

# Anticipating Future Skills - Cairns



13 November 2018

# Jobs Queensland

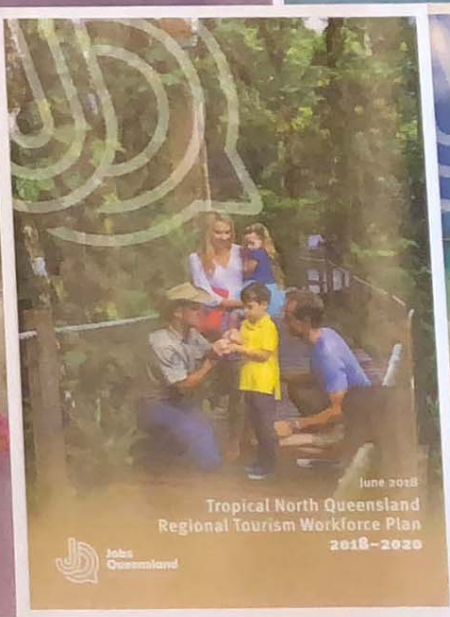
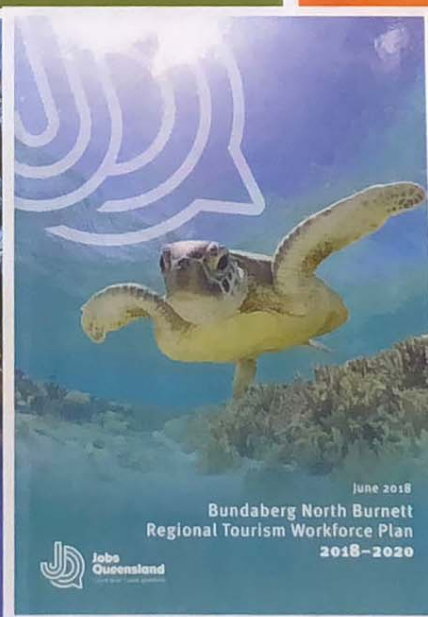
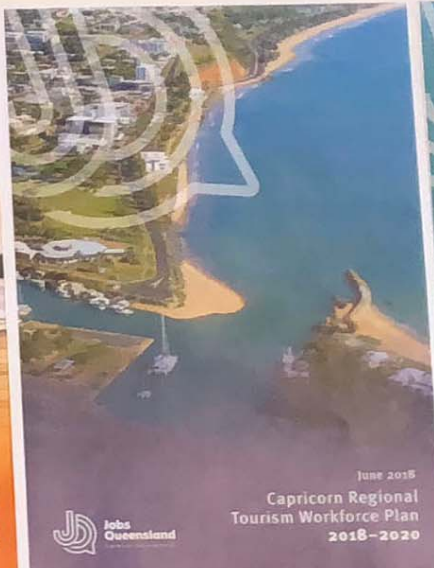
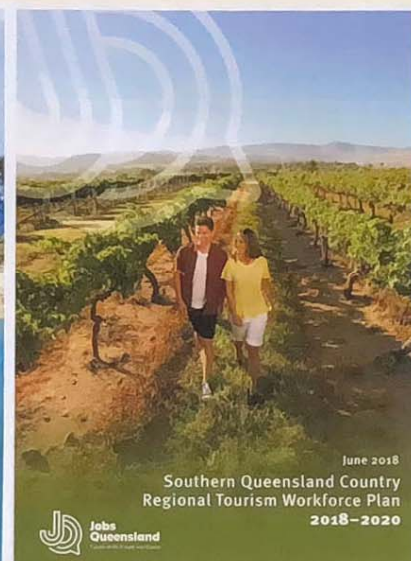
## A voice for industry and the regions

- anticipate future skill needs
- dedicated engagement, research and analytics capability
- workforce development and planning
- a conduit between industry, Government and training

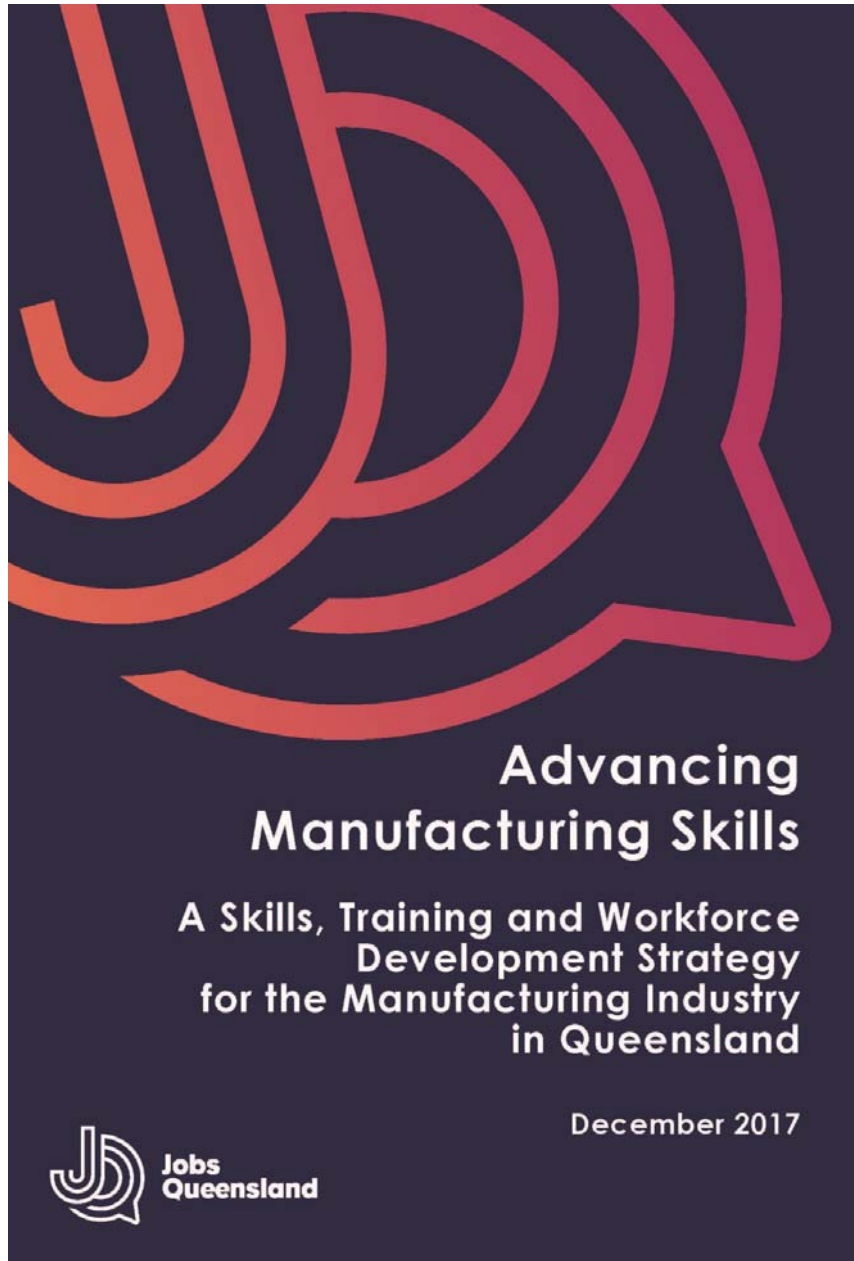


**Jobs Queensland strives  
to shape a better future for  
the social and economic  
prosperity of Queensland**











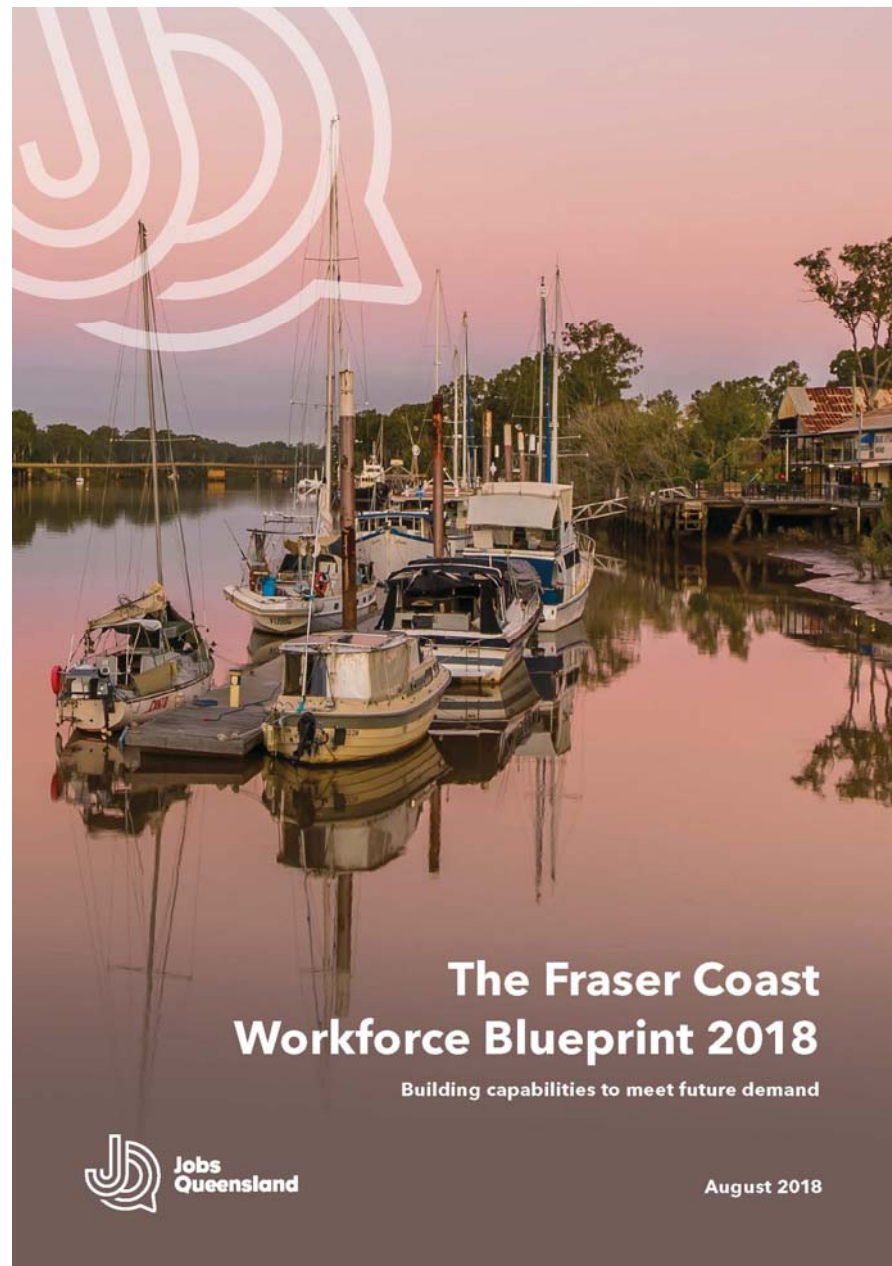
# Growing Opportunities in the Fraser Coast: Informing regional workforce development

Andrew Reeson, Claire Mason and Todd Sanderson



Jobs  
Queensland

MAKE  
GREAT  
HAPPEN



# The Fraser Coast Workforce Blueprint 2018

Building capabilities to meet future demand



Jobs  
Queensland

August 2018



# Anticipating Future Skills



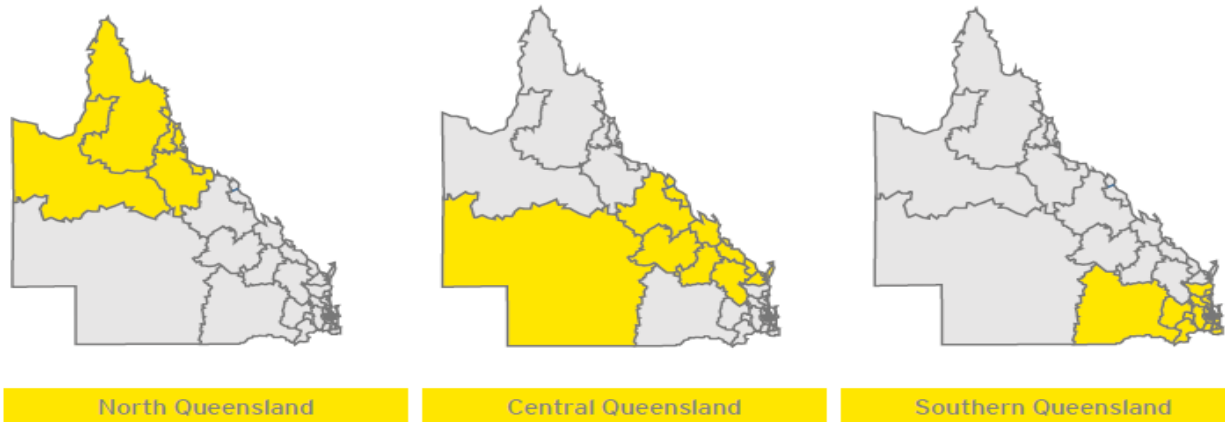
# Anticipating Future Skills project



- Expert forum held November 2016 to co-design principles for developing a place-based approach to anticipating skills needs.
- Combination of scenario planning and economic modelling to 2022
- Baseline scenario developed utilising Queensland Treasury Budget forecasts
- Three plausible future scenarios to help manage future uncertainty

# Scenario development

- In late 2017, workshops conducted across North, Central and Southern Queensland
- Focus on the impact of various scenarios on regional economy, industries and labour markets
- Feedback also sought via survey







# The Scenarios

# SCENARIO ONE

## TECHNOLOGICAL CHANGE



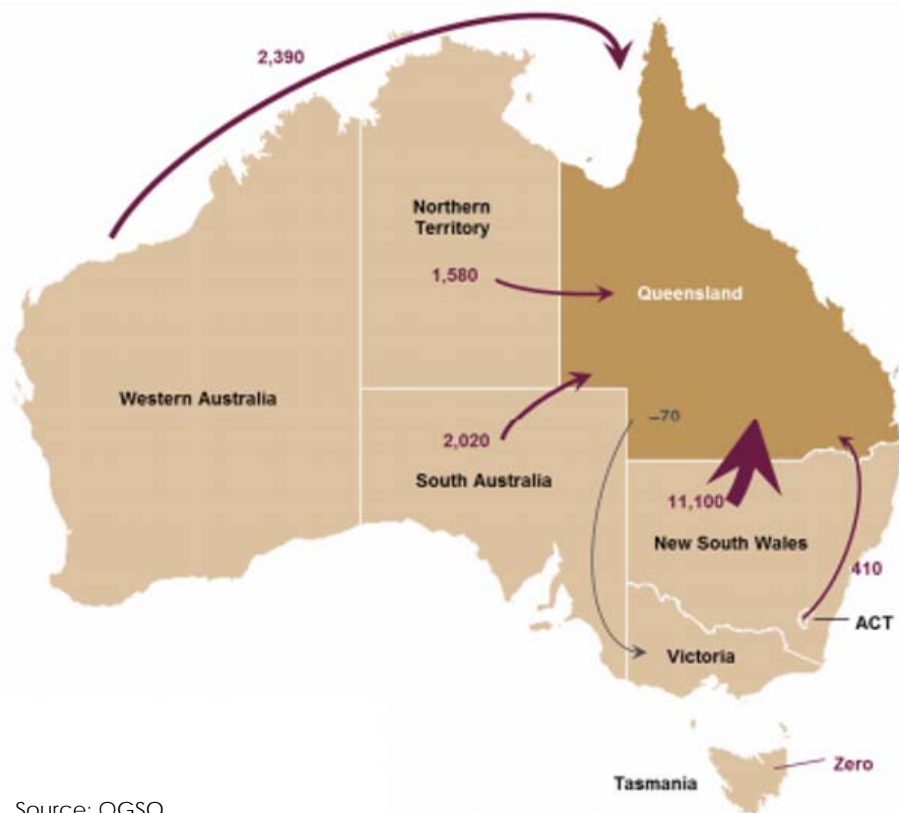
- To increase technological growth such that average labour productivity of all industries in Queensland is 25 base points higher than the baseline each year between 2017-18 and 2021-22.



HE Tech, Underwood. Photographer: Welcome to the Fold.

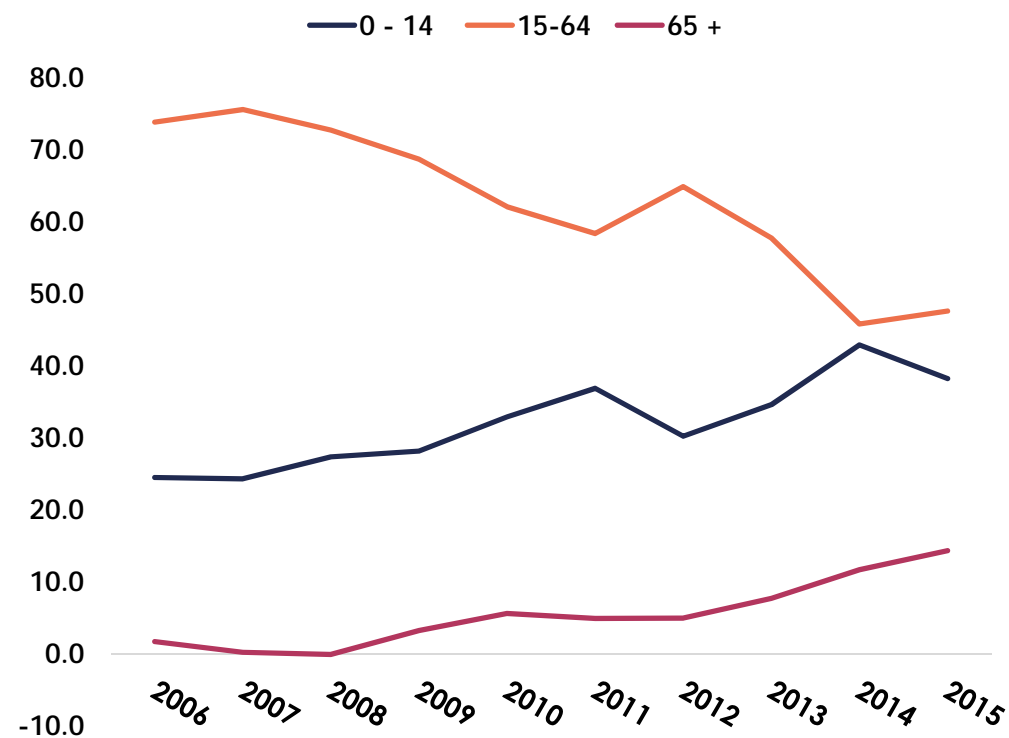
# SCENARIO TWO CHANGING WORKFORCE THROUGH MIGRATION

Net interstate migration flows between Queensland and other states, 2016-17



Source: QGSO

Queensland interstate migration by age group – ten years to 2014-15



Source: ABS 3412.0 – Migration, Australia



## SCENARIO TWO

### CHANGING WORKFORCE THROUGH MIGRATION



- An increase in net interstate migration to Queensland of 30,000 beginning in 2018; while international migration remains at 23,000 per annum over the forecast period.
- The composition of interstate migration to reflect the age composition of interstate migrants.

## SCENARIO THREE EXTERNAL IMPACT

# 3

- That the price of iron ore, coking coal and thermal coal falls 50 per cent from their respective baseline prices between 2017-18 and 2021-22.

More than **90%** of Queensland's saleable coal is exported overseas.



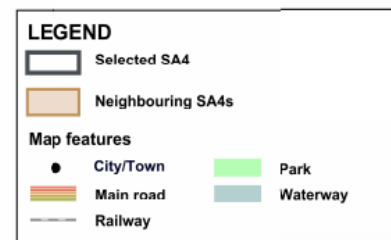
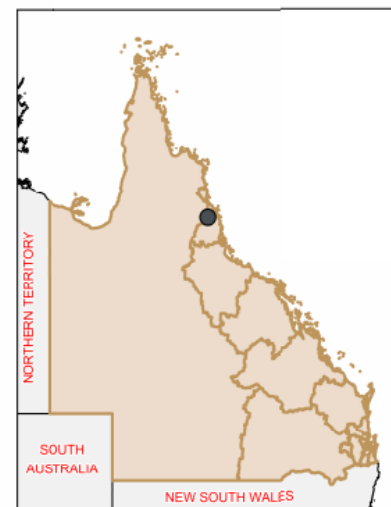
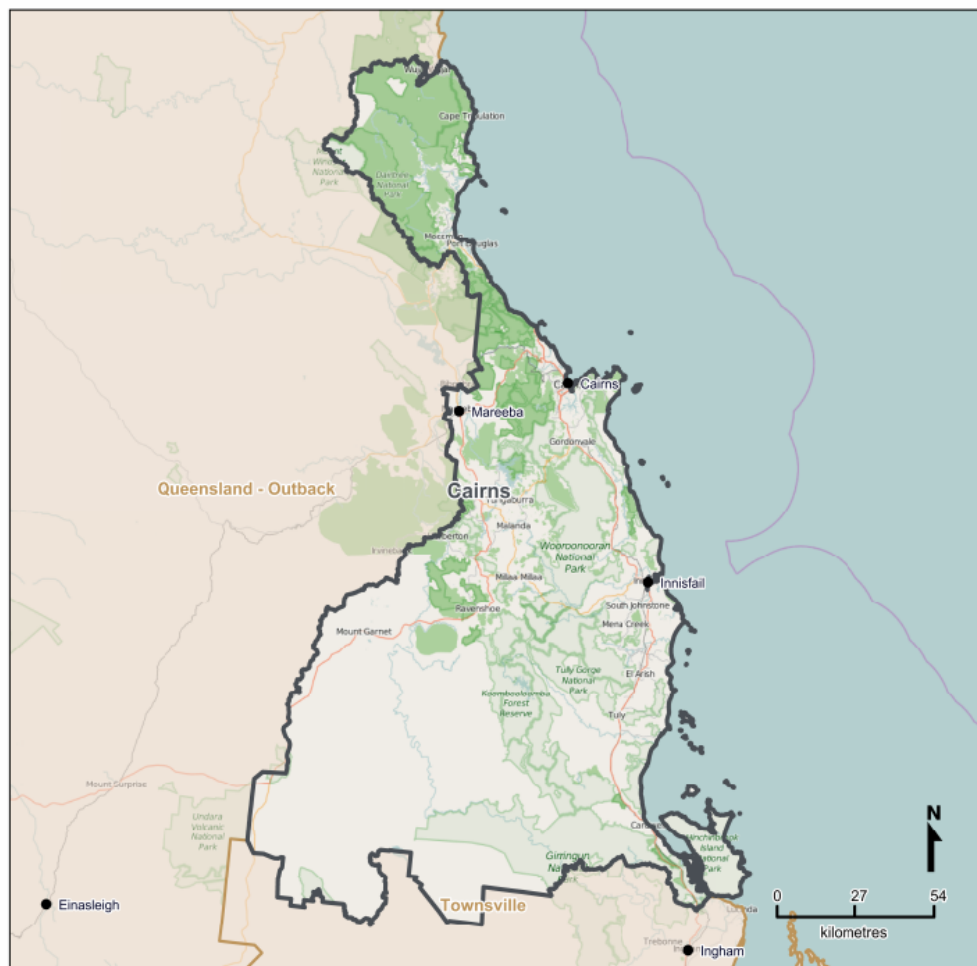
Source: Queensland Treasury, 2017



# The Modelling



# Cairns SA4 (ASGS Code 306), 2016



Map produced by Queensland Government Statistician's Office,  
Queensland Treasury (<http://www.qgso.qld.gov.au/products/maps/>).  
Data sourced from ABS 1270.0.55.001

© OpenStreetMap contributors (<http://openstreetmap.org/>)

 <http://creativecommons.org/licenses/by/4.0>

© The State of Queensland (Queensland Treasury) 2016

# Model outputs



- Industry data – ANZSIC Group (3 digit)
  - 214 Industry Groups
- Occupation data – ANZSCO Unit Group (4 digit)
  - 358 Occupation Unit Groups
- Australian Standard Classification of Education
  - Level of Education (e.g. Bachelor degree)
  - Field of Education (e.g. Food, Hospitality and Personal Services)

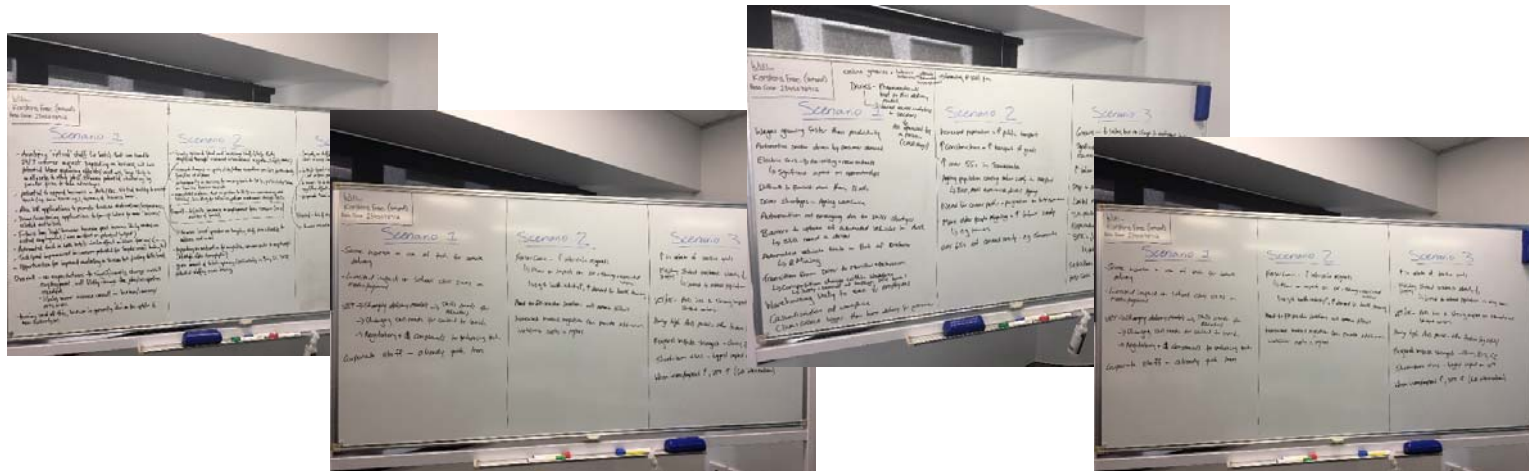


# Testing and Validation



# Testing and validation of draft outputs

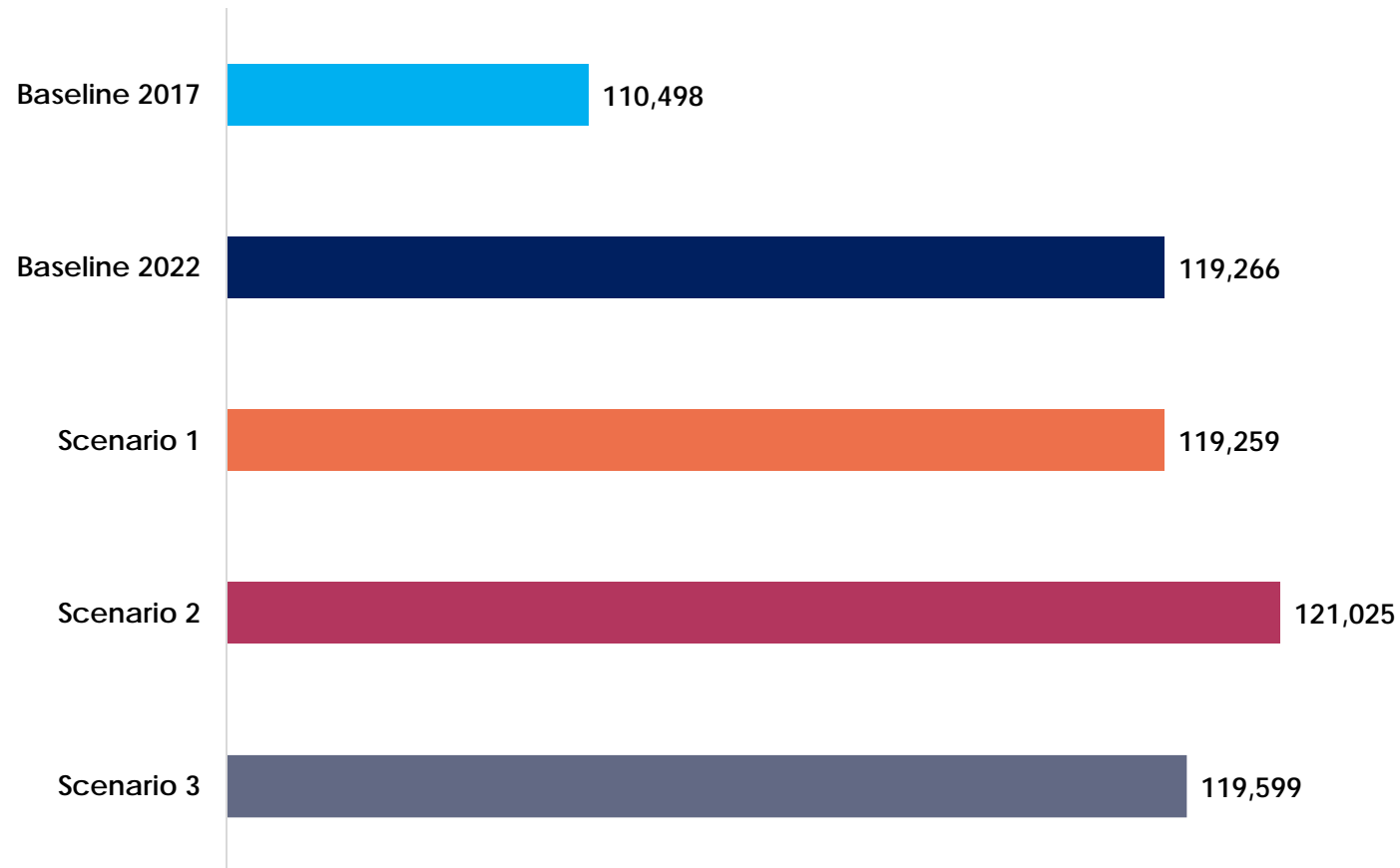
- Stakeholders were presented with an overview of the draft modelling outputs
- Feedback was incorporated to ensure that results accurately reflect the realities of the current and future workforce





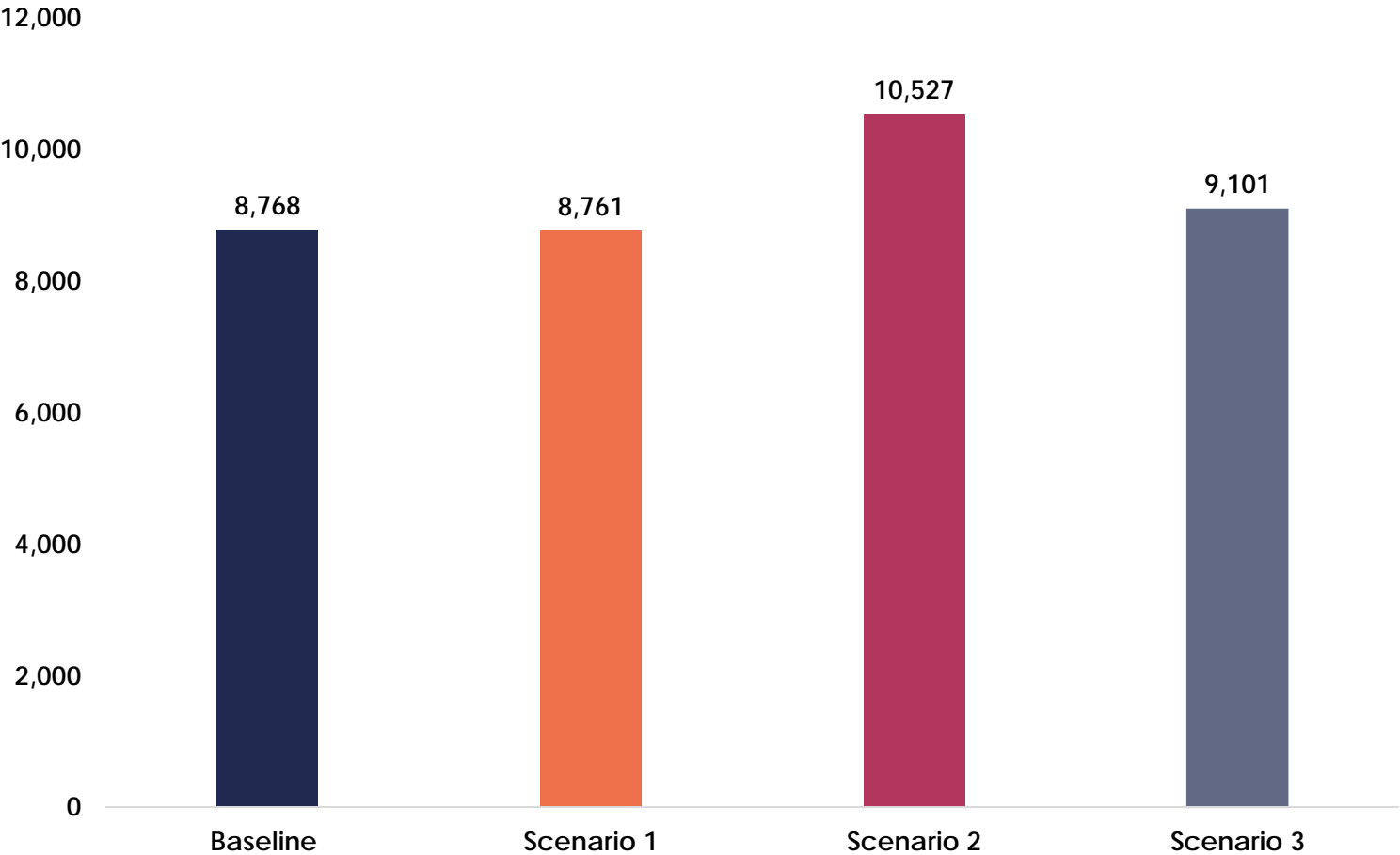
# Key Findings

# Employment to 2022 across all scenarios, Cairns

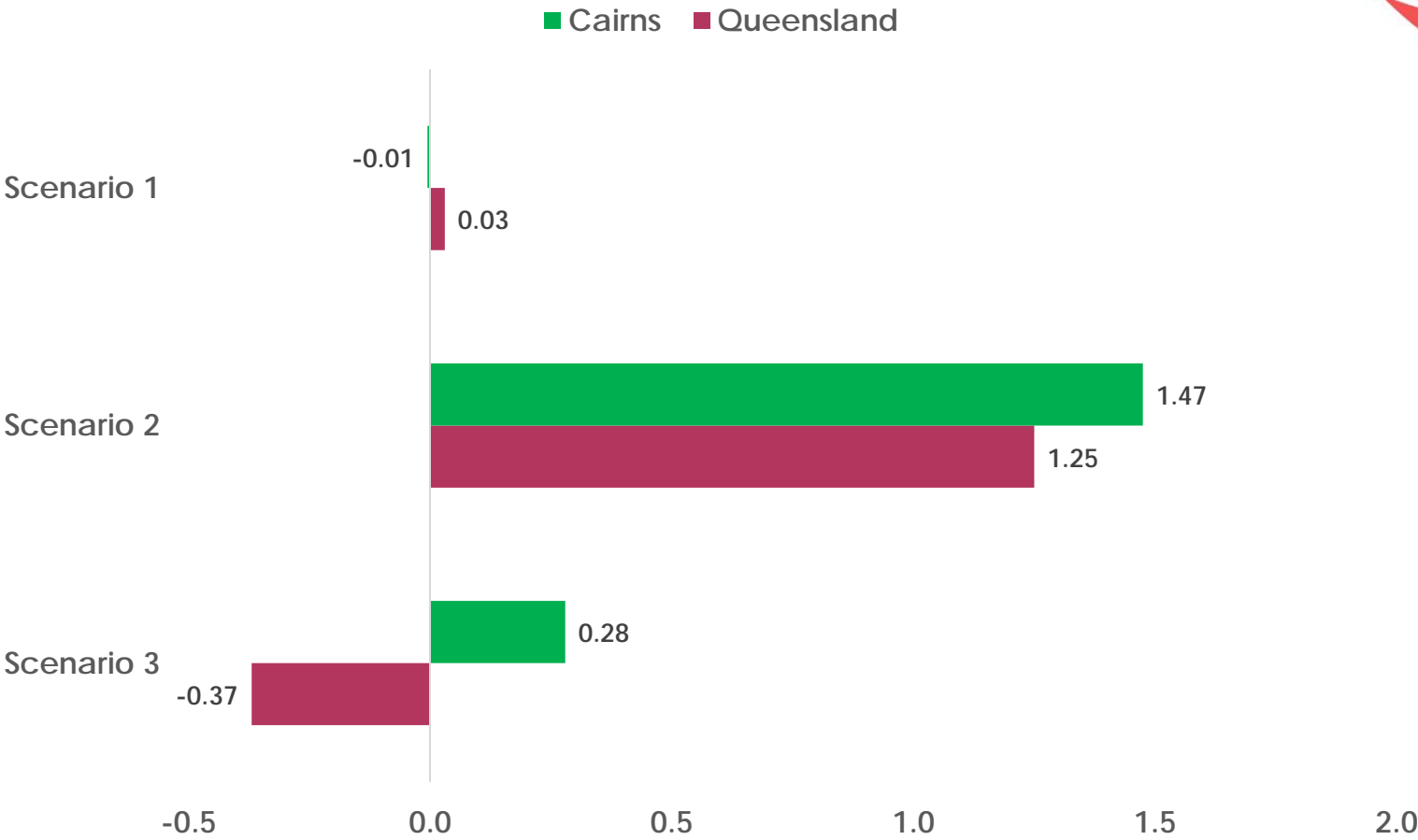




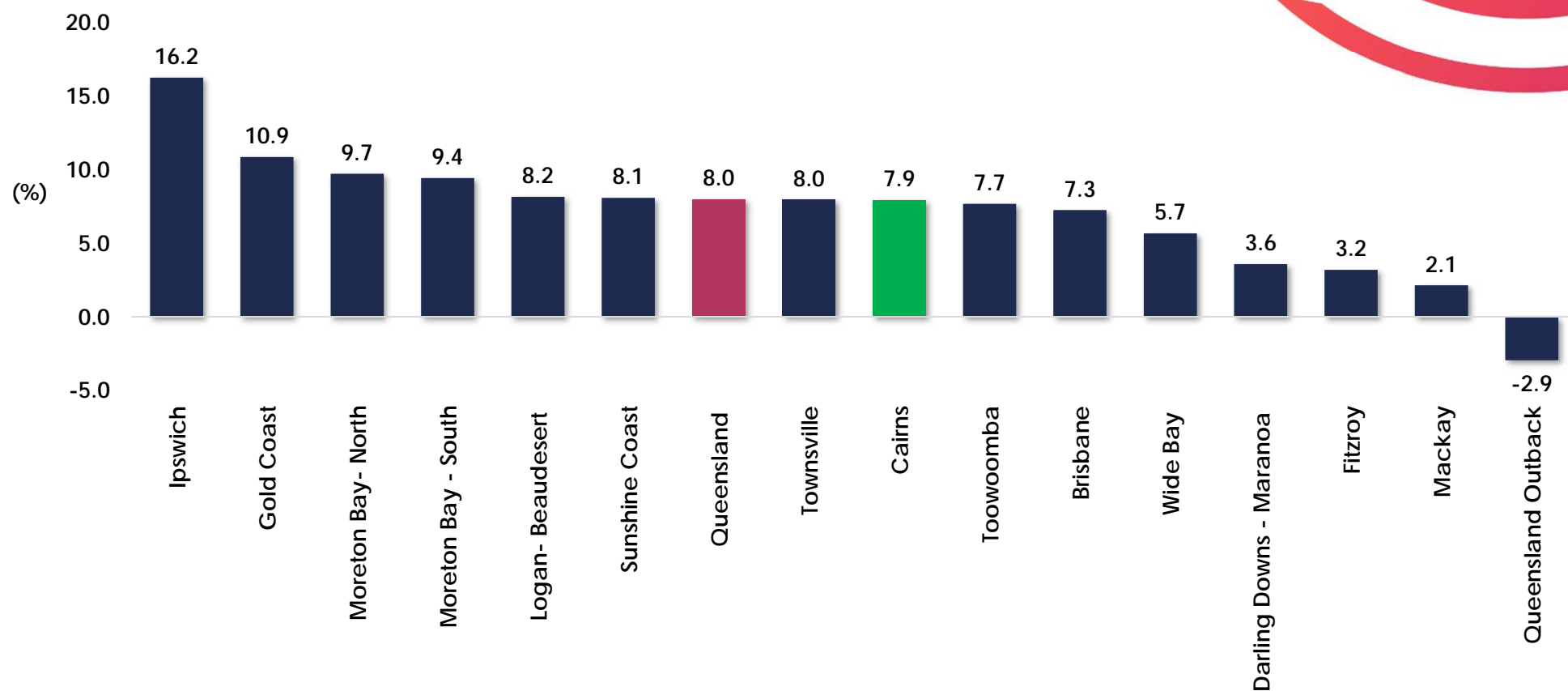
# New jobs in Cairns in 2022, all scenarios



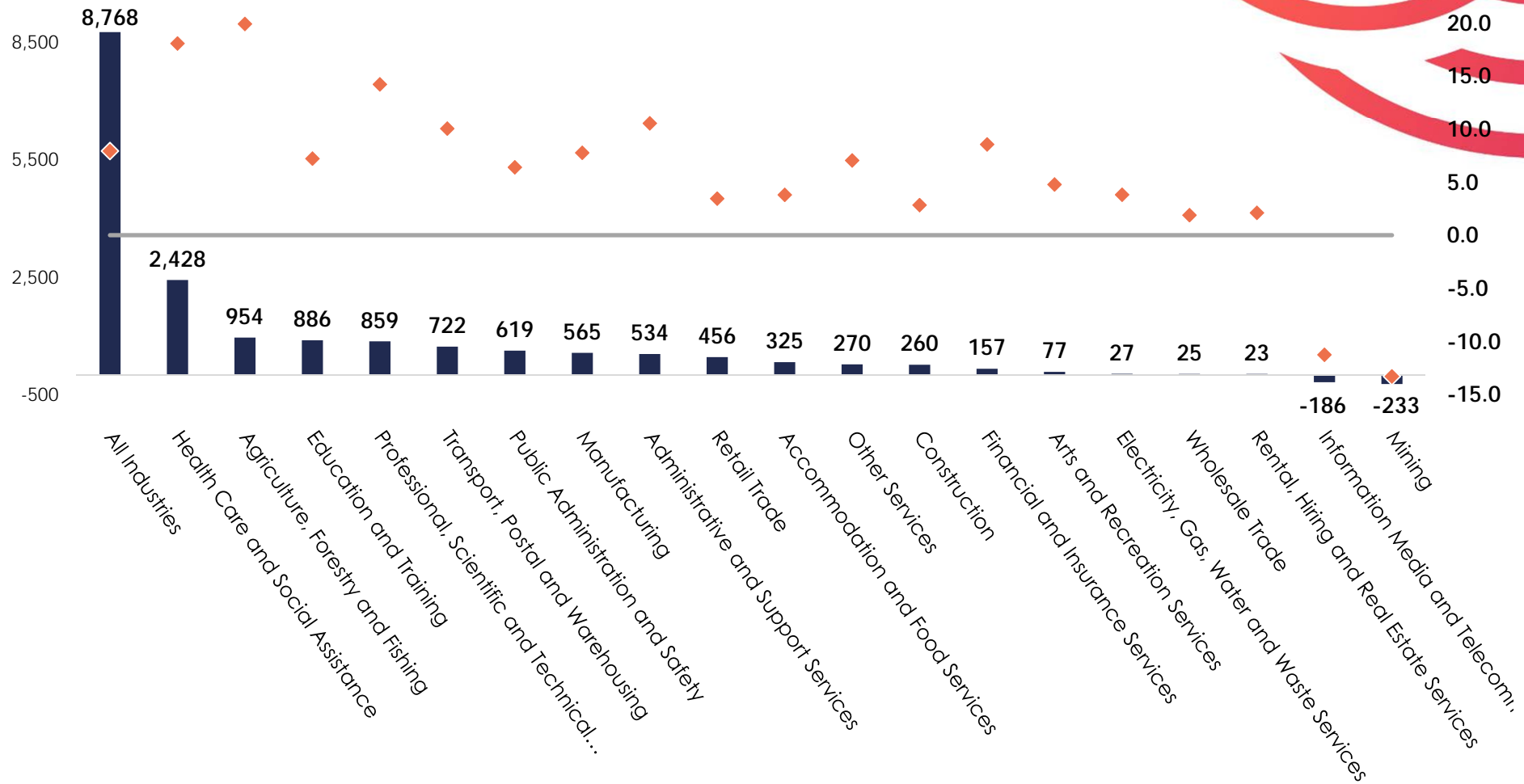
# Impact of scenarios, Cairns and Queensland (change from 2022 baseline)



## Jobs growth varies across regions (baseline scenario, 2017 – 2022)



# Jobs growth varies across industries

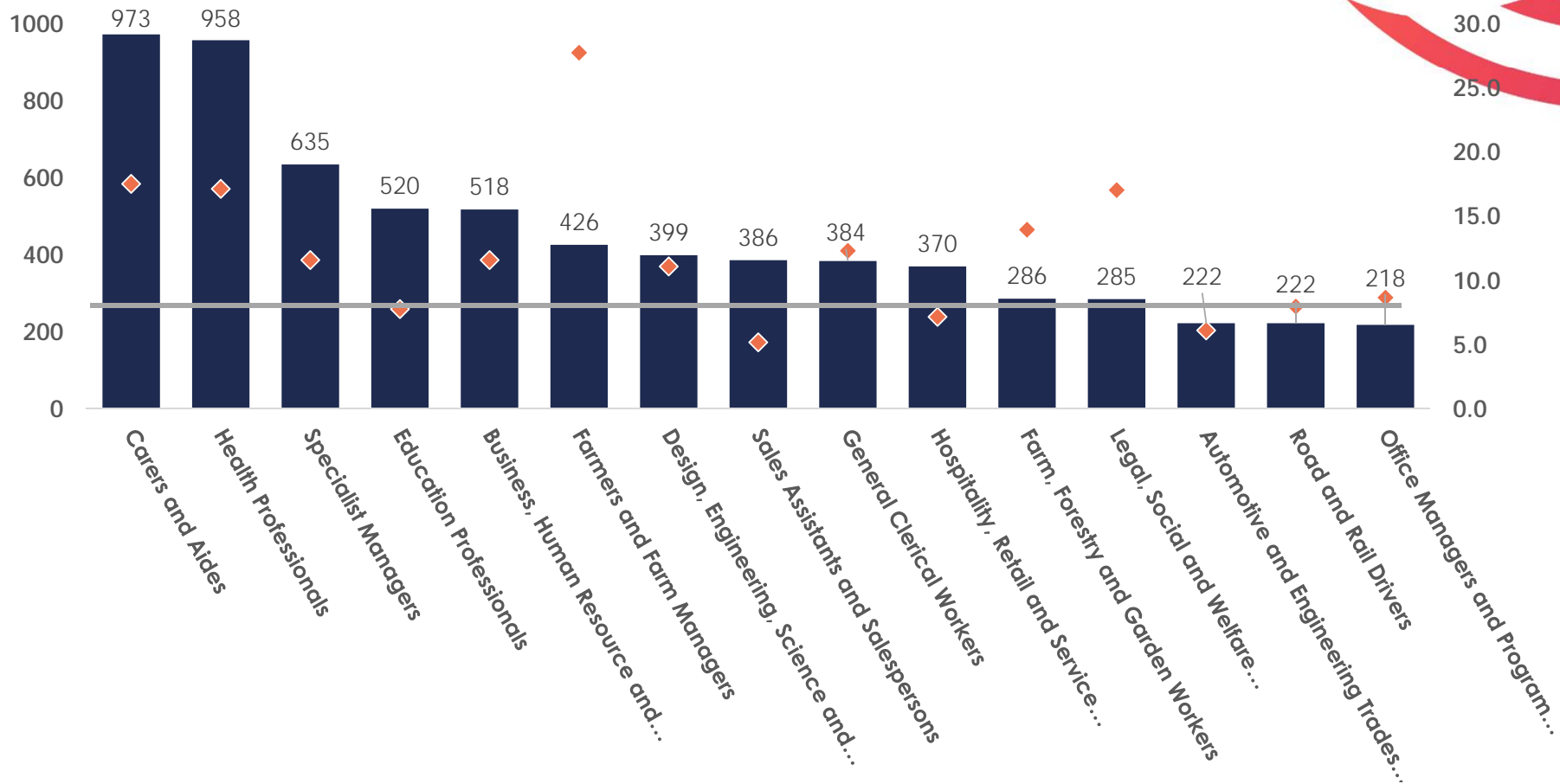




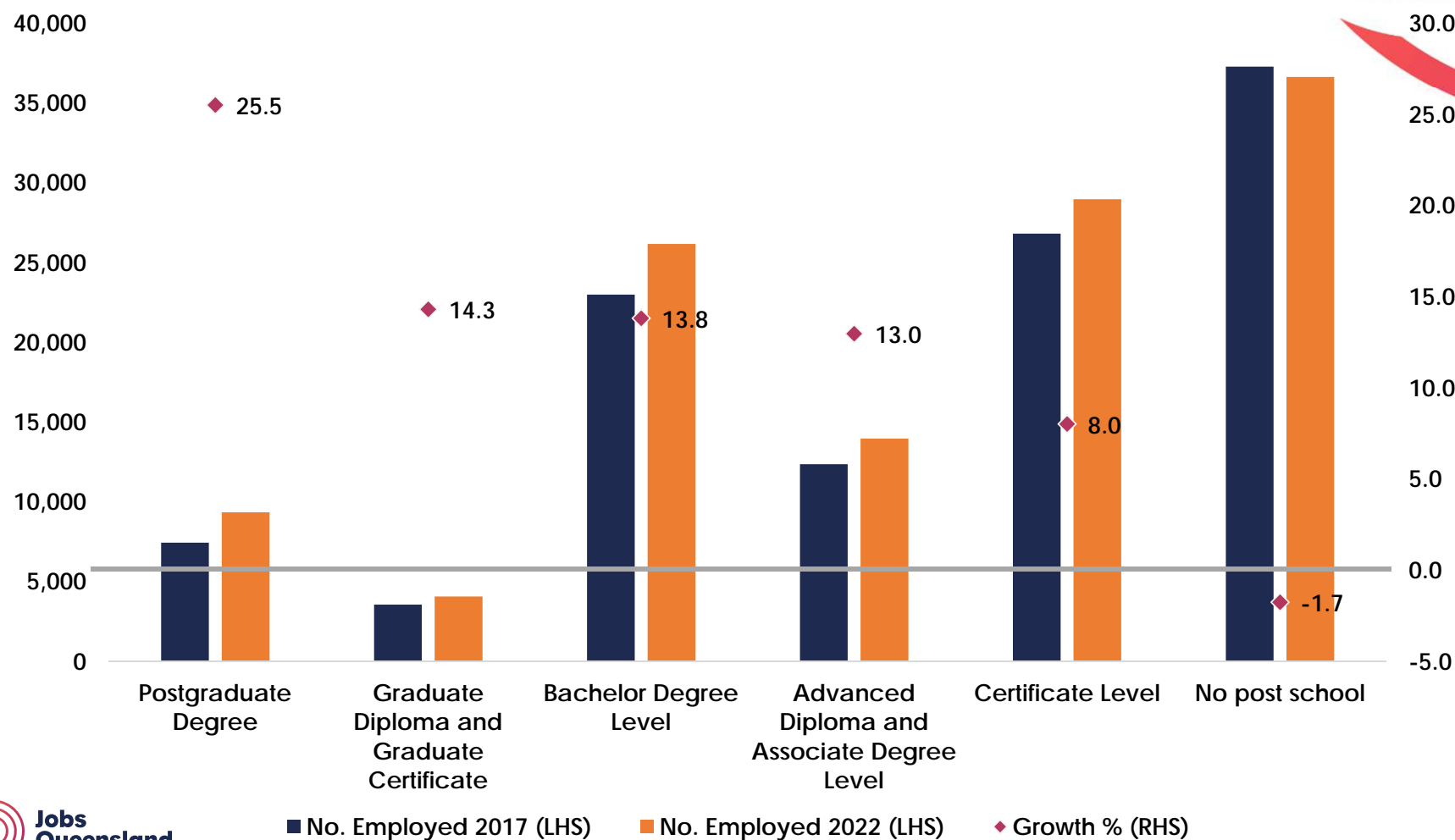
# Baseline Employment for top 15 industry sub-divisions - 2017 to 2022

Industry Sub-Divisions	No. employed 2017	Change by 2022 (%)
○ Preschool and School Education	7,507	7.0
○ Public Administration	7,347	6.0
○ Other Store-Based Retailing	6,806	4.0
○ Food and Beverage Services	6,508	0.0
○ Construction Services	6,259	4.7
○ Professional, Scientific and Technical Services (Except Computer System Design and Related Services)	5,638	13.7
○ Medical and Other Health Care Services	5,305	14.3
○ Food Retailing	4,236	2.4
○ Agriculture	3,646	13.7
○ Hospitals	3,373	15.9
○ Social Assistance Services	3,119	22.8
○ Food Product Manufacturing	2,854	11.1
○ Adult, Community and Other Education	2,663	4.2
○ Administrative Services	2,643	8.7
○ Building Cleaning, Pest Control and Other Support Services	2,423	12.6

# Jobs growth varies across occupations (baseline scenario, 2017 – 2022)



# A more educated workforce





# Exploring the Data



# Anticipating Future Skills report



# Industry and regional snapshots

## Health Care and Social Assistance

S  
N  
A  
P  
S  
H  
O  
T

### Projected change in industry employment, all scenarios, 2017-2022

#### 2017 Baseline



Number Employed:

309,440

#### 2022 Projections

##### Baseline



+61,394

370,834

##### Scenario 1



+60,950

370,390

##### Scenario 2



+69,712

379,150

##### Scenario 3



+59,274

368,715

**Profile:** The Health Care and Social Assistance industry is mainly engaged in providing human health care and social assistance. It includes hospitals, medical and other care services (including allied health, ambulances and pathology), residential care services and social assistance services, such as child care, disabilities assistance, and welfare counselling services.

**Outlook:** This is the largest employing industry in Queensland and under the baseline scenario it is expected to grow by almost 20 per cent by 2022. The fall in household consumption which occurs under Scenario One has a negative effect on this industry and there are almost 450 fewer workers compared with the baseline. The economic effect of Scenario Three also affects the Health Care and Social Assistance industry negatively, with around 2100 fewer workers employed in this scenario compared with the baseline. The demographic changes in Scenario Two increases employment in this industry at twice the state average, with an additional 8318 workers projected to be needed by 2022.

## Brisbane

S  
N  
A  
P  
S  
H  
O  
T

### Projected change in regional employment, all scenarios, 2017-2022

#### 2017 Baseline



Number Employed:

685,212

#### 2022 Projections

##### Baseline



+49,740

734,952

##### Scenario 1



+50,194

735,406

##### Scenario 2



+55,949

741,161

##### Scenario 3



+50,202

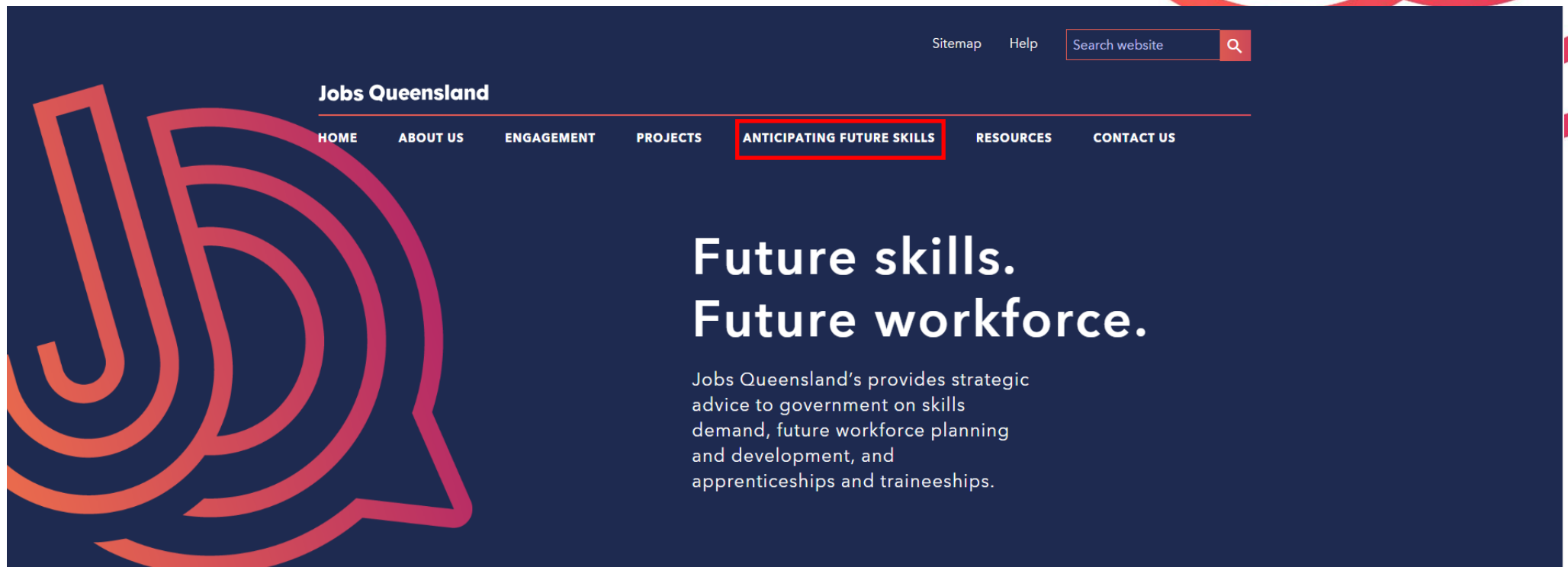
735,414

**Profile:** The Brisbane region is comprised of five SA4 regions: Brisbane - East, Brisbane - North, Brisbane - South, Brisbane - West and Brisbane Inner City. It covers an area from Brighton in the north and Redland Bay to the east, the Brisbane CBD, Sunnybank Hills to the south, and an area west to Upper Brookfield and Anstead.

It represents the primary employment hub for many industries in Queensland, including Health Care and Social Assistance, due to a number of prominent hospitals, and Education and Training, comprised of the many schools, universities and TAFE campuses in the region. It is also the location of many prominent business and state government department operations, resulting in strong employment within the Professional, Scientific and Technical Services and Public Administration and Safety sectors.

**Outlook:** Employment in the Brisbane region is forecast to grow by 7.3 per cent (approximately 49,700 people) by 2022 and it increases under all other scenarios. Under Scenario One, it is projected that employment increases by an extra 454 people (with around half of this increase attributable to the Professional sector). Scenario Three sees employment increase by a similar amount but in this case, Manufacturing also contributes to this additional employment. With the region being one of the main landing spots for additional interstate migration, employment grows by 8.2 per cent (or almost 56,000 additional workers) under Scenario Two.

# Jobs Queensland Website



Together with its partners, Jobs Queensland strives to shape a better future for the social and economic prosperity of Queensland. Find out more about our work.



# Data tools: Regions



## Anticipating Future Skills report

Download the Anticipating Future Skills: Jobs growth and alternative futures for Queensland to 2022 report.

[DOWNLOAD THE REPORT \(2.25MB\) →](#)



## Additional statewide data

View additional statewide charts.

[READ MORE →](#)



## Regions

View detailed employment projections for 15 regional areas across Queensland.

[READ MORE →](#)



## Industries

View detailed employment projections by ANZSIC industry.

[READ MORE →](#)



## Occupations

View detailed employment projections by ANZSCO occupation.

[READ MORE →](#)



## Qualifications

View the key findings for both Field of Education and Level of Education.

[READ MORE →](#)



## Anticipating Future Skills Data Tool

This Anticipating Future Skills data and information provided by Jobs Queensland are designed to provide a guide to the future direction of the labour market in Queensland, however, they are subject to an inherent degree of uncertainty.

Jobs Queensland does not guarantee or represent that the data and information are accurate, up to date or complete, and disclaims liability for all claims, losses, damages or costs of whatever nature and howsoever occurring, arising as a result of relying on the data and information, regardless of the form of action, whether in contract, tort (including negligence), breach of statutory duty or otherwise to the maximum extent permitted by law. Jobs Queensland is not liable for any analysis or transformation of the data by the licensee or any third party.

**This data is licenced under a Creative Commons Attribution – Non-commercial – Share Alike 4.0 International licence (CC BY SA). This means:**

- Any publications or reports using this data must cite Jobs Queensland as the source and indicate if any changes to the data have been made;
- The data may not be used for commercial purposes; and
- The data may be shared and/or transformed but only where this is done on the same licence conditions.

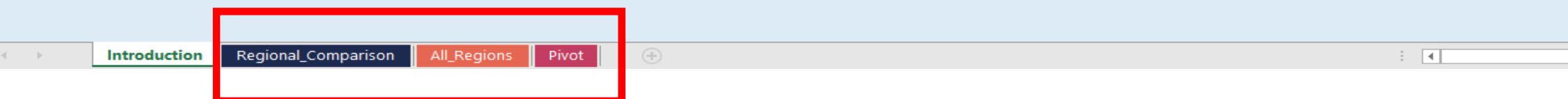
**In addition:**

- Given the speculative nature of the data, it is more productive to focus on the trends rather than the numbers in isolation;
- The projections do not take into account replacement demand as employees change jobs or leave the labour force, which means that future employment opportunities are understated; and
- While the modelling provides an estimate based on three plausible futures, the future is not guaranteed; the scenarios chosen are three out of a myriad.

**The classifications used in this tool are those prepared by the Australian Bureau of Statistics.**

- The industries used are classified according to Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 (Revision 2.0)
- The occupations are classified according to Australian and New Zealand Standard Classification of Occupations (ANZSCO), 2013, Version 1.2
- The regions are based on Statistical Area Level 4 (SA4) regions
- There are 19 SA4s in Queensland but the five Brisbane SA4s have been combined to take into account the larger natural labour market.

**Use the tab(s) below to access the data tool**



# Anticipating Future Skills: Cairns

## Industry Projections by Occupation by Region

Select from drop down list:

Industry: E - Construction

Select from drop down list:

Occupation: 33 - Construction Trades Workers

Select from drop down list:

Region (SA4): Cairns

Select from drop down list:

Comparison Region: Townsville

Note: Projections are indicative and not definitive of future employment growth

## PROJECTED EMPLOYMENT NUMBERS

Occupation and Industry in Selected Regions:

	2017		2022 Baseline		Scenario 1: Technology		Scenario 2: Migration		Scenario 3: Commodity Prices	
	Cairns	Townsville	Cairns	Townsville	Cairns	Townsville	Cairns	Townsville	Cairns	Townsville
Construction Trades Workers in Construction	2,826	2,197	2,884	2,268	2,885	2,268	2,946	2,305	2,859	2,241
Total Construction Trades Workers employed in region	3,124	2,420	3,190	2,497	3,192	2,496	3,254	2,536	3,170	2,471
Total employment in Construction	9,144	7,332	9,404	7,640	9,413	7,641	9,600	7,759	9,298	7,522
Total employment for region	110,498	94,379	119,266	101,898	119,259	101,835	121,025	103,359	119,599	101,637

In this tool, industries of employment are broken down to the Group level (3-digit codes) of the ANZSIC classification system, while the occupations of employed people are broken down to the Sub-Major Group (2-digit codes) of the ANZSCO classification system, as used by the Australian Bureau of Statistics. Regions are at the Statistical Area 4 level.

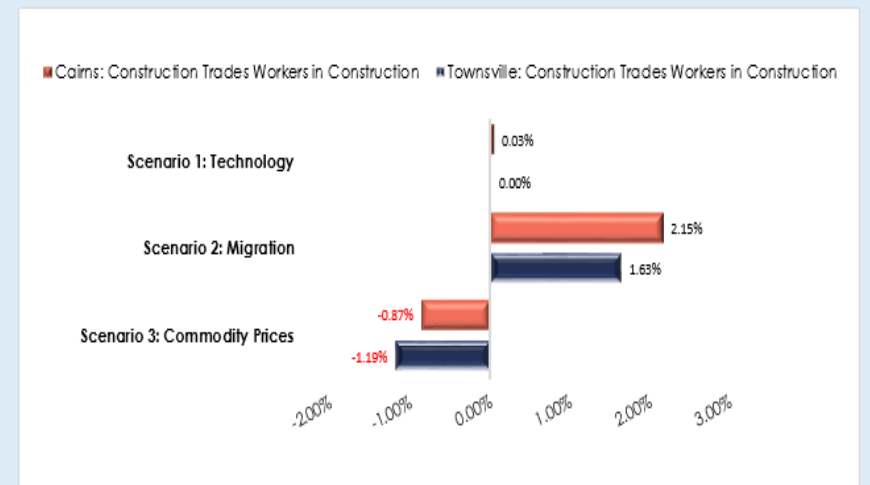


## SCENARIO IMPACTS

Change in Employment Numbers compared with 2022 Projection:

	Scenario 1: Technology		Scenario 2: Migration		Scenario 3: Commodity Prices	
	Cairns	Townsville	Cairns	Townsville	Cairns	Townsville
Construction Trades Workers in Construction	1	0	62	37	-25	-27
Total Construction Trades Workers employed in region	2	-1	64	39	-20	-26
Total employment in Construction	9	1	196	119	-106	-118
Total employment for region	-7	-63	1,759	1,461	333	-261

Changes in Growth (%) compared to 2022 Projection:



## Anticipating Future Skills: Scenario Comparison with 2022, All Regions Industry Projections by Occupation

Select from drop down list:

Industry: 852 - Pathology and Diagnostic Imaging Services

Select from drop down list:

Occupation: 5 - Clerical and Administrative Workers

Select from drop down list:

Scenario: Scenario 2: Migration

Note: Projections are indicative and not definitive of future employment growth

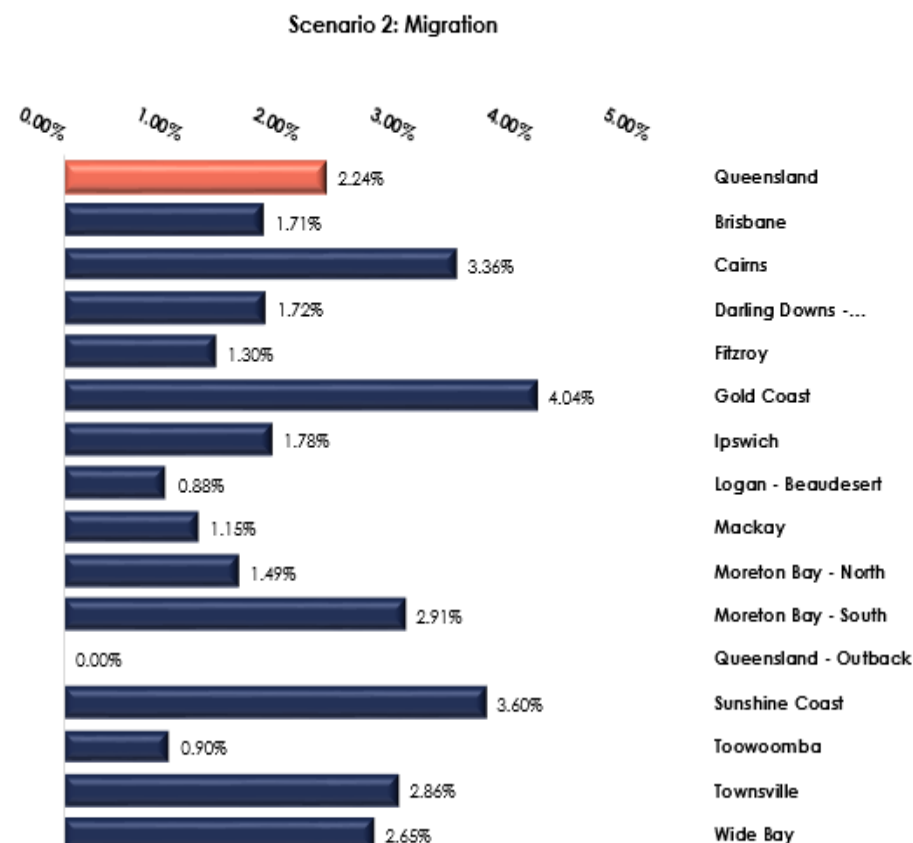
### Employment Numbers: All Regions

Region	2017	2022	Scenario 2: Migration
Queensland	3,135	3,345	3,420
Brisbane	1,127	1,170	1,190
Cairns	142	149	154
Darling Downs - Maranoa	59	58	59
Fitzroy	152	154	156
Gold Coast	422	470	489
Ipswich	184	225	229
Logan - Beaudesert	104	114	115
Mackay	87	87	88
Moreton Bay - North	120	134	136
Moreton Bay - South	94	103	106
Queensland - Outback	25	22	22
Sunshine Coast	205	222	230
Toowoomba	105	111	112
Townsville	163	175	180
Wide Bay	147	151	155

In this tool, industries of employment are broken down to the Group level (3-digit codes) of the ANZSIC classification system, while the occupations of employed people are broken down to the Sub-Major Group (2-digit codes) of the ANZSCO classification system, as used by the Australian Bureau of Statistics. Regions are at the Statistical Area 4 level. Given the small numbers associated with some occupation/industry combinations, charts may return nil results.



### Change in Employment Numbers compared with 2022 Projection



# Anticipating Future Skills: Cairns

## Industry Projections by Occupation by Region

In this tool, industries of employment are broken down to the Group level (3-digit codes) of the ANZSIC classification system, while the occupations of employed people are broken down to the Sub-Major Group (2-digit codes) of the ANZSCO classification system, as used by the Australian Bureau of Statistics. Regions are at the Statistical Area 4 level.



Select from drop down list:

Industry: Q - Health Care and Social Assistance

Select from drop down list:

Occupation: 42 - Carers and Aides

Select from drop down list:

Region (SA4): Cairns

Select from drop down list:

Comparison Region: Queensland

Note: Projections are indicative and not definitive of future employment growth

## PROJECTED EMPLOYMENT NUMBERS

Occupation and Industry in Selected Regions:

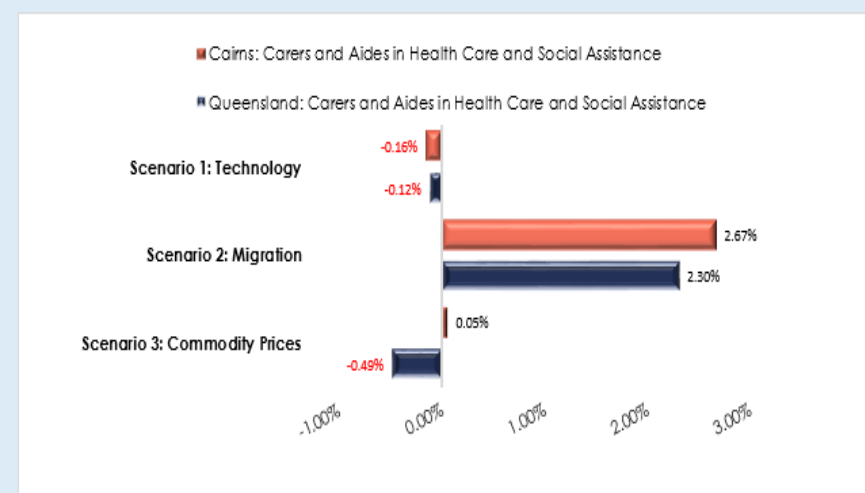
	2017		2022 Baseline		Scenario 1: Technology		Scenario 2: Migration		Scenario 3: Commodity Prices	
	Cairns	Queensland	Cairns	Queensland	Cairns	Queensland	Cairns	Queensland	Cairns	Queensland
Carers and Aides in Health Care and Social Assistance	3,128	75,531	3,826	94,011	3,820	93,897	3,928	96,177	3,828	93,553
Total Carers and Aides employed in region	5,549	112,581	6,522	135,768	6,514	135,631	6,691	138,813	6,529	135,146
Total employment in Health Care and Social Assistance	13,436	309,440	15,864	370,834	15,839	370,390	16,289	379,152	15,863	368,714
Total employment for region	110,498	2,373,023	119,266	2,562,671	119,259	2,563,317	121,025	2,594,613	119,599	2,553,245

## SCENARIO IMPACTS

Change in Employment Numbers compared with 2022 Projection:


	Scenario 1: Technology		Scenario 2: Migration		Scenario 3: Commodity Prices	
	Cairns	Queensland	Cairns	Queensland	Cairns	Queensland
Carers and Aides in Health Care and Social Assistance	-6	-114	102	2,166	2	-458
Total Carers and Aides employed in region	-8	-137	169	3,045	7	-622
Total employment in Health Care and Social Assistance	-25	-444	425	8,318	-1	-2,120
Total employment for region	-7	646	1,759	31,942	333	-9,426

Changes in Growth (%) compared to 2022 Projection:



# Data tools: Industries





### Anticipating Future Skills report

Download the Anticipating Future Skills: Jobs growth and alternative futures for Queensland to 2022 report.

[DOWNLOAD THE REPORT \(2.25MB\) →](#)



### Additional statewide data

View additional statewide charts.


[READ MORE →](#)



### Regions

View detailed employment projections for 15 regional areas across Queensland.

[READ MORE →](#)



### Industries

View detailed employment projections by ANZSIC industry.


[READ MORE →](#)



### Occupations

View detailed employment projections by ANZSCO occupation.

[READ MORE →](#)



### Qualifications

View the key findings for both Field of Education and Level of Education.

[READ MORE →](#)



# Anticipating Future Skills: Queensland

## Industry Projections by Occupation



In this tool, industries of employment are broken down to the Group level (3-digit codes) of the ANZSIC classification system, while the occupations of employed people are broken down to the Sub-Major Group (2-digit codes) of the ANZSCO classification system, as used by the Australian Bureau of Statistics. Regions are at the Statistical Area 4 level.

Select from drop down list:

Industry: 020 - Aquaculture

Select from drop down list:

Occupation: 12 - Farmers and Farm Managers

Note: Projections are indicative and not definitive of future employment growth

## PROJECTED EMPLOYMENT NUMBERS

### Occupation and Industry in Selected Regions:

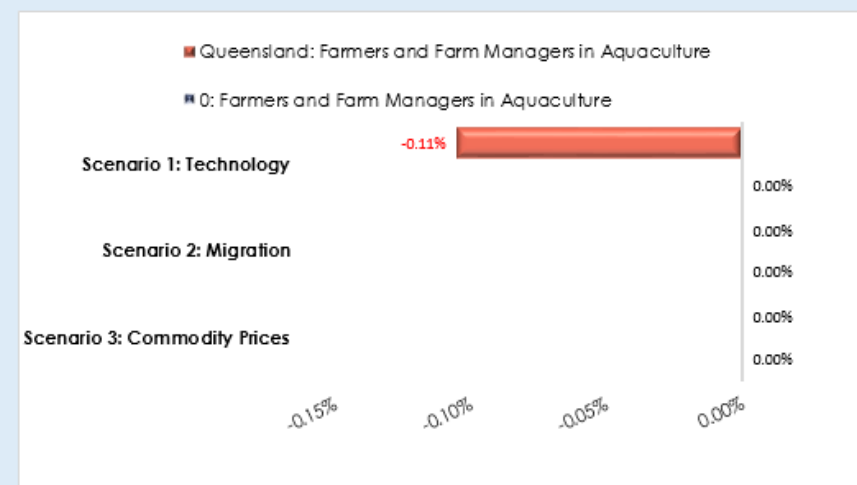
	2017	2022 Baseline	Scenario 1: Technology	Scenario 2: Migration	Scenario 3: Commodity Prices
Farmers and Farm Managers in Aquaculture	456	946	945	946	946
Total Farmers and Farm Managers employed in Queensland	22,570	25,791	25,815	25,815	26,524
Total employment in Aquaculture	1,216	2,361	2,359	2,362	2,367
Total employment for Queensland	2,373,023	2,562,671	2,563,317	2,594,613	2,553,245

## SCENARIO IMPACTS


### Change in Employment Numbers compared with 2022 Projection:


	Scenario 1: Technology	Scenario 2: Migration	Scenario 3: Commodity Prices
Farmers and Farm Managers in Aquaculture	-1	0	0
Total Farmers and Farm Managers employed in Queensland	24	24	733
Total employment in Aquaculture	-2	1	6
Total employment for Queensland	646	31,942	-9,426

### Changes in Growth (%) compared to 2022 Projection:



# Data tools: Occupations






### Anticipating Future Skills report

Download the Anticipating Future Skills: Jobs growth and alternative futures for Queensland to 2022 report.


[DOWNLOAD THE REPORT \(2.25MB\) →](#)



### Additional statewide data

View additional statewide charts.


[READ MORE →](#)



### Regions

View detailed employment projections for 15 regional areas across Queensland.


[READ MORE →](#)



### Industries

View detailed employment projections by ANZSIC industry.


[READ MORE →](#)



### Occupations

View detailed employment projections by ANZSCO occupation.

[READ MORE →](#)



### Qualifications

View the key findings for both Field of Education and Level of Education.

[READ MORE →](#)

# Anticipating Future Skills: Queensland

## Industry Projections by Occupation

Occupation: 11 - Chief Executives, General Managers and Legislators

Select from drop down list:

Industry: All Industries

Note: Projections are indicative and not definitive of future employment growth

In this tool, the occupations of employed people are broken down to the Sub-Major Group (4 digit codes) of the ANZSCO classification system, while industries of employment are broken down to the Group level (1 digit codes) of the ANZSIC classification system, as used by the Australian Bureau of Statistics. Regions are at the Statistical Area 4 level.



## PROJECTED EMPLOYMENT NUMBERS

### Occupation and Industry in Selected Regions:

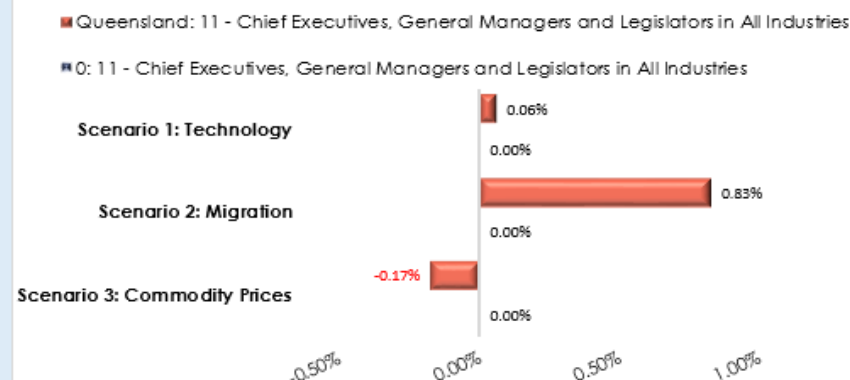
	2017	2022 Baseline	Scenario 1: Technology	Scenario 2: Migration	Scenario 3: Commodity Prices
11 - Chief Executives, General Managers and Legislators in All Industries	24,764	26,964	26,980	27,187	26,917
Total Chief Executives, General Managers and Legislators employed in Queensland	24,764	26,964	26,980	27,187	26,917
Total employment in All Industries	2,373,023	2,562,671	2,563,317	2,594,613	2,553,245
Total employment for Queensland	2,373,023	2,562,671	2,563,317	2,594,613	2,553,245

## SCENARIO IMPACTS

### Change in Employment Numbers compared with 2022 Projection:

	Scenario 1: Technology	Scenario 2: Migration	Scenario 3: Commodity Prices
11 - Chief Executives, General Managers and Legislators in All Industries	16	223	-47
Total Chief Executives, General Managers and Legislators employed in Queensland	16	223	-47
Total employment in All Industries	646	31,942	-9,426
Total employment for Queensland	646	31,942	-9,426

### Changes in Growth (%) compared to 2022 Projection:



# Qualifications



## Anticipating Future Skills report

Download the Anticipating Future Skills: Jobs growth and alternative futures for Queensland to 2022 report.

[DOWNLOAD THE REPORT \(2.25MB\) →](#)



## Additional statewide data

View additional statewide charts.

[READ MORE →](#)



## Regions

View detailed employment projections for 15 regional areas across Queensland.

[READ MORE →](#)



## Industries

View detailed employment projections by ANZSIC industry.

[READ MORE →](#)



## Occupations

View detailed employment projections by ANZSCO occupation.

[READ MORE →](#)



## Qualifications

View the key findings for both Field of Education and Level of Education.

[READ MORE →](#)

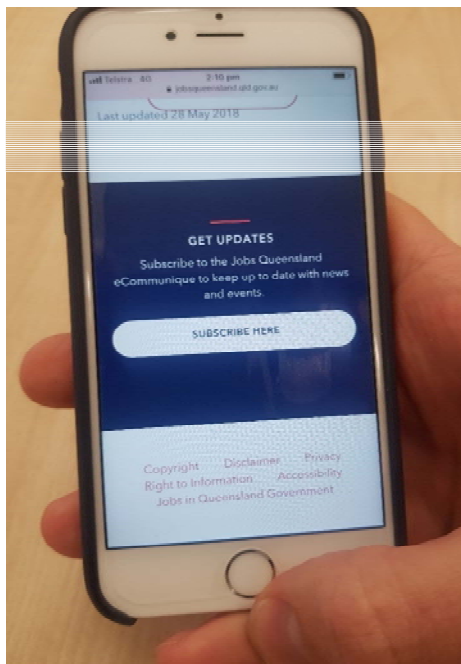
# Staying connected

Visit our  
website



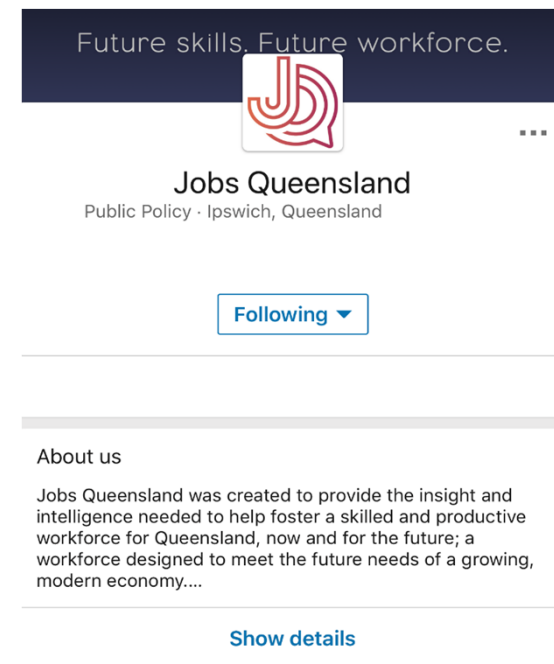
[jobsqueensland.qld.gov.au/future-of-work](http://jobsqueensland.qld.gov.au/future-of-work)

Subscribe to our  
e-Communiqué





[jobsqueensland.qld.gov.au/resources/jobs-queensland-e-communiques](http://jobsqueensland.qld.gov.au/resources/jobs-queensland-e-communiques)

Follow us on  
LinkedIn



[linkedin.com/company/jobsqueensland](https://linkedin.com/company/jobsqueensland)





- Future skills.  
Future workforce.

[www.jobsqueensland.qld.gov.au](http://www.jobsqueensland.qld.gov.au)