western Australian real GSP is expected to grow at 2.3% through the forecast, faster than 1.7% under Step Change. Mining is forecast to remain significant to the state economy but the sector's share of GSP is expected to be eroded over time. Manufacturing grows at a relatively healthy pace through the forecast and construction gets a medium-term boost from the capital expenditure required to build renewable energy capacity. The services sectors grow at a steady pace through the forecast.

Western Australia's real household disposable income is projected to grow at a CAGR of 2.4% from 2022-23 to 2055-56. Higher household disposable income is driven by higher productivity growth which is expected to lead to faster wage growth in Western Australia.

Table 4.6: Western Australia outlook, Green Energy Exports Scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$419	$433	$550	$699	$891	
CAGR over previous decade	*2.3%*	*1.8%*	*2.4%*	*2.4%*	*2.5%*	*2.3%*
State final demand						
$ billions	$256	$288	$380	$494	$633	
CAGR over previous decade	*0.0%*	*1.5%*	*2.8%*	*2.6%*	*2.5%*	*2.8%*
Household disposable income						
$ billions	$166	$176	$229	$289	$364	
Change over previous decade	*0.9%*	*1.0%*	*2.7%*	*2.4%*	*2.3%*	*2.4%*
Population						
Persons (thousands)	2,845	3,004	3,461	3,916	4,360	
CAGR over previous decade	*1.4%*	*1.7%*	*1.4%*	*1.2%*	*1.1%*	*1.3%*
Dwelling completions						
Total (thousands)	15.2	17.2	20.8	23.2	24.0	
CAGR over previous decade	*-2.0%*	*-6.2%*	*1.9%*	*1.1%*	*0.3%*	*1.4%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

4.3.6 Tasmania

Tasmania's population is projected to grow at a CAGR of 0.5% from 2022-23 to 2055-56. This is marginally faster than 0.3% in the Step Change scenario.

Real GSP is projected to grow at a CAGR of 1.9% over the forecast horizon, up from 1.3% in Step Change. Healthcare services underpin overall growth. Tasmania's agriculture sector output is relatively protected from the physical effects of climate change in comparison to the Step Change scenario.

Real household disposable income in Tasmania is forecast to grow at a CAGR of 1.6% over the forecast period. Higher productivity growth in the long term is expected to lead to faster wage growth, driving higher disposable income.

Table 4.7: Tasmania outlook, Green Energy Exports Scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$39	$40	$48	$59	$72	
CAGR over previous decade	*2.3%*	*2.5%*	*1.9%*	*2.0%*	*2.0%*	*1.9%*
State final demand						
$ billions	$44	$46	$55	$67	$83	
CAGR over previous decade	*2.8%*	*2.9%*	*1.9%*	*2.1%*	*2.1%*	*2.0%*
Household disposable income						
$ billions	$28	$29	$33	$39	$47	
Change over previous decade	*1.6%*	*1.4%*	*1.5%*	*1.5%*	*1.8%*	*1.6%*
Population						
Persons (thousands)	572	582	613	645	679	
CAGR over previous decade	*1.1%*	*1.2%*	*0.5%*	*0.5%*	*0.5%*	*0.5%*
Dwelling completions						
Total (thousands)	3.4	2.7	1.8	1.7	1.9	
CAGR over previous decade	*4.6%*	*0.0%*	*-4.0%*	*-0.6%*	*1.4%*	*-1.8%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

4.3.7 Northern Territory

Population in the Northern Territory is forecast to grow at a CAGR of 1.5% over the forecast period.

Real GSP is projected to grow at a rate of 2.5% through the forecast. The near term opening of the Barossa project is still expected to commence under this scenario, boosting the Territory's near-term output. Over the long run, the mining industry will see the decline of carbon-intensive energy exports including gas.

The Territory's real household disposable income is forecast to grow at a CAGR of 2.5% over the forecast period. Higher productivity growth in the long term in the Green Energy Exports is expected to cause faster wage growth, driving higher disposable income.

Table 4.8: Northern Territory outlook, Green Energy Exports Scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$30	$33	$41	$53	$69	
CAGR over previous decade	*1.1%*	*1.6%*	*2.4%*	*2.5%*	*2.6%*	*2.5%*
State final demand						
$ billions	$30	$32	$43	$58	$76	
CAGR over previous decade	*-1.3%*	*-0.2%*	*3.0%*	*3.0%*	*2.8%*	*2.9%*
Household disposable income						
$ billions	$17	$18	$23	$30	$39	
Change over previous decade	*1.1%*	*0.6%*	*2.6%*	*2.6%*	*2.5%*	*2.5%*
Population						
Persons (thousands)	251	264	310	358	408	
CAGR over previous decade	*0.5%*	*0.8%*	*1.6%*	*1.5%*	*1.3%*	*1.5%*
Dwelling completions						
Total (thousands)	0.6	0.9	1.8	2.0	2.2	
CAGR over previous decade	*-7.9%*	*-6.9%*	*7.1%*	*1.2%*	*1.0%*	*3.9%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

4.3.8 Australian Capital Territory

The ACT's population is forecast to grow at a CAGR of 1.4% over the forecast period.

Real GSP in the ACT is forecast to grow faster than in the Step Change scenario, in line with national trends. Real GSP growth is expected to be driven by growth in key sectors such as the public administration, healthcare, and professional services. The ACT's large services sectors and relatively small industrial production sectors insulate it from the vagaries of climate change relative to Australia's other regions.

Real household disposable income in the ACT is forecast to grow at a CAGR of 2.3% over the forecast period. Over the long term, forecast higher productivity growth causes faster wage growth, driving higher disposable income.

Table 4.9: Australian Capital Territory outlook, Green Energy Exports Scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$49	$52	$65	$85	$110	
CAGR over previous decade	*3.5%*	*3.8%*	*2.4%*	*2.6%*	*2.6%*	*2.5%*
State final demand						
$ billions	$66	$72	$94	$123	$159	
CAGR over previous decade	*3.0%*	*3.9%*	*2.7%*	*2.7%*	*2.6%*	*2.7%*
Household disposable income						
$ billions	$40	$41	$53	$68	$86	
Change over previous decade	*2.0%*	*1.8%*	*2.5%*	*2.5%*	*2.4%*	*2.3%*
Population						
Persons (thousands)	463	487	566	645	726	
CAGR over previous decade	*2.0%*	*2.2%*	*1.5%*	*1.3%*	*1.2%*	*1.4%*
Dwelling completions						
Total (thousands)	5.3	4.7	4.2	4.7	5.0	
CAGR over previous decade	*0.5%*	*3.8%*	*-1.2%*	*1.1%*	*0.6%*	*-0.2%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

5 Progressive Change

5.1 Overview of the scenario

5.1.1 Scenario narrative

The Progressive Change scenario tests the needs of the NEM amid a slower energy transition compared to other scenarios. The Progressive Change scenario assumes a slower pace of decarbonisation and weaker macroeconomic outlook compared to the Green Energy Exports and Step Change scenarios. Progressive Change is consistent with achieving a 43% emissions reduction by 2030 but is inconsistent with describing a pathway of limiting global temperature rise to below 2°C compared to pre-industrial levels.

The weaker economic outlook is expected to weigh on investment in the energy transition, while disruptions to international energy markets and associated supply chains persist. Lower disposable incomes combined with slower and smaller cost reductions weigh on the uptake of green technologies such as CER and EVs compared to the other scenarios. This contributes to more muted improvements in energy efficiency in the Progressive Change scenario. Hydrogen production is assumed to remain low and be limited to domestic use only in this scenario. This weighs on the electrification of the transport industry and limits the economic advantages from the net zero transition.

Non-renewable energy sources play a more significant role in the Progressive Change scenario, with the amount of electrification assumed to be 32% below the level seen in 2050 in the Step Change scenario and 42% below the level seen in the Green Energy Exports scenario.

5.1.2 Economic and demographic assumptions

The Progressive Change scenario assumes a slower rate of growth in the Australian population, as well as the global and Australian economies when compared to the Step Change and Green Energy Export scenarios. Deloitte Access Economics uses several assumptions when producing forecasts for the Australian population and economy. As noted in earlier chapters, these assumptions include net overseas migration and the total fertility rate with respect to population forecasts and the rate of growth in labour productivity with respect to forecasts for the Australian economy. The assumptions underpinning the Progressive Change scenario are outlined below.

Population

Changes in Australia's population occur via natural increase (births minus deaths) and net overseas migration. Levels of net overseas migration are largely driven by a range of external social, economic, and political factors.

Under the Progressive Change scenario, the level of net overseas migration to Australia is assumed to average 200,000 persons per annum over the medium and longer term. This is above the 'Low' scenario adopted by the ABS in the population projections data release[11] and compares to an average of 215,000 persons per annum in the decade to 2022-23. The total fertility rate is assumed to fall from an estimated 1.62 in 2022-23 to 1.43 by the end of the forecast period in 2055-56, in line with the ABS 'Low' scenario.[12]

Productivity

The rate of productivity growth is determined by government policy, business decisions and changes in the structure of the global and Australian economies. The Progressive Change scenario assumes long term productivity growth of 0.9% per annum (before considering the effect of specified climate change related parameters on productivity).

[11] The ABS population projections include a long run assumption of 225,000 net migrants per annum in the base case, 175,000 per annum in the low case and 275,000 per annum in the high case.

[12] The ABS population projections include a long run assumption for the TFR of 1.60 in the base case, 1.45 in the low case and 1.75 in the high case.

This is in line with the level specified in the 2023 Intergenerational Report 'Low' scenario[13] and the average observed in the two decades to 2022-23.

5.1.3 Climate change assumptions

The Progressive Change scenario unfolds against the backdrop of the of the IEA's Stated Policies Scenario (STEPS) and aligns to RCP 4.5. The STEPS is a conservative scenario in which policies and participants do not combine beyond the current rate of change to produce a surge in clean energy investment or decarbonisation. Instead, business proceeds as usual. This implies that though clean energy investment continues, it gradually turns out to be a case of too little too late. As a result, the global mean temperature relative to the pre-industrial period is projected to rise above 2˚C by 2100.

Deloitte Access Economics models a higher magnitude of physical damages from climate change in this scenario. Relatively lower consumer uptake of clean energy technology and a more challenging and less coordinated global backdrop results in slower and less efficient climate action.

Deloitte Access Economics' modelling of the Progressive Change scenario assumes that the emissions intensity of economic activity by industry is consistent with the 'baseline' scenario published by DCCEEW in November 2023.[xvi] AEMO's assumption that there is no temporary overshooting of the target net emissions pathway is a binding constraint on economic activity in the Progressive Change scenario. As such, Deloitte Access Economics' modelling imposes reductions in economic activity to ensure the target net emissions pathway is not exceeded. The industry structure of the Australian economy changes throughout the forecast.

5.2 National forecasts and outlook

5.2.1 Gross domestic product

Monetary policy tightening by overseas central banks and persistently high global inflation leads to a more pronounced slowdown in the global economy relative to the Step Change scenario. Supply chain barriers are slow to unwind as geopolitical tensions continue to weigh on global economic activity.

The slowdown in productivity growth following the COVID-19 pandemic continues, providing a headwind for domestic economic growth. Softer labour market conditions, weaker wage growth and a slow recovery in consumer spending also weigh on activity.

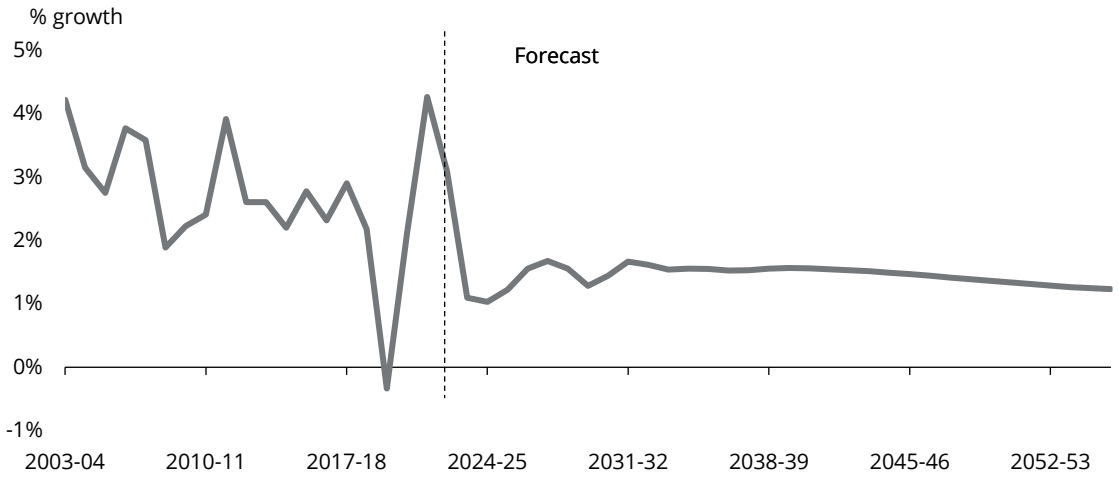
A more rapid decline in net overseas migration sees population growth decline faster than the Step Change scenario, putting further downward pressure on economic growth. Productivity growth fails to rebound from the post-pandemic slump, entrenching lower GDP growth in the long run. Population growth remains subdued due to low fertility rates and low overseas migration.

Poor global coordination on climate change and a slower rollout of renewable energy technology leads to greater effects from physical and transition risks. Increased heat stress and extreme weather events harm productivity and economic growth.

GDP growth is forecast to decelerate over the forecast period reflecting weakening population growth, productivity growth and labour force participation rates (see Chart 5.1). GDP growth in the Progressive Change scenario is forecast to decline from around 1.7% in 2031-32 to 1.2% by 2055-56.

[13] The 2023 Intergenerational Report includes a long run assumption of 1.2% annual growth in labour productivity in the base case, 0.9% in the low case and 1.5% in the high case. The 2023 Intergenerational Report is available here: https://treasury.gov.au/sites/default/files/2023-08/p2023-435150.pdf

Chart 5.1: Progressive Change gross domestic product growth, Australia



Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

5.2.2 Household disposable income

In line with a weaker profile for GDP growth relative to the Step Change scenario, household disposable income growth is also weaker in the Progressive Change scenario.

Over the long term, weak productivity growth causes slower wage growth leading disposable income to be 13% lower compared to the Step Change scenario by 2055-56.

5.2.3 Dwelling investment

Continued labour shortages and capacity constraints in the residential construction sector hamper growth in dwelling investment and dwelling completions. In the longer run lower population growth and household formation also leads to lower underlying demand for new housing relative to the Step Change scenario. This leads to a lower level of housing commencements and completions.

Overall, dwelling completions are forecast to be around 10% lower in 2055-56 compared to the Step Change scenario.

5.2.4 Industry output

Compared to the Step Change scenario, lower productivity and population growth reduce the total size of the economy and influence the growth profile for all industries.

Industries with higher emissions intensities experience lower growth in the Progressive Change scenario due to the smaller population and lower productivity growth. These industries are also most affected by the constraint posed by the target emissions pathway required to achieve net zero emissions by 2050.

5.2.5 Exchange rate

The main factor affecting the AUD/USD exchange rate relative to the Step Change scenario is a weaker global economy that reduces demand for Australian exports and lowers the terms of trade, putting downward pressure on the Australian dollar.

Over the longer run, interest rates in both countries are expected to stabilise at equilibrium levels. With similar technological changes affecting both Australia and the United States economies, there is expected to be little change in the interest rate differential between the two countries relative to the Step Change scenario. While interest rates are expected to differ in both countries relative to Step Change, the interest rate differential is expected to remain unchanged. The exchange rate is expected to settle at $A1.44 in the long run.

5.2.6 Forecast summary

A summary of the key national-level forecasts for the Progressive Change scenario are shown in Table 5.1 below.

Table 5.1: Forecast summary for the Progressive Change scenario

	History	Forecast				
	2022-23	2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross domestic product						
$ billions	$2,405	$2,487	$2,899	$3,375	$3,852	
CAGR over previous decade	2.4%	2.0%	1.5%	1.5%	1.3%	1.4%
Household disposable income						
$ billions	$1,395	$1,455	$1,719	$1,999	$2,211	
CAGR over previous decade	1.6%	1.4%	1.7%	1.5%	1.0%	1.4%
AUD:USD exchange rate						
$A/$US	$1.49	$1.41	$1.44	$1.44	$1.44	
Change over previous decade	4.3%	0.2%	0.2%	0.0%	0.0%	-0.1%
Population						
Persons (millions)	26.4	27.7	30.8	33.4	35.8	
CAGR over previous decade	1.4%	1.4%	1.1%	0.8%	0.7%	0.9%
Gross value added by industry						
Agriculture ($ billion)	$64.0	$63.0	$67.1	$71.7	$74.2	
CAGR over previous decade	1.8%	2.1%	0.6%	0.7%	0.3%	0.5%
Mining ($ billion)	$321.1	$316.6	$357.6	$381.9	$399.8	
CAGR over previous decade	3.4%	0.9%	1.2%	0.7%	0.5%	0.7%
Manufacturing ($ billion)	$124.0	$119.8	$105.4	$95.0	$84.8	
CAGR over previous decade	-0.4%	-0.2%	-1.3%	-1.0%	-1.1%	-1.1%
Utilities ($ billions)	$45.2	$44.2	$43.1	$43.0	$42.1	
CAGR over previous decade	0.6%	0.2%	-0.3%	0.0%	-0.2%	-0.2%
Construction ($ billion)	$158.5	$164.1	$180.8	$197.6	$209.2	
CAGR over previous decade	0.3%	0.6%	1.0%	0.9%	0.6%	0.8%
Services ($ billion)	$1,343	$1,424	$1,744	$2,104	$2,471	
CAGR over previous decade	3.1%	2.8%	2.1%	1.9%	1.6%	1.9%

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023d, 2023e), Reserve Bank of Australia, Deloitte Access Economics

5.3 State and territory forecasts and outlook

A thinner contribution from net overseas migration and a sharper slowdown in the total fertility rate in the Progressive Change scenario relative to the Step Change scenario filters through to all states and territories. Slower population growth at the state and territory level is also accompanied by weaker growth in labour productivity. Additionally, the impact of climate change is heavier than in the Step Change scenario due to relatively muted decarbonisation efforts. Slower economic growth across all states and territories in the Progressive Change scenario reflects a combination of these factors.

Changes in national dwelling investment forecasts under the Progressive Change scenario flow through to the state and territory level. In the longer term, lower population growth and household formation is expected to decrease demand for new housing. This leads to lower levels of dwelling completions in each state and territory relative to the Step Change scenario. Relative differences in dwelling completion forecasts between the states

and territories reflect differences in underlying drivers including population, household formation, and the state or territory growth profile.

5.3.1 New South Wales

In New South Wales, population growth slows to 1.2% in 2025-26 from 1.8% in 2022-23. The state's population grows at a CAGR of just 0.8% over the forecast period.

Short term growth in GSP is projected to slow before posting a recovery in 2025-26. The slowdown is sharper, and the recovery is weaker in the Progressive Change scenario relative to the Step Change scenario. Longer term economic growth is driven by growth in population and productivity. Relatively slower growth in both these drivers results in real GSP growing at a CAGR of 1.4%, much slower than 1.9% in the Step Change scenario. Overall growth in real GSP through the forecast period continues to be supported by the services sectors of the New South Wales economy which grow faster than other parts of the economy.

Declining real household disposable income recovers in 2024-25 and grows at a stable rate over the medium term. Over the forecast period, real household disposable income records a CAGR of 1.3%.

Table 5.2: New South Wales outlook, Progressive Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$734	$756	$880	$1,024	$1,169	
CAGR over previous decade	*2.4%*	*2.2%*	*1.5%*	*1.5%*	*1.3%*	*1.4%*
State final demand						
$ billions	$716	$747	$878	$1,023	$1,165	
CAGR over previous decade	*2.8%*	*2.7%*	*1.6%*	*1.5%*	*1.3%*	*1.5%*
Household disposable income						
$ billions	$458	$477	$557	$643	$709	
Change over previous decade	*1.9%*	*1.6%*	*1.5%*	*1.5%*	*1.0%*	*1.3%*
Population						
Persons (thousands)	8,273	8,649	9,494	10,192	10,833	
CAGR over previous decade	*1.2%*	*1.3%*	*0.9%*	*0.7%*	*0.6%*	*0.8%*
Dwelling completions						
Total (thousands)	48.6	41.7	58.0	58.3	58.5	
CAGR over previous decade	*3.9%*	*-2.4%*	*3.4%*	*0.1%*	*0.0%*	*0.6%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

5.3.2 Victoria

Population growth in Victoria slows to 1.6% in 2025-26 from 2.4% in 2022-23. Victoria's population is projected to grow at a CAGR of 1.2% over the forecast period.

In the short term, growth in real GSP is projected to slow sharply to just 0.8% in 2024-25 before a gradual recovery returns growth to a more sustainable path. Over the entire forecast, Victoria's real GSP grows at a CAGR of 1.7%, slower than 2.2% in the Step Change scenario. Several services sectors grow faster than real GSP during the forecast period, but some key sectors such as manufacturing are hit hard by the effects of climate change, including the constraint imposed by the net emission target pathway required to meet Australia's climate commitments.

Real household disposable income starts growing again in 2024-25 and records a CAGR 1.6% over the forecast period.

Table 5.3: Victoria outlook, Progressive Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$536	$559	$674	$804	$937	
CAGR over previous decade	*2.7%*	*2.6%*	*1.9%*	*1.8%*	*1.5%*	*1.7%*
State final demand						
$ billions	$575	$602	$732	$885	$1,038	
CAGR over previous decade	*3.3%*	*3.2%*	*2.0%*	*1.9%*	*1.6%*	*1.8%*
Household disposable income						
$ billions	$327	$344	$420	$498	$552	
Change over previous decade	*1.8%*	*1.6%*	*2.0%*	*1.7%*	*1.0%*	*1.6%*
Population						
Persons (thousands)	6,744	7,147	8,156	9,054	9,898	
CAGR over previous decade	*1.6%*	*1.8%*	*1.3%*	*1.1%*	*0.9%*	*1.2%*
Dwelling completions						
Total (thousands)	56.5	58.5	66.9	70.0	71.7	
CAGR over previous decade	*1.2%*	*0.0%*	*1.4%*	*0.5%*	*0.2%*	*0.7%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

5.3.3 Queensland

Queensland's recent population growth, a result of both overseas and interstate migration, is projected to slow over the coming decade. The slowdown in population growth in the Progressive Change scenario is more pronounced than in the Step Change scenario. The state's population is projected to grow at a CAGR of 1.1% over the forecast period.

Real GSP growth slows gradually over the short run before stabilising in the medium term. Queensland's real GSP is projected to grow at a CAGR of 1.5% over the forecast period in the Progressive Change scenario, slower than 2.0% in the Step Change scenario. Growth in industrial production is muted over the forecast period as the mining, manufacturing, and utility sectors come under pressure from climate change and policy commitments to meet existing emission reduction commitments under the Progressive Change scenario. Real household disposable income is projected to rebound in 2024-25 and 2025-26 and record a CAGR of 1.6% over the entire forecast period.

Table 5.4: Queensland outlook, Progressive Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$465	$487	$571	$666	$761	
CAGR over previous decade	*2.2%*	*2.4%*	*1.6%*	*1.6%*	*1.3%*	*1.5%*
State final demand						
$ billions	$437	$466	$568	$676	$784	
CAGR over previous decade	*1.6%*	*2.5%*	*2.0%*	*1.8%*	*1.5%*	*1.8%*
Household disposable income						
$ billions	$271	$288	$343	$406	$460	
Change over previous decade	*1.6%*	*1.9%*	*1.8%*	*1.7%*	*1.2%*	*1.6%*
Population						
Persons (thousands)	5,405	5,691	6,429	7,061	7,641	
CAGR over previous decade	*1.6%*	*1.8%*	*1.2%*	*0.9%*	*0.8%*	*1.1%*
Dwelling completions						
Total (thousands)	32.3	34.9	52.5	53.6	53.0	
CAGR over previous decade	*1.2%*	*-1.1%*	*4.2%*	*0.2%*	*-0.1%*	*1.5%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

5.3.4 South Australia

South Australia's recent population growth is projected to slow sharply over the medium term in the Progressive Change scenario. The state's population is projected to grow at a CAGR of just 0.4% over the forecast period.

Real GSP growth slows sharply in 2024-25 and the subsequent recovery in growth is projected to be weak. Real GSP is projected to record a CAGR of 1.0% over the forecast period. The state's manufacturing sector continues to shrink. Existing structural challenges are likely to be compounded by the effects of climate change.

Real household disposable income is projected to start growing in 2024-25 after declining for two years. However, in the long run, real household disposable income is projected to grow at a relatively slow rate of 0.9%.

Table 5.5: South Australia outlook, Progressive Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$134	$138	$153	$171	$189	
CAGR over previous decade	*2.1%*	*2.2%*	*1.0%*	*1.1%*	*1.0%*	*1.0%*
State final demand						
$ billions	$144	$150	$167	$186	$205	
CAGR over previous decade	*2.5%*	*2.6%*	*1.1%*	*1.1%*	*1.0%*	*1.1%*
Household disposable income						
$ billions	$86	$88	$98	$108	$115	
Change over previous decade	*1.0%*	*0.9%*	*1.1%*	*1.0%*	*0.6%*	*0.9%*
Population						
Persons (thousands)	1,841	1,894	1,988	2,046	2,090	
CAGR over previous decade	*1.0%*	*1.1%*	*0.5%*	*0.3%*	*0.2%*	*0.4%*
Dwelling completions						
Total (thousands)	11.6	11.7	7.4	6.6	6.3	
CAGR over previous decade	*3.3%*	*1.6%*	*-4.5%*	*-1.1%*	*-0.5%*	*-1.8%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

5.3.5 Western Australia

Western Australia's post-pandemic population growth is projected to slow to an annual rate of less than 1% over the medium term. The state's population is forecast to increase at a CAGR of 0.9% over the forecast period.

Real GSP is projected to fall in 2023-24 before recovering gradually to record a CAGR of 1.2% over the forecast period. Western Australia's economic performance continues to be driven by the mining sector even though mining is projected to record a relatively subdued CAGR of 0.8% over the forecast period. Several other sectors including the manufacturing, utilities, and construction, are projected to shrink over the forecast period to align with the emissions profile required to meet Australia's climate commitments.

Real household disposable income in Western Australia is forecast to resume growing in the short term and is projected to record a CAGR of 1.3% over the forecast period.

Table 5.6: Western Australia outlook, Progressive Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$419	$424	$484	$552	$619	
CAGR over previous decade	*2.3%*	*1.6%*	*1.3%*	*1.3%*	*1.2%*	*1.2%*
State final demand						
$ billions	$256	$280	$326	$370	$411	
CAGR over previous decade	*0.0%*	*1.2%*	*1.5%*	*1.3%*	*1.1%*	*1.4%*
Household disposable income						
$ billions	$166	$172	$204	$233	$255	
Change over previous decade	*0.9%*	*0.8%*	*1.7%*	*1.4%*	*0.9%*	*1.3%*
Population						
Persons (thousands)	2,845	2,985	3,288	3,541	3,763	
CAGR over previous decade	*1.4%*	*1.7%*	*1.0%*	*0.7%*	*0.6%*	*0.9%*
Dwelling completions						
Total (thousands)	15.2	17.1	18.7	19.3	18.8	
CAGR over previous decade	*-2.0%*	*-6.2%*	*0.9%*	*0.3%*	*-0.3%*	*0.6%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics(2023a, 2023b, 2023d, 2023e),Deloitte Access Economics

5.3.6 Tasmania

Tasmania's population growth in the Progressive Change scenario is projected to stay muted in the short term. The state's population is forecast to record a CAGR of just 0.2% over the forecast period.

Tasmania's real GSP is also projected to stay relatively flat in the short term before posting a mild recovery in the medium term. Real GSP is projected to record a CAGR of 1.0% over the forecast period. Tasmania's relatively large agriculture industry is likely to come under pressure from the physical and transition risks presented by climate change in the Progressive Change scenario. As a result, the industry is projected to grow at a significantly slower rate than the historical average.

Real household disposable income in Tasmania resumes growth in 2024-25 after deep declines. However, growth remains relatively slow at a CAGR of 0.6% over the forecast period.

Table 5.7: Tasmania outlook, Progressive Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$39	$39	$43	$48	$53	
CAGR over previous decade	*2.3%*	*2.3%*	*0.9%*	*1.1%*	*0.9%*	*1.0%*
State final demand						
$ billions	$44	$44	$49	$54	$59	
CAGR over previous decade	*2.8%*	*2.7%*	*0.9%*	*1.0%*	*0.9%*	*0.9%*
Household disposable income						
$ billions	$28	$28	$30	$32	$33	
Change over previous decade	*1.6%*	*1.2%*	*0.7%*	*0.6%*	*0.4%*	*0.6%*
Population						
Persons (thousands)	572	580	593	600	606	
CAGR over previous decade	*1.1%*	*1.2%*	*0.2%*	*0.1%*	*0.1%*	*0.2%*
Dwelling completions						
Total (thousands)	3.4	2.6	1.3	1.0	0.9	
CAGR over previous decade	*4.6%*	*-0.1%*	*-6.5%*	*-3.2%*	*-0.5%*	*-3.9%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

5.3.7 Northern Territory

The Northern Territory's population is projected to record a CAGR of 1.0% over the forecast period while real GSP and real household disposable income are both projected to grow at a rate of 1.4% during the same period.

The territory's mining sector, which accounts for a sizeable share of real GSP, is projected to continue as a driver of growth. However, the growth profile of the sector is forecast to be flatter than in recent history due to the transition away from hydrocarbon production. Natural gas production is projected to decay at a slower rate than coal production. This reflects recent history in Australian energy production, as natural gas has increased as a share of energy production by fuel type over the last 10 years while coal has decreased.[xvii]

Table 5.8: Northern Territory outlook, Progressive Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$30	$32	$37	$42	$48	
CAGR over previous decade	*1.1%*	*1.4%*	*1.4%*	*1.5%*	*1.3%*	*1.4%*
State final demand						
$ billions	$30	$31	$38	$45	$53	
CAGR over previous decade	*-1.3%*	*-0.4%*	*1.9%*	*1.8%*	*1.5%*	*1.8%*
Household disposable income						
$ billions	$17	$18	$21	$24	$27	
Change over previous decade	*1.1%*	*0.4%*	*1.7%*	*1.6%*	*1.1%*	*1.4%*
Population						
Persons (thousands)	251	262	295	326	355	
CAGR over previous decade	*0.5%*	*0.8%*	*1.2%*	*1.0%*	*0.8%*	*1.0%*
Dwelling completions						
Total (thousands)	0.6	0.9	1.7	1.8	1.9	
CAGR over previous decade	*-7.9%*	*-6.8%*	*6.4%*	*0.5%*	*0.3%*	*3.3%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

5.3.8 Australian Capital Territory

The ACT's population is projected to grow at a CAGR of 0.9% over the forecast period.

Real GSP is forecast to grow at the rate of 1.4% during the same period. This reflects the growth of the ACT's largest sector, the public administration sector.

Real household disposable income is forecast to record a CAGR of 1.2% through the forecast period. The ACT's services dominant economic profile insulates it from the effects of climate change in comparison to other states and territories.

Table 5.9: Australian Capital Territory outlook, Progressive Change scenario

	History 2022-23	Forecast 2025-26	2035-36	2045-46	2055-56	Forecast period*
Gross state product						
$ billions	$49	$51	$58	$67	$77	
CAGR over previous decade	*3.5%*	*3.5%*	*1.3%*	*1.5%*	*1.3%*	*1.4%*
State final demand						
$ billions	$66	$71	$83	$96	$109	
CAGR over previous decade	*3.0%*	*3.6%*	*1.6%*	*1.5%*	*1.3%*	*1.6%*
Household disposable income						
$ billions	$40	$40	$47	$55	$60	
Change over previous decade	*2.0%*	*1.6%*	*1.6%*	*1.5%*	*1.0%*	*1.2%*
Population						
Persons (thousands)	463	485	540	587	631	
CAGR over previous decade	*2.0%*	*2.1%*	*1.1%*	*0.8%*	*0.7%*	*0.9%*
Dwelling completions						
Total (thousands)	5.3	4.7	3.7	3.8	3.9	
CAGR over previous decade	*0.5%*	*3.6%*	*-2.3%*	*0.3%*	*0.2%*	*-0.9%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56.

Source: Australian Bureau of Statistics (2023a, 2023b, 2023d, 2023e), Deloitte Access Economics

6 Conclusion

The long term macroeconomic forecasts presented in this report cover three scenarios that outline plausible demographic, economic, and decarbonisation pathways for Australia. Each scenario is mapped to a broader global macroeconomic and decarbonisation context. The forecasts presented in the report cover economic indicators at the national level and across all states and territories in Australia.

Deloitte Access Economics has developed these forecasts using a large-scale macro-econometric model that allows for the development of a consistent set of forecasts at the national, state and territory, and industry levels. Upstream models that quantify key assumptions around the global economy, demographics, and climate change are used as inputs to the macro-econometric model. These include an associated cohort-component demographic model and a climate integrated assessment model.

The Step Change scenario is used as a central scenario in developing these forecasts. The Green Energy Exports scenario and the Progressive Change scenario are modelled in the same manner as the Step Change scenario and present upside and downside narratives respectively.

The macroeconomic modelling undertaken shows that in the near term the economy slows across all scenarios due to the lagged effect of tight monetary policy, cost of living challenges, and weakness in dwelling construction activity. As demand and supply in the economy move towards a better balance, monetary policy is projected to ease, and growth is expected to accelerate. Beyond the near term, variations in demographic profiles and labour productivity paths result in divergent economic futures across the three scenarios. These variations at the national level are filtered through to the state and territory level and to industries.

In the Step Change scenario, economic growth over the forecast period is more modest than growth in the decade prior to the COVID-19 pandemic. An ageing population weighs on growth and contributes to a downward trend in the total fertility rate. Net migration does not completely counterbalance the slowdown in fertility, so population growth slows as a result. Slowing population growth translates to slowing growth in the labour force. Long term labour productivity growth is initially assumed to track the historical average. However, the physical and transition risks presented by climate change drag labour productivity lower. Relatively slow growth in population and moderate growth in labour productivity translates into moderate rate of growth in real GDP over the forecast period. This growth profile filters through to states and industries. However, the constraints imposed by adhering to Australia's decarbonisation commitments forces output in certain sectors to grow at a slower rate than the overall economy. Australia's economy grows at a CAGR of 1.9% over the forecast period.

The Green Energy Exports scenario is driven by more favourable assumptions around population and economic growth relative to Step Change. The total fertility rate, net overseas migration, and labour productivity trend higher than in recent history. These assumptions result in a faster pace of GDP growth over the forecast period. The adverse effects of climate change are also less damaging in comparison to the Step Change scenario. This is because a combination of policy and technology drives a surge in clean energy. Economic activity shifts from hard-to-abate sectors such as mining to other sectors of the economy, including services sectors which also gain from a larger and more productive labour force. Investment in renewable energy infrastructure and hydrogen production supports the construction, manufacturing, and utilities sectors. A quicker and more coordinated global drive to decarbonise also results in Australia exporting hydrogen to global markets. Australia's economy grows at a CAGR of 2.5% over the forecast period.

The Progressive Change scenario is a downside scenario in which population growth and labour productivity slow more sharply than in the Step Change scenario. Efforts to mitigate the adverse effects of climate change are also less coordinated in the Progressive Change scenario. As a result, a smaller and less productive economy also contends with a heavier climate change burden. Some industries that are more vulnerable to the effects of climate change are hit harder than others by physical impacts such as elevated heat stress, rising sea levels, and more frequent extreme weather events. The economy grows well below trend through the forecast period, recording a CAGR of just 1.4%.

Endnotes

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[xv] Santos, Barossa Gas Project, accessed on 18 March 2024

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Appendix A Comparison to other forecasts

Table A.1 below compares Deloitte Access Economics' forecast accuracy for annual GDP growth in Australia to the Consensus Economics forecast accuracy in the same year. Consensus Economics is a firm that prepares compilations of country economic forecasts by surveying economic forecasters including economists and banks. The Consensus Economics forecast is then taken as the average (mean) of the surveyed forecasts.

Forecasts from January of each year are considered for comparison (i.e. forecasts for 2011 are taken from January 2011 Consensus Economics forecasts publication and from January 2011 Deloitte Access Economics forecasts). Deviations of each forecast from the actual annual GDP growth rate for each calendar year are shown in percentage point (ppt) terms. This is measured as the absolute difference between the actual GDP growth and the forecast GDP growth for the calendar year.

The data indicates that Deloitte Access Economics' forecasts have been closer, on average, to actual GDP growth than Consensus forecasts. Deloitte Access Economics' historical consistency in better forecast accuracy is also evident.

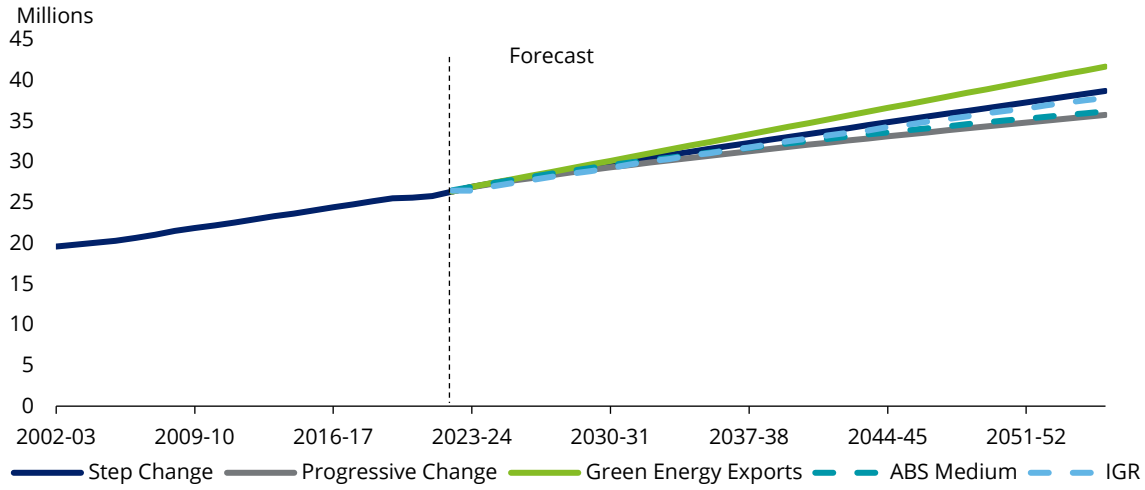
Table A.1: Forecast accuracy comparison

Year	Actual	Forecast deviation	
	Annual GDP growth	Deloitte Access Economics	Consensus
2011	2.77%	0.03ppt	0.33ppt
2012	3.80%	0.20ppt	0.40ppt
2013	2.23%	0.27ppt	0.37ppt
2014	2.59%	0.01ppt	0.11ppt
2015	2.35%	0.05ppt	0.35ppt
2016	2.72%	0.82ppt	0.12ppt
2017	2.42%	0.12ppt	0.08ppt
2018	2.85%	0.05ppt	0.15ppt
2019	1.82%	0.98ppt	0.88ppt
2020	-2.13%	4.23ppt	4.83ppt
2021	5.55%	1.15ppt	2.05ppt
2022	3.81%	0.21ppt	0.01ppt
2023	2.06%	0.33ppt	0.26ppt
Average	2.53%	0.65ppt	0.77ppt

Source: Australian Bureau of Statistics (2023), Consensus Economics, Deloitte Access Economics. Forecast deviation is measured as the absolute percentage point difference between actual GDP growth and the forecast GDP growth.

Chart A.1 below compares the population forecasts across the three scenarios to forecasts from the Australian Bureau of Statistics *Population Projections, Australia 2022 (base) – 2071* Medium Series and the 2023 Intergenerational Report (IGR).[14]

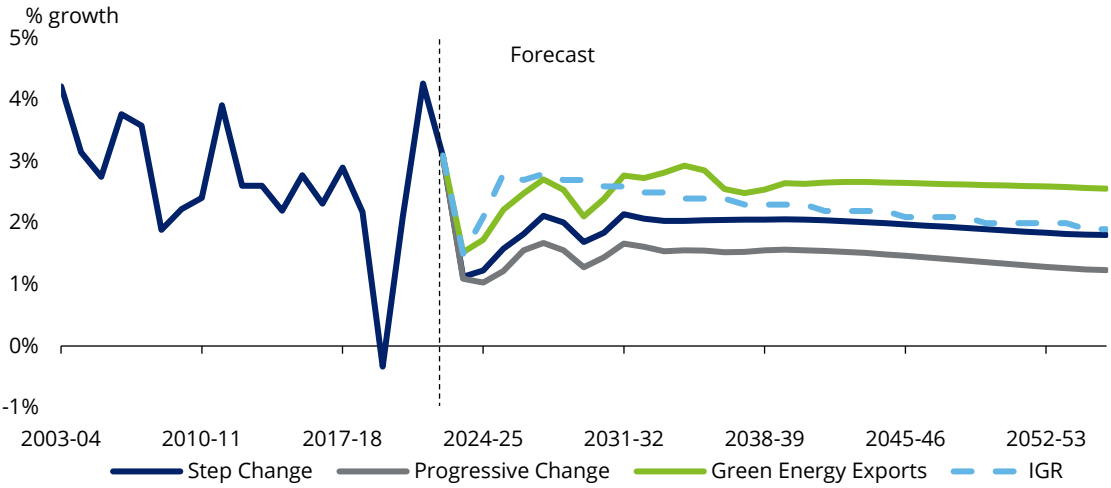
Chart A.1: Population forecast comparison



Source: Australian Bureau of Statistics (2023c), 2023 Intergenerational Report, Deloitte Access Economics

Chart A.2 below compares the GDP growth forecasts across the three scenarios to forecasts from the 2023 Intergenerational Report.

Chart A.2: GDP growth forecast comparison



Source: Australian Bureau of Statistics (2023d), 2023 Intergenerational Report, Deloitte Access Economics

[14] 2023 Intergenerational Report available at: https://treasury.gov.au/sites/default/files/2023-08/p2023-435150.pdf

Table A.2 and Table A.3 below compare the short run (2022-23 to 2026-27) GSP and population forecasts in the Step Change scenario to various State Treasury forecasts from 2023-24 Budgets.

Table A.2: Gross state product forecast comparison, Step Change and State/Territory Treasuries

State/Territory	Forecast	2022-23	2023-24	2024-25	2025-26	2026-27
New South Wales	Step Change	3.8%	1.1%	1.0%	1.6%	1.9%
	State Treasury	*4.3%*	*1.3%*	*1.5%*	*2.3%*	*2.8%*
Victoria	Step Change	2.7%	2.2%	1.0%	1.7%	2.2%
	State Treasury	*2.8%*	*1.5%*	*2.5%*	*2.8%*	*2.8%*
Queensland	Step Change	2.4%	1.9%	1.7%	1.6%	1.8%
	State Treasury	*2.0%*	*3.0%*	*3.0%*	*2.8%*	*2.8%*
South Australia	Step Change	3.9%	2.1%	0.4%	1.0%	1.2%
	State Treasury	*3.5%*	*1.0%*	*1.8%*	*2.0%*	*2.0%*
Western Australia	Step Change	3.5%	-0.9%	1.4%	1.4%	1.6%
	State Treasury	*4.3%*	*2.3%*	*1.8%*	*2.0%*	*1.5%*
Tasmania	Step Change	1.2%	1.6%	0.3%	0.6%	0.9%
	State Treasury	*1.5%*	*2.0%*	*2.3%*	*2.5%*	*2.5%*
Northern Territory	Step Change	-5.2%	-1.5%	2.3%	5.9%	1.7%
	State Treasury	*-5.1%*	*2.7%*	*2.1%*	*4.5%*	*0.6%*
Australian Capital Territory	Step Change	4.4%	1.9%	1.0%	1.2%	1.4%
	State Treasury	*3.8%*	*2.3%*	*3.0%*	*3.3%*	*3.5%*

Source: Deloitte Access Economics, State/Territory 2023-24 Budgets

Table A.3: Population forecast comparison, Step Change and State/Territory Treasury

State/Territory	Forecast	2022-23	2023-24	2024-25	2025-26	2026-27
New South Wales	Step Change	1.8%	1.9%	1.5%	1.4%	1.4%
	State Treasury	*1.8%*	*1.4%*	*1.3%*	*1.2%*	*1.2%*
Victoria	Step Change	2.4%	2.5%	2.0%	1.7%	1.7%
	State Treasury	*1.9%*	*1.9%*	*1.8%*	*1.7%*	*1.7%*
Queensland	Step Change	2.4%	2.2%	1.7%	1.6%	1.6%
	State Treasury	*2/0%*	*1.8%*	*1.5%*	*1.0%*	*1.5%*
South Australia	Step Change	1.6%	1.4%	1.0%	0.8%	0.8%
	State Treasury	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
Western Australia	Step Change	2.7%	2.3%	1.5%	1.3%	1.3%
	State Treasury	*2.0%*	*1.8%*	*1.7%*	*1.6%*	*1.6%*
Tasmania	Step Change	0.6%	0.5%	0.6%	0.5%	0.5%
	State Treasury	*0.7%*	*0.9%*	*0.9%*	*0.7%*	*0.7%*
Northern Territory	Step Change	0.9%	1.5%	1.6%	1.5%	1.5%
	State Treasury	*0.4%*	*0.9%*	*1.0%*	*1.0%*	*1.0%*
Australian Capital Territory	Step Change	1.9%	1.9%	1.5%	1.4%	1.4%
	State Treasury	*2.3%*	*2.3%*	*2.0%*	*2.0%*	*2.0%*

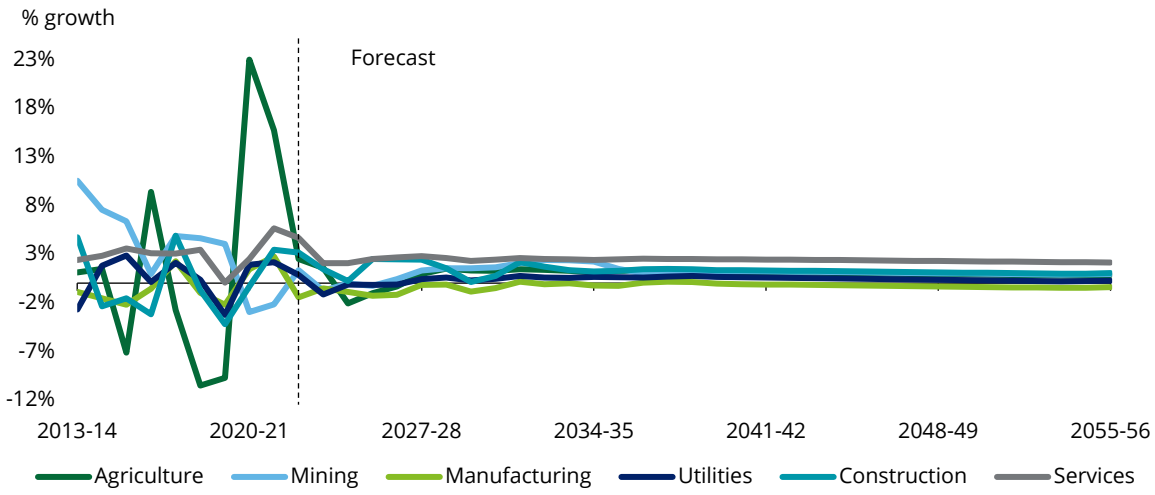
Source: Deloitte Access Economics, State/Territory 2023-24 Budgets

Appendix B Summary charts and tables

B.1. Summary charts

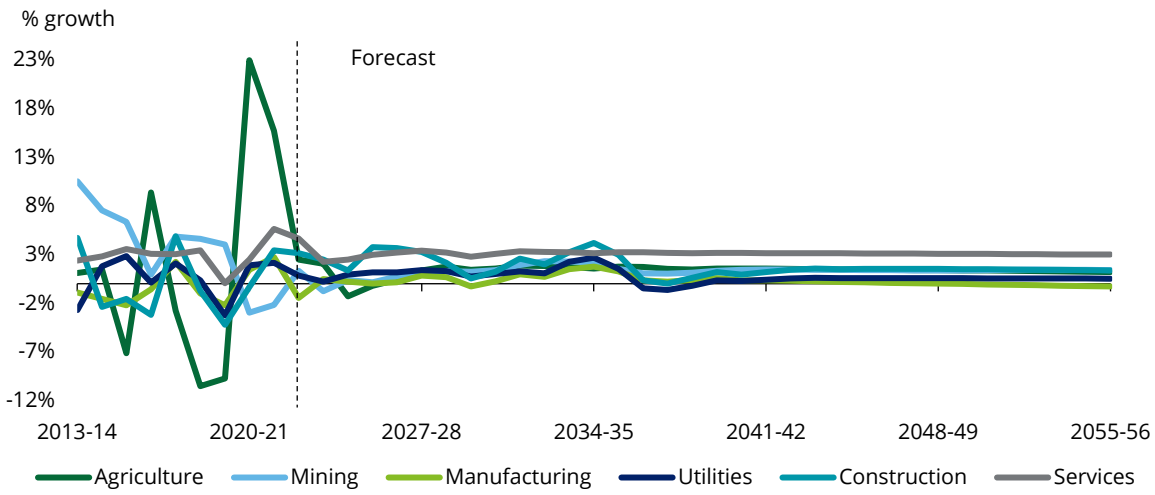
The charts below present the industry GVA forecasts across the three scenarios at the national level.

Chart B.1: Step Change industry gross value added growth, Australia



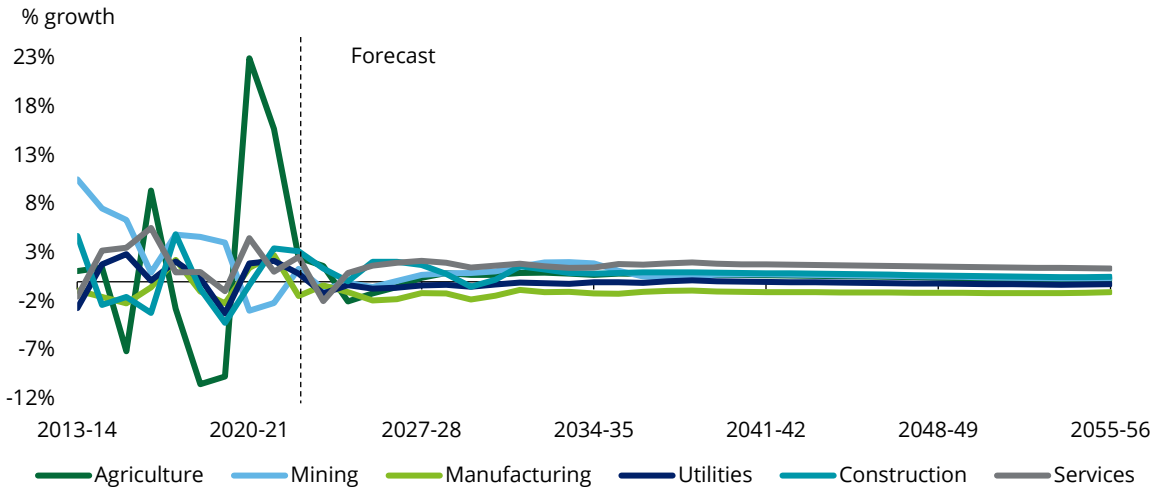
Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

Chart B.2: Green Energy Exports industry gross value added growth, Australia



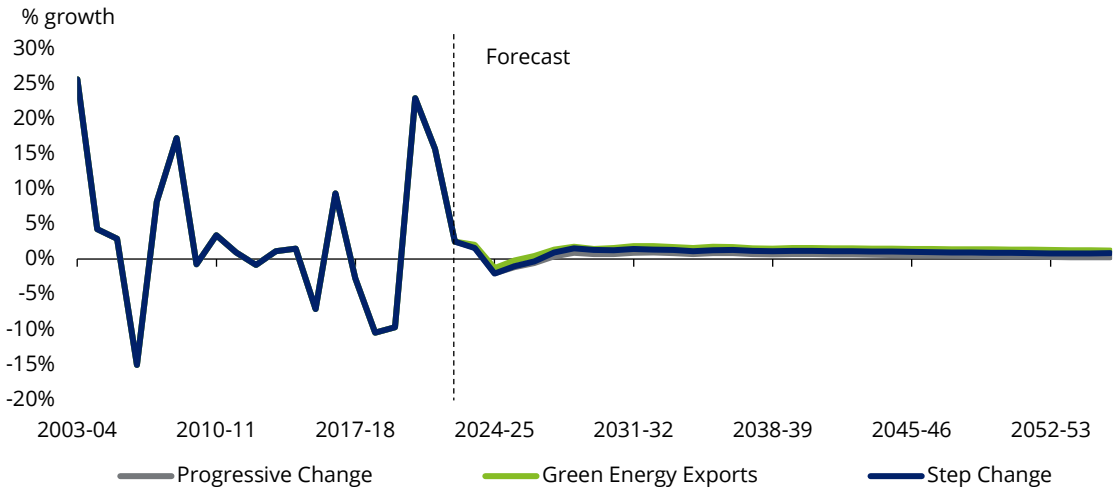
Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

Chart B.3: Progressive Change industry gross value added growth, Australia



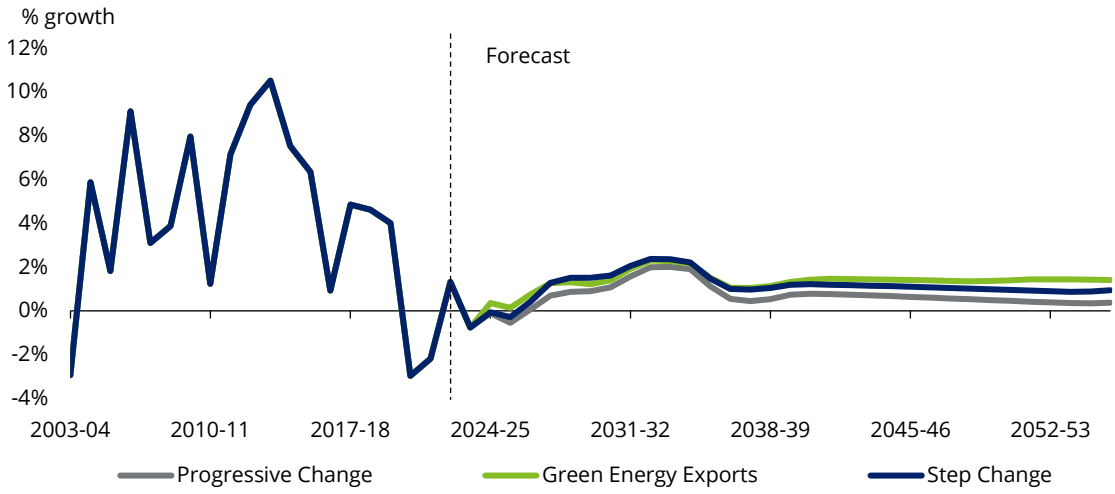
Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

Chart B.4: Agriculture industry gross value added growth by scenario



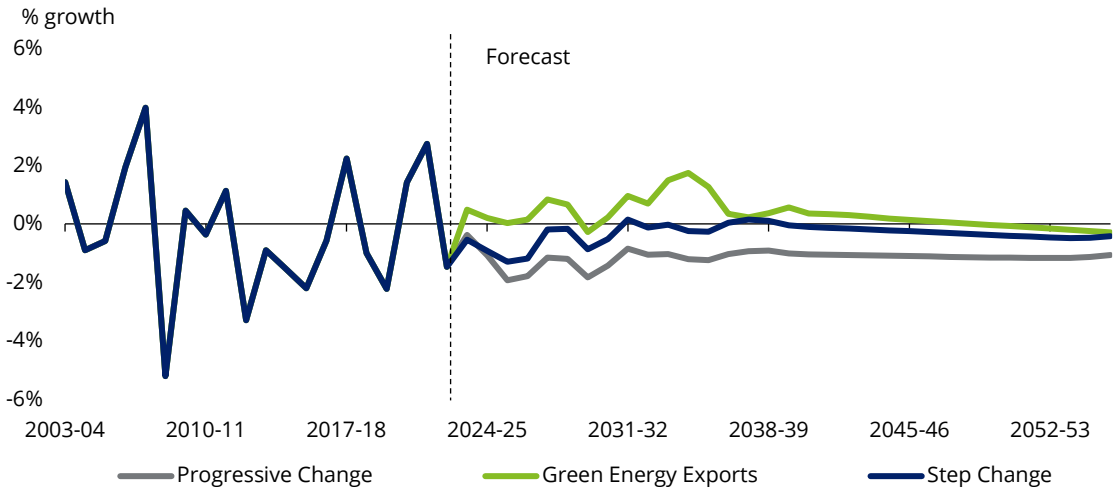
Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

Chart B.5: Mining industry gross value added growth by scenario



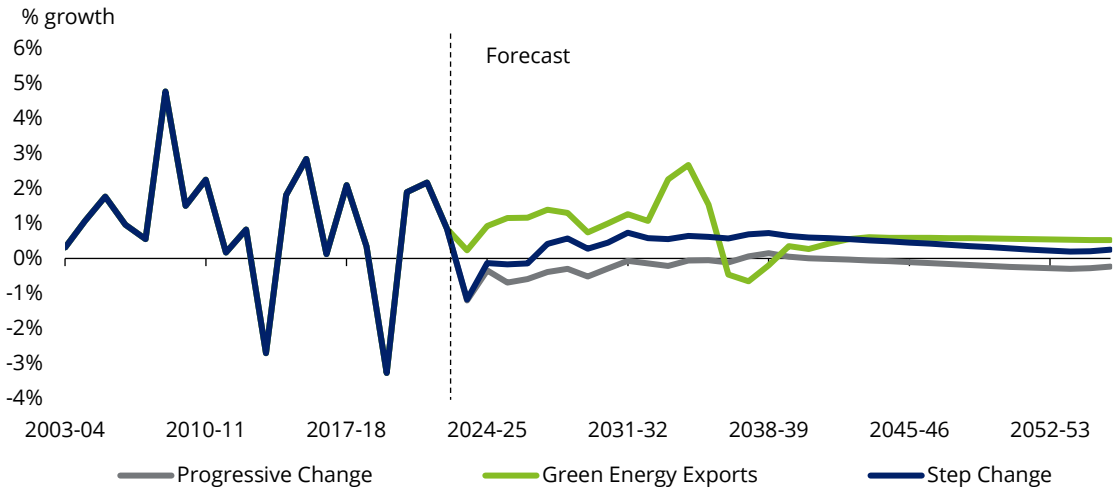
Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

Chart B.6: Manufacturing industry gross value added growth by scenario



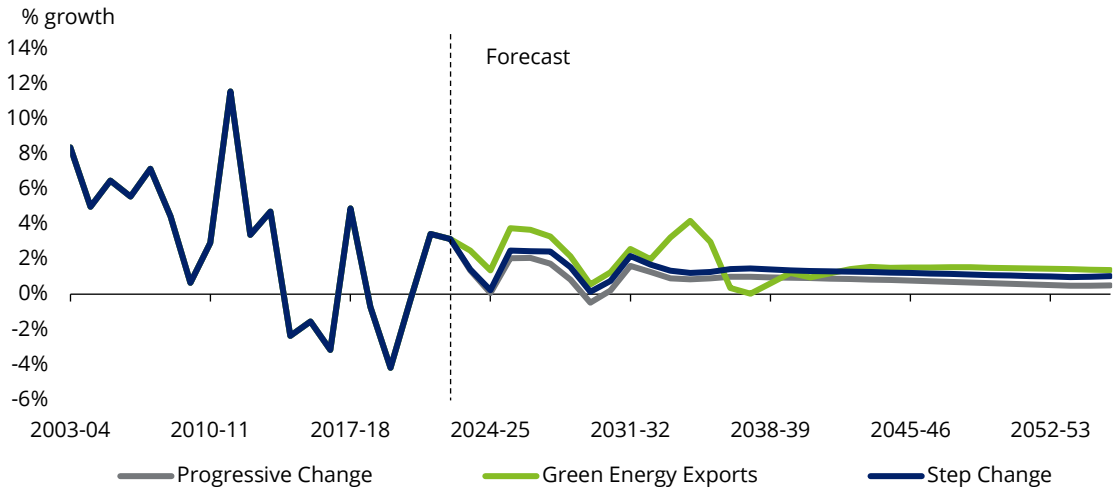
Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

Chart B.7: Utilities industry gross value added growth by scenario



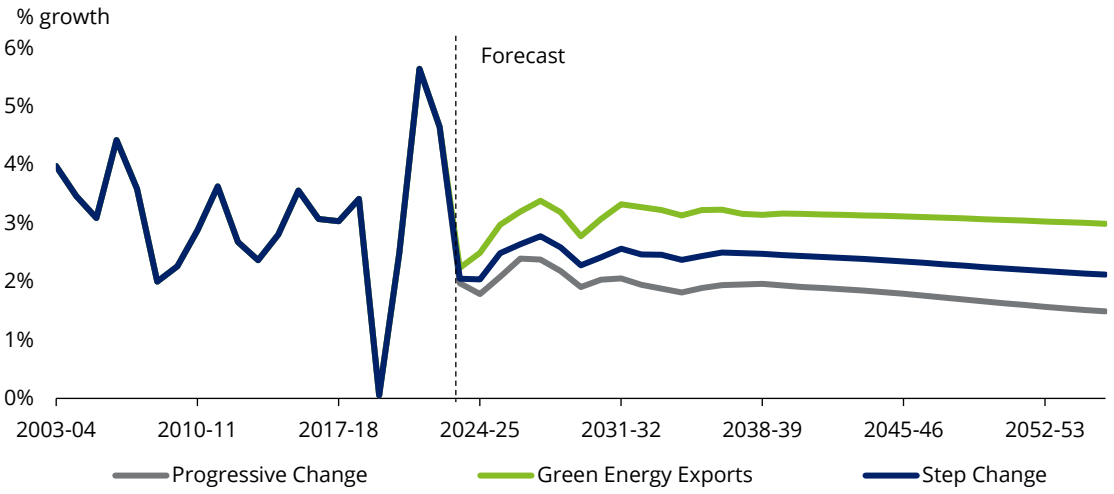
Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

Chart B.8: Construction industry gross value added growth by scenario



Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

Chart B.9: Services industry gross value added growth by scenario



Source: Australian Bureau of Statistics (2023d), Deloitte Access Economics

B.2. Summary tables

The tables below present the industry GVA forecasts across the three scenarios for each of the eight state and territories.

Table B.1: New South Wales industry gross value added by scenario, $ billion

Industry	Scenario	2022-23	2025-26	2035-36	2045-46	2055-56	Forecast period*
Agriculture	Step Change	$13.4	$13.2	$14.7	$16.6	$18.2	
	CAGR over previous decade	*0.3%*	*0.8%*	*1.1%*	*1.2%*	*0.9%*	*0.9%*
	Progressive Change	$13.4	$13.2	$14.0	$15.1	$15.7	
	CAGR over previous decade	*0.3%*	*0.8%*	*0.6%*	*0.7%*	*0.4%*	*0.5%*
	Green Energy Exports	$13.4	$13.5	$15.7	$18.4	$21.1	
	CAGR over previous decade	*0.3%*	*1.1%*	*1.5%*	*1.6%*	*1.4%*	*1.4%*
Mining	Step Change	$13.7	$12.3	$12.3	$12.9	$14.1	
	CAGR over previous decade	*-1.0%*	*-3.0%*	*0.0%*	*0.5%*	*0.9%*	*0.1%*
	Progressive Change	$13.7	$12.3	$11.7	$11.8	$12.2	
	CAGR over previous decade	*-1.0%*	*-3.1%*	*-0.5%*	*0.0%*	*0.4%*	*-0.4%*
	Green Energy Exports	$13.7	$12.4	$12.3	$13.2	$15.0	
	CAGR over previous decade	*-1.0%*	*-3.0%*	*-0.1%*	*0.7%*	*1.3%*	*0.3%*
Manufacturing	Step Change	$37.4	$35.5	$29.9	$28.3	$27.7	
	CAGR over previous decade	*-0.5%*	*-0.3%*	*-1.7%*	*-0.6%*	*-0.2%*	*-0.9%*
	Progressive Change	$37.4	$35.3	$27.1	$23.2	$21.1	
	CAGR over previous decade	*-0.5%*	*-0.3%*	*-2.6%*	*-1.5%*	*-0.9%*	*-1.7%*
	Green Energy Exports	$37.4	$36.7	$34.6	$34.0	$34.4	
	CAGR over previous decade	-0.5%	0.1%	-0.6%	-0.2%	0.1%	-0.3%
Utilities	Step Change	$11.4	$10.9	$11.1	$11.5	$12.0	
	CAGR over previous decade	*-1.7%*	*-0.5%*	*0.1%*	*0.4%*	*0.4%*	*0.1%*
	Progressive Change	$11.4	$10.8	$10.2	$10.0	$9.9	
	CAGR over previous decade	*-1.7%*	*-0.6%*	*-0.6%*	*-0.2%*	*-0.2%*	*-0.4%*
	Green Energy Exports	$11.4	$11.3	$12.7	$12.7	$13.5	
	CAGR over previous decade	*-1.7%*	*-0.1%*	*1.1%*	*0.0%*	*0.6%*	*0.5%*
Construction	Step Change	$49.8	$52.3	$61.4	$71.0	$80.1	
	CAGR over previous decade	*2.6%*	*1.6%*	*1.6%*	*1.5%*	*1.2%*	*1.4%*
	Progressive Change	$49.8	$52.0	$58.0	$64.3	$69.1	
	CAGR over previous decade	*2.6%*	*1.6%*	*1.1%*	*1.0%*	*0.7%*	*1.0%*
	Green Energy Exports	$49.8	$54.2	$70.7	$79.5	$93.2	
	CAGR over previous decade	*2.6%*	*2.0%*	*2.7%*	*1.2%*	*1.6%*	*1.9%*
Services	Step Change	$343.6	$369.4	$490.8	$642.1	$816.7	
	CAGR over previous decade	*3.3%*	*3.0%*	*2.9%*	*2.7%*	*2.4%*	*2.7%*
	Progressive Change	$343.6	$366.7	$466.3	$578.7	$693.9	
	CAGR over previous decade	*3.3%*	*3.0%*	*2.4%*	*2.2%*	*1.8%*	*2.2%*
	Green Energy Exports	$343.6	$373.4	$530.0	$744.4	$1,027.4	
	CAGR over previous decade	*3.3%*	*3.2%*	*3.6%*	*3.5%*	*3.3%*	*3.4%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023a), Deloitte Access Economics

Table B.2: Victorian industry gross value added by scenario, $ billion

Industry	Scenario	2022-23	2025-26	2035-36	2045-46	2055-56	Forecast period*
Agriculture	Step Change	$14.1	$14.6	$17.0	$19.0	$20.7	
	CAGR over previous decade	*1.0%*	*2.5%*	*1.5%*	*1.1%*	*0.9%*	*1.2%*
	Progressive Change	$14.1	$14.6	$16.2	$17.3	$17.9	
	CAGR over previous decade	*1.0%*	*2.5%*	*1.0%*	*0.7%*	*0.3%*	*0.7%*
	Green Energy Exports	$14.1	$14.9	$18.0	$21.0	$24.0	
	CAGR over previous decade	*1.0%*	*2.8%*	*1.9%*	*1.5%*	*1.3%*	*1.6%*
Mining	Step Change	$5.1	$4.9	$4.7	$4.0	$4.4	
	CAGR over previous decade	*-3.0%*	*-3.4%*	*-0.3%*	*-1.7%*	*0.9%*	*-0.4%*
	Progressive Change	$5.1	$4.8	$4.5	$3.6	$3.8	
	CAGR over previous decade	*-3.0%*	*-3.4%*	*-0.7%*	*-2.2%*	*0.4%*	*-0.9%*
	Green Energy Exports	$5.1	$4.9	$4.7	$4.1	$4.7	
	CAGR over previous decade	*-3.0%*	*-3.3%*	*-0.3%*	*-1.5%*	*1.4%*	*-0.2%*
Manufacturing	Step Change	$34.8	$33.6	$33.0	$30.9	$27.0	
	CAGR over previous decade	-0.3%	-0.5%	-0.2%	-0.7%	-1.3%	-0.8%
	Progressive Change	$34.8	$33.3	$29.9	$25.4	$20.6	
	CAGR over previous decade	-0.3%	-0.6%	-1.1%	-1.6%	-2.1%	-1.6%
	Green Energy Exports	$34.8	$34.7	$38.2	$37.2	$33.4	
	CAGR over previous decade	*-0.3%*	*-0.2%*	*1.0%*	*-0.3%*	*-1.0%*	*-0.1%*
Utilities	Step Change	$11.5	$11.5	$12.5	$13.6	$14.3	
	CAGR over previous decade	*1.3%*	*0.1%*	*0.8%*	*0.8%*	*0.5%*	*0.7%*
	Progressive Change	$11.5	$11.5	$11.5	$11.8	$11.8	
	CAGR over previous decade	*1.3%*	*0.1%*	*0.1%*	*0.2%*	*0.0%*	*0.1%*
	Green Energy Exports	$11.5	$12.0	$14.3	$14.9	$16.2	
	CAGR over previous decade	*1.3%*	*0.5%*	*1.8%*	*0.5%*	*0.8%*	*1.1%*
Construction	Step Change	$41.1	$42.7	$50.1	$58.6	$66.2	
	CAGR over previous decade	*3.4%*	*2.4%*	*1.6%*	*1.6%*	*1.2%*	*1.5%*
	Progressive Change	$41.1	$42.4	$47.4	$53.0	$57.1	
	CAGR over previous decade	*3.4%*	*2.4%*	*1.1%*	*1.1%*	*0.8%*	*1.0%*
	Green Energy Exports	$41.1	$44.2	$57.7	$65.5	$77.1	
	CAGR over previous decade	*3.4%*	*2.8%*	*2.7%*	*1.3%*	*1.6%*	*1.9%*
Services	Step Change	$343.6	$369.4	$490.8	$642.1	$816.7	
	CAGR over previous decade	*3.3%*	*3.0%*	*2.9%*	*2.7%*	*2.4%*	*2.7%*
	Progressive Change	$343.6	$366.7	$466.3	$578.7	$693.9	
	CAGR over previous decade	*3.3%*	*3.0%*	*2.4%*	*2.2%*	*1.8%*	*2.2%*
	Green Energy Exports	$343.6	$373.4	$530.0	$744.4	$1,027.4	
	CAGR over previous decade	*3.3%*	*3.2%*	*3.6%*	*3.5%*	*3.3%*	*3.4%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023a), Deloitte Access Economics

Table B.3: Queensland industry gross value added by scenario, $ billion

Industry	Scenario	2022-23	2025-26	2035-36	2045-46	2055-56	Forecast period*
Agriculture	Step Change	$13.4	$12.9	$14.8	$17.2	$19.4	
	CAGR over previous decade	*0.8%*	*1.1%*	*1.4%*	*1.5%*	*1.2%*	*1.1%*
	Progressive Change	$13.4	$12.9	$14.1	$15.7	$16.8	
	CAGR over previous decade	*0.8%*	*1.1%*	*0.9%*	*1.0%*	*0.7%*	*0.7%*
	Green Energy Exports	$13.4	$13.2	$15.8	$19.1	$22.5	
	CAGR over previous decade	*0.8%*	*1.3%*	*1.8%*	*1.9%*	*1.7%*	*1.6%*
Mining	Step Change	$38.6	$38.0	$43.2	$48.6	$50.9	
	CAGR over previous decade	*3.2%*	*0.2%*	*1.3%*	*1.2%*	*0.5%*	*0.8%*
	Progressive Change	$38.6	$37.9	$41.2	$44.3	$44.1	
	CAGR over previous decade	*3.2%*	*0.2%*	*0.8%*	*0.7%*	*0.0%*	*0.4%*
	Green Energy Exports	$38.6	$38.4	$43.3	$49.7	$54.3	
	CAGR over previous decade	*3.2%*	*0.3%*	*1.2%*	*1.4%*	*0.9%*	*1.0%*
Manufacturing	Step Change	$23.1	$23.3	$25.1	$27.5	$28.1	
	CAGR over previous decade	*-0.8%*	*-0.3%*	*0.7%*	*0.9%*	*0.2%*	*0.6%*
	Progressive Change	$23.1	$23.1	$22.7	$22.6	$21.4	
	CAGR over previous decade	*-0.8%*	*-0.4%*	*-0.2%*	*0.0%*	*-0.5%*	*-0.2%*
	Green Energy Exports	$23.1	$24.1	$29.0	$33.1	$34.9	
	CAGR over previous decade	*-0.8%*	*0.0%*	*1.9%*	*1.3%*	*0.5%*	*1.2%*
Utilities	Step Change	$11.0	$10.9	$11.8	$12.9	$13.5	
	CAGR over previous decade	*1.9%*	*0.8%*	*0.8%*	*0.9%*	*0.4%*	*0.6%*
	Progressive Change	$11.0	$10.9	$10.9	$11.2	$11.1	
	CAGR over previous decade	*1.9%*	*0.7%*	*0.0%*	*0.3%*	*-0.1%*	*0.0%*
	Green Energy Exports	$11.0	$11.4	$13.5	$14.2	$15.2	
	CAGR over previous decade	*1.9%*	*1.1%*	*1.7%*	*0.5%*	*0.7%*	*1.0%*
Construction	Step Change	$30.7	$32.2	$37.9	$44.3	$50.0	
	CAGR over previous decade	*-1.9%*	*0.5%*	*1.6%*	*1.6%*	*1.2%*	*1.5%*
	Progressive Change	$30.7	$32.0	$35.8	$40.0	$43.1	
	CAGR over previous decade	*-1.9%*	*0.4%*	*1.1%*	*1.1%*	*0.8%*	*1.0%*
	Green Energy Exports	$30.7	$33.3	$43.6	$49.5	$58.3	
	CAGR over previous decade	*-1.9%*	*0.8%*	*2.7%*	*1.3%*	*1.6%*	*2.0%*
Services	Step Change	$242.5	$258.7	$328.8	$416.6	$522.9	
	CAGR over previous decade	*3.2%*	*3.1%*	*2.4%*	*2.4%*	*2.3%*	2.4%
	Progressive Change	$242.5	$256.9	$312.3	$375.5	$444.5	
	CAGR over previous decade	*3.2%*	*3.0%*	*2.0%*	*1.9%*	*1.7%*	*1.9%*
	Green Energy Exports	$242.5	$261.6	$354.9	$482.2	$656.1	
	CAGR over previous decade	*3.2%*	*3.2%*	*3.1%*	*3.1%*	*3.1%*	*3.1%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023a), Deloitte Access Economics

Table B.4: South Australia industry gross value added by scenario, $ billion

Industry	Scenario	2022-23	2025-26	2035-36	2045-46	2055-56	Forecast period*
Agriculture	Step Change	$8.6	$8.0	$9.1	$10.3	$11.1	
	CAGR over previous decade	*2.9%*	*3.3%*	*1.3%*	*1.3%*	*0.7%*	*0.8%*
	Progressive Change	$8.6	$8.0	$8.6	$9.4	$9.6	
	CAGR over previous decade	*2.9%*	*3.3%*	*0.8%*	*0.9%*	*0.2%*	*0.3%*
	Green Energy Exports	$8.6	$8.1	$9.6	$11.5	$12.9	
	CAGR over previous decade	*2.9%*	*3.5%*	*1.7%*	*1.7%*	*1.2%*	*1.2%*
Mining	Step Change	$5.6	$5.7	$6.3	$6.9	$7.9	
	CAGR over previous decade	*-3.3%*	*-3.6%*	*1.1%*	*0.8%*	*1.5%*	*1.1%*
	Progressive Change	$5.6	$5.7	$6.0	$6.3	$6.9	
	CAGR over previous decade	*-3.3%*	*-3.6%*	*0.6%*	*0.4%*	*0.9%*	*0.6%*
	Green Energy Exports	$5.6	$5.7	$6.3	$7.0	$8.5	
	CAGR over previous decade	*-3.3%*	*-3.5%*	*1.0%*	*1.0%*	*1.9%*	*1.3%*
Manufacturing	Step Change	$7.9	$7.6	$7.4	$7.1	$6.3	
	CAGR over previous decade	*-1.6%*	*-0.6%*	*-0.3%*	*-0.4%*	*-1.1%*	*-0.7%*
	Progressive Change	$7.9	$7.6	$6.7	$5.9	$4.8	
	CAGR over previous decade	*-1.6%*	*-0.6%*	*-1.2%*	*-1.4%*	*-1.9%*	*-1.5%*
	Green Energy Exports	$7.9	$7.9	$8.6	$8.6	$7.9	
	CAGR over previous decade	*-1.6%*	*-0.2%*	*0.8%*	*0.0%*	*-0.8%*	*0.0%*
Utilities	Step Change	$3.9	$4.0	$3.8	$3.9	$3.8	
	CAGR over previous decade	*2.0%*	*1.2%*	*-0.3%*	*0.1%*	*-0.2%*	*-0.1%*
	Progressive Change	$3.9	$3.9	$3.5	$3.4	$3.2	
	CAGR over previous decade	*2.0%*	*1.1%*	*-1.0%*	*-0.5%*	*-0.7%*	*-0.7%*
	Green Energy Exports	$3.9	$4.1	$4.4	$4.3	$4.3	
	CAGR over previous decade	*2.0%*	*1.5%*	*0.7%*	*-0.3%*	*0.1%*	*0.3%*
Construction	Step Change	$8.9	$9.1	$10.3	$11.6	$13.5	
	CAGR over previous decade	*1.5%*	*1.6%*	*1.2%*	*1.2%*	*1.5%*	*1.3%*
	Progressive Change	$8.9	$9.0	$9.7	$10.5	$11.6	
	CAGR over previous decade	*1.5%*	*1.6%*	*0.7%*	*0.8%*	*1.0%*	*0.8%*
	Green Energy Exports	$8.9	$9.4	$11.8	$13.0	$15.7	
	CAGR over previous decade	*1.5%*	*2.0%*	*2.3%*	*0.9%*	*1.9%*	*1.7%*
Services	Step Change	$78.9	$84.0	$102.3	$126.0	$152.4	
	CAGR over previous decade	*2.7%*	*2.8%*	*2.0%*	*2.1%*	*1.9%*	2.0%
	Progressive Change	$78.9	$83.4	$97.4	$113.7	$129.6	
	CAGR over previous decade	*2.7%*	*2.8%*	*1.6%*	*1.6%*	*1.3%*	*1.5%*
	Green Energy Exports	$78.9	$84.9	$110.3	$145.8	$191.2	
	CAGR over previous decade	*2.7%*	*3.0%*	*2.7%*	*2.8%*	*2.7%*	*2.7%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023a), Deloitte Access Economics

Table B.5: Western Australia industry gross value added by scenario, $ billion

Industry	Scenario	2022-23	2025-26	2035-36	2045-46	2055-56	Forecast period*
Agriculture	Step Change	$9.1	$9.2	$9.1	$9.1	$9.7	
	CAGR over previous decade	*5.5%*	*3.9%*	*-0.2%*	*0.1%*	*0.6%*	*0.2%*
	Progressive Change	$9.1	$9.2	$8.7	$8.3	$8.4	
	CAGR over previous decade	*5.5%*	*3.9%*	*-0.6%*	*-0.4%*	*0.0%*	*-0.3%*
	Green Energy Exports	$9.1	$9.4	$9.7	$10.1	$11.2	
	CAGR over previous decade	*5.5%*	*4.2%*	*0.3%*	*0.5%*	*1.0%*	*0.6%*
Mining	Step Change	$247.8	$246.1	$295.9	$332.3	$367.4	
	CAGR over previous decade	*4.2%*	*1.4%*	*1.9%*	*1.2%*	*1.0%*	*1.2%*
	Progressive Change	$247.8	$245.4	$281.9	$302.5	$318.1	
	CAGR over previous decade	*4.2%*	*1.4%*	*1.4%*	*0.7%*	*0.5%*	*0.8%*
	Green Energy Exports	$247.8	$248.2	$296.3	$339.4	$392.1	
	CAGR over previous decade	*4.2%*	*1.5%*	*1.8%*	*1.4%*	*1.5%*	*1.4%*
Manufacturing	Step Change	$16.8	$16.8	$17.3	$18.0	$18.4	
	CAGR over previous decade	*1.4%*	*1.2%*	*0.3%*	*0.4%*	*0.2%*	*0.3%*
	Progressive Change	$16.8	$16.7	$15.6	$14.8	$14.1	
	CAGR over previous decade	*1.4%*	*1.1%*	*-0.7%*	*-0.5%*	*-0.5%*	*-0.5%*
	Green Energy Exports	$16.8	$17.4	$20.0	$21.7	$22.9	
	CAGR over previous decade	*1.4%*	*1.6%*	*1.4%*	*0.8%*	*0.5%*	*0.9%*
Utilities	Step Change	$5.0	$4.9	$5.2	$5.3	$5.1	
	CAGR over previous decade	*0.8%*	*-0.1%*	*0.7%*	*0.1%*	*-0.3%*	*0.1%*
	Progressive Change	$5.0	$4.9	$4.8	$4.6	$4.2	
	CAGR over previous decade	*0.8%*	*-0.1%*	*-0.1%*	*-0.5%*	*-0.8%*	*-0.5%*
	Green Energy Exports	$5.0	$5.1	$6.0	$5.8	$5.8	
	CAGR over previous decade	*0.8%*	*0.3%*	*1.6%*	*-0.2%*	*0.0%*	*0.4%*
Construction	Step Change	$20.7	$21.3	$22.9	$22.9	$21.7	
	CAGR over previous decade	*-4.6%*	*-3.5%*	*0.7%*	*0.0%*	*-0.5%*	*0.1%*
	Progressive Change	$20.7	$21.1	$21.6	$20.7	$18.7	
	CAGR over previous decade	*-4.6%*	*-3.6%*	*0.2%*	*-0.4%*	*-1.0%*	*-0.3%*
	Green Energy Exports	$20.7	$22.0	$26.4	$25.6	$25.3	
	CAGR over previous decade	*-4.6%*	*-3.2%*	*1.8%*	*-0.3%*	*-0.1%*	*0.6%*
Services	Step Change	$136.6	$143.7	$170.6	$197.8	$227.6	
	CAGR over previous decade	*2.6%*	*2.5%*	*1.7%*	*1.5%*	*1.4%*	1.6%
	Progressive Change	$136.6	$142.7	$161.9	$178.2	$193.5	
	CAGR over previous decade	*2.6%*	*2.5%*	*1.3%*	*1.0%*	*0.8%*	*1.1%*
	Green Energy Exports	$136.6	$145.3	$184.3	$228.9	$285.2	
	CAGR over previous decade	*2.6%*	*2.7%*	*2.4%*	*2.2%*	*2.2%*	*2.3%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023a), Deloitte Access Economics

Table B.6: Tasmania industry gross value added by scenario, $ billion

Industry	Scenario	2022-23	2025-26	2035-36	2045-46	2055-56	Forecast period*
Agriculture	Step Change	$4.6	$4.3	$4.8	$5.5	$5.8	
	CAGR over previous decade	*5.1%*	*3.3%*	*1.2%*	*1.2%*	*0.6%*	*0.7%*
	Progressive Change	$4.6	$4.3	$4.6	$5.0	$5.0	
	CAGR over previous decade	*5.1%*	*3.3%*	*0.7%*	*0.8%*	*0.0%*	*0.3%*
	Green Energy Exports	$4.6	$4.4	$5.1	$6.1	$6.7	
	CAGR over previous decade	*5.1%*	*3.5%*	*1.6%*	*1.7%*	*1.0%*	*1.2%*
Mining	Step Change	$1.6	$1.5	$1.6	$1.8	$2.1	
	CAGR over previous decade	*-1.1%*	*-0.4%*	*0.5%*	*1.1%*	*1.6%*	*0.8%*
	Progressive Change	$1.6	$1.5	$1.5	$1.6	$1.8	
	CAGR over previous decade	*-1.1%*	*-0.5%*	*0.0%*	*0.6%*	*1.1%*	*0.3%*
	Green Energy Exports	$1.6	$1.5	$1.6	$1.8	$2.2	
	CAGR over previous decade	*-1.1%*	*-0.4%*	*0.4%*	*1.3%*	*2.1%*	*1.0%*
Manufacturing	Step Change	$2.1	$2.0	$1.9	$1.9	$1.7	
	CAGR over previous decade	*-0.9%*	*-1.2%*	*-0.1%*	*-0.2%*	*-0.9%*	*-0.6%*
	Progressive Change	$2.1	$2.0	$1.8	$1.6	$1.3	
	CAGR over previous decade	*-0.9%*	*-1.2%*	*-1.0%*	*-1.1%*	*-1.6%*	*-1.4%*
	Green Energy Exports	$2.1	$2.0	$2.3	$2.3	$2.2	
	CAGR over previous decade	*-0.9%*	*-0.8%*	*1.0%*	*0.2%*	*-0.6%*	*0.1%*
Utilities	Step Change	$1.1	$1.0	$1.0	$0.9	$0.9	
	CAGR over previous decade	*0.2%*	*1.8%*	*-0.6%*	*-0.2%*	*-0.8%*	*-0.7%*
	Progressive Change	$1.1	$1.0	$0.9	$0.8	$0.7	
	CAGR over previous decade	*0.2%*	*1.7%*	*-1.4%*	*-0.8%*	*-1.3%*	*-1.2%*
	Green Energy Exports	$1.1	$1.1	$1.1	$1.0	$1.0	
	CAGR over previous decade	*0.2%*	*2.1%*	*0.3%*	*-0.6%*	*-0.5%*	*-0.3%*
Construction	Step Change	$2.5	$2.5	$2.7	$2.9	$2.9	
	CAGR over previous decade	*3.7%*	*2.5%*	*0.8%*	*0.5%*	*0.3%*	*0.5%*
	Progressive Change	$2.5	$2.5	$2.6	$2.6	$2.5	
	CAGR over previous decade	*3.7%*	*2.4%*	*0.3%*	*0.1%*	*-0.2%*	*0.1%*
	Green Energy Exports	$2.5	$2.6	$3.1	$3.2	$3.4	
	CAGR over previous decade	*3.7%*	*2.8%*	*1.9%*	*0.2%*	*0.7%*	*1.0%*
Services	Step Change	$22.2	$23.5	$28.0	$34.5	$41.9	
	CAGR over previous decade	*3.1%*	*3.1%*	*1.8%*	*2.1%*	*2.0%*	1.9%
	Progressive Change	$22.2	$23.4	$26.8	$31.2	$35.6	
	CAGR over previous decade	*3.1%*	*3.1%*	*1.4%*	*1.5%*	*1.3%*	*1.4%*
	Green Energy Exports	$22.2	$23.8	$30.2	$39.9	$52.6	
	CAGR over previous decade	*3.1%*	*3.3%*	*2.4%*	*2.8%*	*2.8%*	*2.6%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023a), Deloitte Access Economics

Table B.7: Northern Territory industry gross value added by scenario, $ billion

Industry	Scenario	2022-23	2025-26	2035-36	2045-46	2055-56	Forecast period*
Agriculture	Step Change	$0.8	$0.8	$0.8	$0.9	$1.0	
	CAGR over previous decade	*0.1%*	*-1.4%*	*0.9%*	*0.9%*	*0.5%*	*0.6%*
	Progressive Change	$0.8	$0.8	$0.8	$0.8	$0.8	
	CAGR over previous decade	*0.1%*	*-1.4%*	*0.4%*	*0.5%*	*0.0%*	*0.2%*
	Green Energy Exports	$0.8	$0.8	$0.9	$1.0	$1.1	
	CAGR over previous decade	*0.1%*	*-1.2%*	*1.3%*	*1.3%*	*1.0%*	*1.1%*
Mining	Step Change	$8.6	$9.0	$11.1	$13.0	$14.9	
	CAGR over previous decade	*6.5%*	*6.0%*	*2.1%*	*1.6%*	*1.4%*	*1.7%*
	Progressive Change	$8.6	$9.0	$10.6	$11.9	$12.9	
	CAGR over previous decade	*6.5%*	*5.9%*	*1.7%*	*1.1%*	*0.8%*	*1.2%*
	Green Energy Exports	$8.6	$9.1	$11.2	$13.3	$15.9	
	CAGR over previous decade	*6.5%*	*6.0%*	*2.1%*	*1.8%*	*1.8%*	*1.9%*
Manufacturing	Step Change	$1.2	$1.2	$1.2	$1.2	$1.3	
	CAGR over previous decade	*-3.2%*	*-0.6%*	*-0.1%*	*0.6%*	*0.1%*	*0.2%*
	Progressive Change	$1.2	$1.2	$1.1	$1.0	$1.0	
	CAGR over previous decade	*-3.2%*	*-0.6%*	*-1.0%*	*-0.4%*	*-0.6%*	*-0.6%*
	Green Energy Exports	$1.2	$1.2	$1.4	$1.5	$1.6	
	CAGR over previous decade	*-3.2%*	*-0.2%*	*1.0%*	*1.0%*	*0.4%*	*0.8%*
Utilities	Step Change	$0.5	$0.4	$0.4	$0.4	$0.4	
	CAGR over previous decade	*3.8%*	*0.9%*	*-0.3%*	*0.0%*	*-0.3%*	*-0.3%*
	Progressive Change	$0.5	$0.4	$0.4	$0.4	$0.3	
	CAGR over previous decade	*3.8%*	*0.8%*	*-1.1%*	*-0.6%*	*-0.9%*	*-0.9%*
	Green Energy Exports	$0.5	$0.5	$0.5	$0.5	$0.5	
	CAGR over previous decade	*3.8%*	*1.2%*	*0.6%*	*-0.4%*	*-0.1%*	*0.1%*
Construction	Step Change	$1.6	$1.7	$2.0	$2.4	$2.7	
	CAGR over previous decade	*-7.5%*	*-5.5%*	*1.6%*	*1.8%*	*1.3%*	*1.6%*
	Progressive Change	$1.6	$1.7	$1.9	$2.1	$2.3	
	CAGR over previous decade	*-7.5%*	*-5.6%*	*1.1%*	*1.4%*	*0.8%*	*1.2%*
	Green Energy Exports	$1.6	$1.7	$2.3	$2.6	$3.1	
	CAGR over previous decade	*-7.5%*	*-5.2%*	*2.7%*	*1.5%*	*1.7%*	*2.1%*
Services	Step Change	$14.2	$15.4	$18.2	$22.0	$26.3	
	CAGR over previous decade	*2.2%*	*2.1%*	*1.7%*	*1.9%*	*1.8%*	1.9%
	Progressive Change	$14.2	$15.3	$17.4	$19.9	$22.4	
	CAGR over previous decade	*2.2%*	*2.0%*	*1.3%*	*1.3%*	*1.2%*	*1.4%*
	Green Energy Exports	$14.2	$15.5	$19.6	$25.4	$33.0	
	CAGR over previous decade	*2.2%*	*2.2%*	*2.4%*	*2.6%*	*2.6%*	*2.6%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023a), Deloitte Access Economics

Table B.8: Australian Capital Territory industry gross value added by scenario, $ billion

Industry	Scenario	2022-23	2025-26	2035-36	2045-46	2055-56	Forecast period*
Agriculture	Step Change	$0.0	$0.1	$0.0	$0.0	$0.0	
	CAGR over previous decade	*-2.3%*	*8.6%*	*-6.6%*	*-1.8%*	*0.7%*	*-0.1%*
	Progressive Change	$0.0	$0.1	$0.0	$0.0	$0.0	
	CAGR over previous decade	*-2.3%*	*8.6%*	*-7.1%*	*-2.2%*	*0.2%*	*-0.5%*
	Green Energy Exports	$0.0	$0.1	$0.0	$0.0	$0.0	
	CAGR over previous decade	*-2.3%*	*8.8%*	*-6.3%*	*-1.4%*	*1.2%*	*0.4%*
Mining	Step Change	$0.1	$0.0	$0.0	$0.1	$0.1	
	CAGR over previous decade	*-3.4%*	*-4.3%*	*4.2%*	*7.1%*	*5.6%*	*2.5%*
	Progressive Change	$0.1	$0.0	$0.0	$0.1	$0.1	
	CAGR over previous decade	*-3.4%*	*-4.4%*	*3.8%*	*6.6%*	*5.1%*	*2.0%*
	Green Energy Exports	$0.1	$0.0	$0.0	$0.1	$0.1	
	CAGR over previous decade	*-3.4%*	*-4.3%*	*4.2%*	*7.3%*	*6.1%*	*2.7%*
Manufacturing	Step Change	$0.6	$0.7	$0.7	$0.7	$0.6	
	CAGR over previous decade	*1.5%*	*3.8%*	*0.6%*	*-0.6%*	*-1.1%*	*0.0%*
	Progressive Change	$0.6	$0.7	$0.6	$0.5	$0.5	
	CAGR over previous decade	*1.5%*	*3.7%*	*-0.4%*	*-1.6%*	*-1.8%*	*-0.9%*
	Green Energy Exports	$0.6	$0.7	$0.8	$0.8	$0.7	
	CAGR over previous decade	*1.5%*	*4.2%*	*1.7%*	*-0.2%*	*-0.8%*	*0.6%*
Utilities	Step Change	$0.8	$0.9	$0.9	$0.9	$0.9	
	CAGR over previous decade	*3.1%*	*2.1%*	*0.4%*	*0.6%*	*0.1%*	*0.3%*
	Progressive Change	$0.8	$0.8	$0.8	$0.8	$0.8	
	CAGR over previous decade	*3.1%*	*2.0%*	*-0.4%*	*0.0%*	*-0.5%*	*-0.2%*
	Green Energy Exports	$0.8	$0.9	$1.0	$1.0	$1.1	
	CAGR over previous decade	*3.1%*	*2.5%*	*1.3%*	*0.2%*	*0.3%*	*0.7%*
Construction	Step Change	$3.3	$3.4	$4.1	$4.9	$5.5	
	CAGR over previous decade	*3.3%*	*2.4%*	*2.0%*	*1.7%*	*1.3%*	*1.6%*
	Progressive Change	$3.3	$3.4	$3.9	$4.4	$4.8	
	CAGR over previous decade	*3.3%*	*2.3%*	*1.5%*	*1.3%*	*0.8%*	*1.2%*
	Green Energy Exports	$3.3	$3.5	$4.7	$5.5	$6.5	
	CAGR over previous decade	*3.3%*	*2.7%*	*3.1%*	*1.4%*	*1.7%*	*2.1%*
Services	Step Change	$38.2	$40.5	$50.7	$64.7	$80.8	
	CAGR over previous decade	*3.8%*	*3.6%*	*2.3%*	*2.5%*	*2.3%*	2.3%
	Progressive Change	$38.2	$40.3	$48.4	$58.5	$68.8	
	CAGR over previous decade	*3.8%*	*3.5%*	*1.9%*	*1.9%*	*1.6%*	*1.8%*
	Green Energy Exports	$38.2	$40.9	$54.4	$74.8	$101.6	
	CAGR over previous decade	*3.8%*	*3.7%*	*2.9%*	*3.2%*	*3.1%*	*3.0%*

*Note: Forecast period refers to CAGR from 2022-23 to 2055-56. 'Utilities' is the Electricity, Gas, Water and Waste Services industry.

Source: Australian Bureau of Statistics (2023a), Deloitte Access Economics

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