Economic Impact Assessment and Energy Asset Transition

Key Challenges and Opportunities

A Case Study Approach

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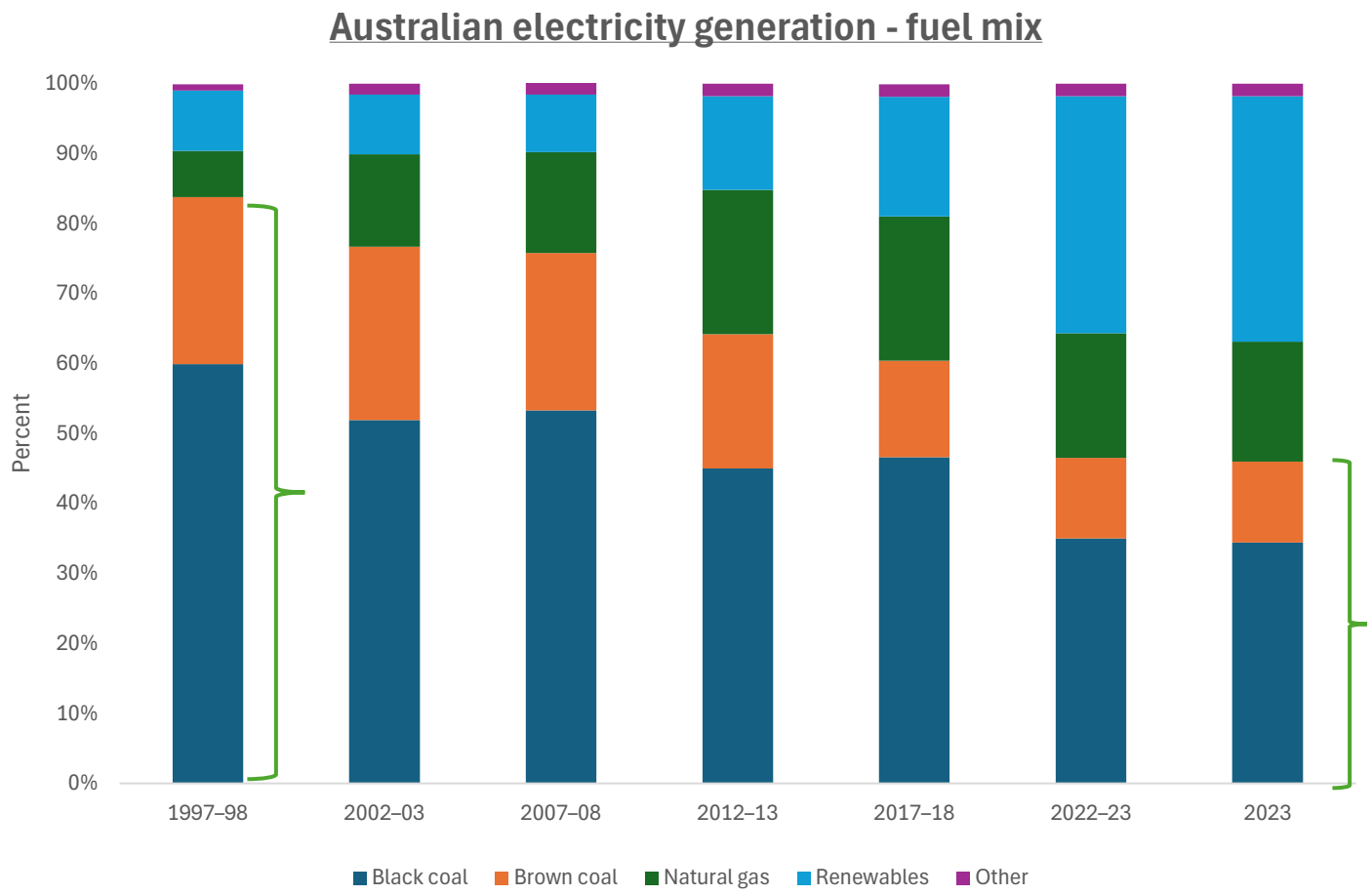
Bringing ideas to life

Overview

- Introduction
- Where are the assets located?
- What is the strategic importance of the assets in the region?
- What are the key challenges and economic impact ?
- What are the key opportunities and economics impact?
- Lessons learnt
- Concluding comments

Introduction

The case study is about Liddell and Bayswater power plants – coal fired generation



Electricity generation from coal fired power plants in Australia has reduced from 84% in 1997-98 to 46% in 2022-23.

The *energy* is transitioning from one dominated by coal fired generation to one of diverse and distributed energy resources

Over 45 GW of new Variable Renewable Generation needed to replace coal fired generation and meet energy needs by 2040

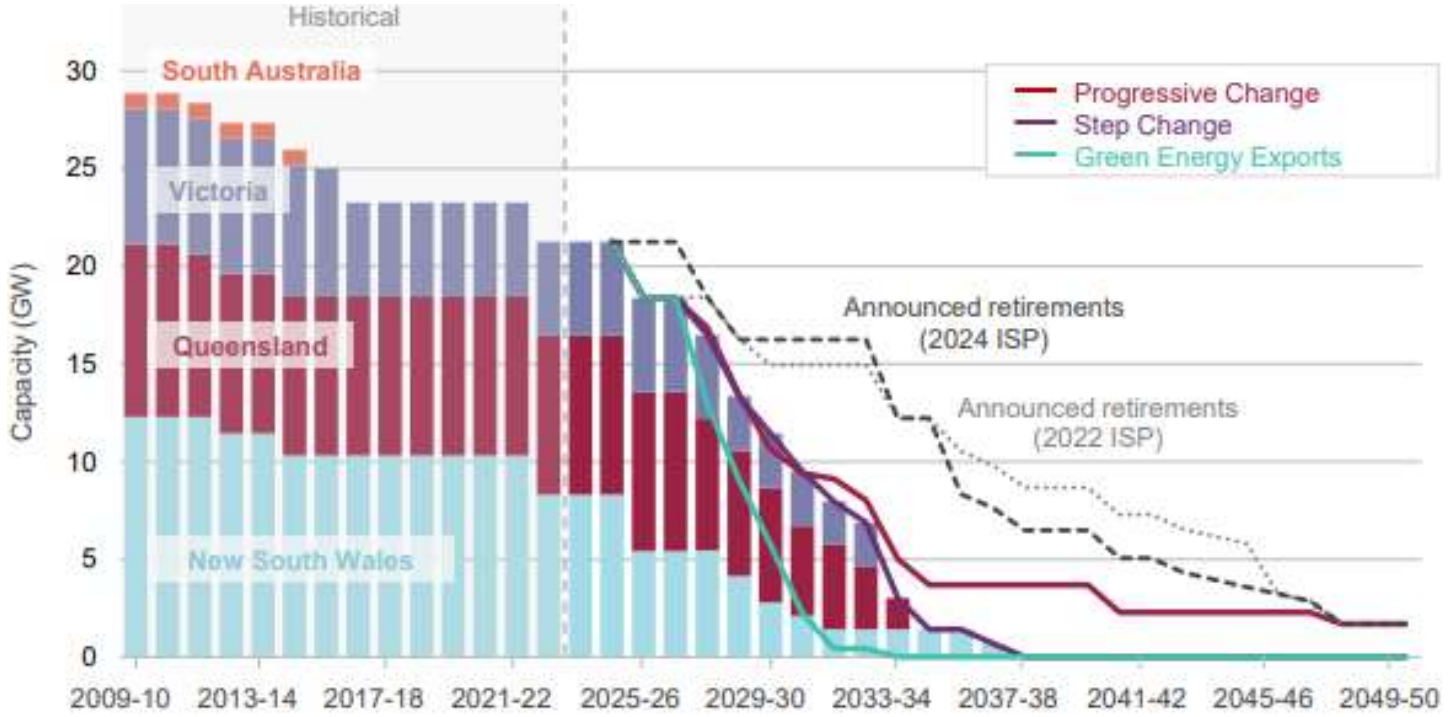
Source: Australian electricity generation - fuel mix | energy.gov.au and AEMO Integrated System Plan 2024

Introduction

Over time as the coal fired power plants will be closing down more of such asset transitions will happen over the coming decades

Average age of coal fired plant is just over 30 years

Power Station	State/Territory	Capacity (MW)	Primary Fuel
Loy Yang A and B	Victoria	3,315	Brown coal
Yallourn W	Victoria	1,450	Brown coal
Eraring	New South Wales	2,880	Black coal
Bayswater	New South Wales	2,640	Black coal
Mount Piper	New South Wales	1,320	Black coal
Vales Point B	New South Wales	1,320	Black coal
Gladstone	Queensland	1,680	Black coal
Callide B and C	Queensland	1,540	Black coal
Stanwell	Queensland	1,460	Black coal
Tarong	Queensland	1,400	Black coal
Tarong North	Queensland	450	Black coal
Kogan Creek	Queensland	744	Black coal
Milmerran	Queensland	852	Black coal
Swanbank	Queensland	385	Black coal
Muja	Western Australia	854	Black coal
Collie	Western Australia	340	Black coal
Bluewaters	Western Australia	416	Black coal
Worsley Refinery	Western Australia	114	Black coal



By 2034-35 most of the coal power will recede…

Source: Coal-Fired Power Stations In Australia | Canstar Blue (accessed July 2025) and AEMO Integrated System Plan 2024

Introduction

Hazelwood power station: Closure of plant to leave hundreds jobless

Posted Thu 3 Nov 2016 at 12:14pm, updated Thu 3 Nov 2016 at 8:58pm

Only six months notice!

Closed by the end of March 2017

The Victorian Government says financial support will be made available for workers

Latrobe Valley workers face legacy of unstable work two years after Hazelwood closure

ABC Gippsland / By Jarrod Whittaker

Posted Sat 22 Jun 2019 at 10:41am, updated Sat 22 Jun 2019 at 11:12am

More than two years after the closure of the Hazelwood power station, the chance of a full-time job is limited in the region. (ABC News: Nicole Asher, File Photo)

The closure marked a significant shift in Victoria's energy landscape

Energy Minister vows to avoid repeat of 'disastrous' Hazelwood closure

In the State of Victoria

Source: The Sydney Morning Herald, 9 August 2019

Introduction

Latrobe Valley power station owners will have to give at least five years' notice if they want to close early as part of a mine licence extension deal with the state government. file photograph

- Latrobe Valley power station owners have agreed to give five year's notice of their intention to close as part of a deal with the state government to extend their mining licences.
- This announcement means there will be no repeat of the Hazelwood closure where the community was given just six months to prepare.
- In 2023, AGL signed an agreement with the Victorian Government to close the Loy Yang A power station by June 30, 2035. **The agreement was designed to give certainty to workers, the community, and the energy market**, helping support Victoria's shift to renewable energy.

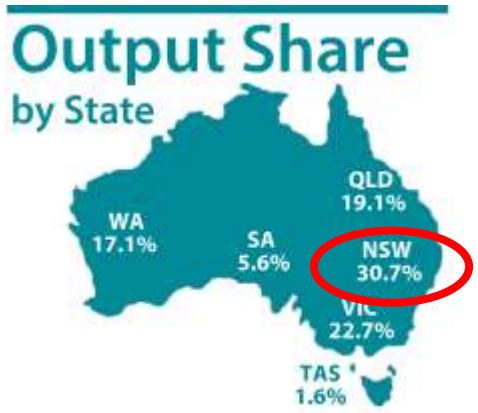
State Resources Minister Mr Pallas said the extensions would "support our energy security and provide certainty for workers and communities across Victoria".

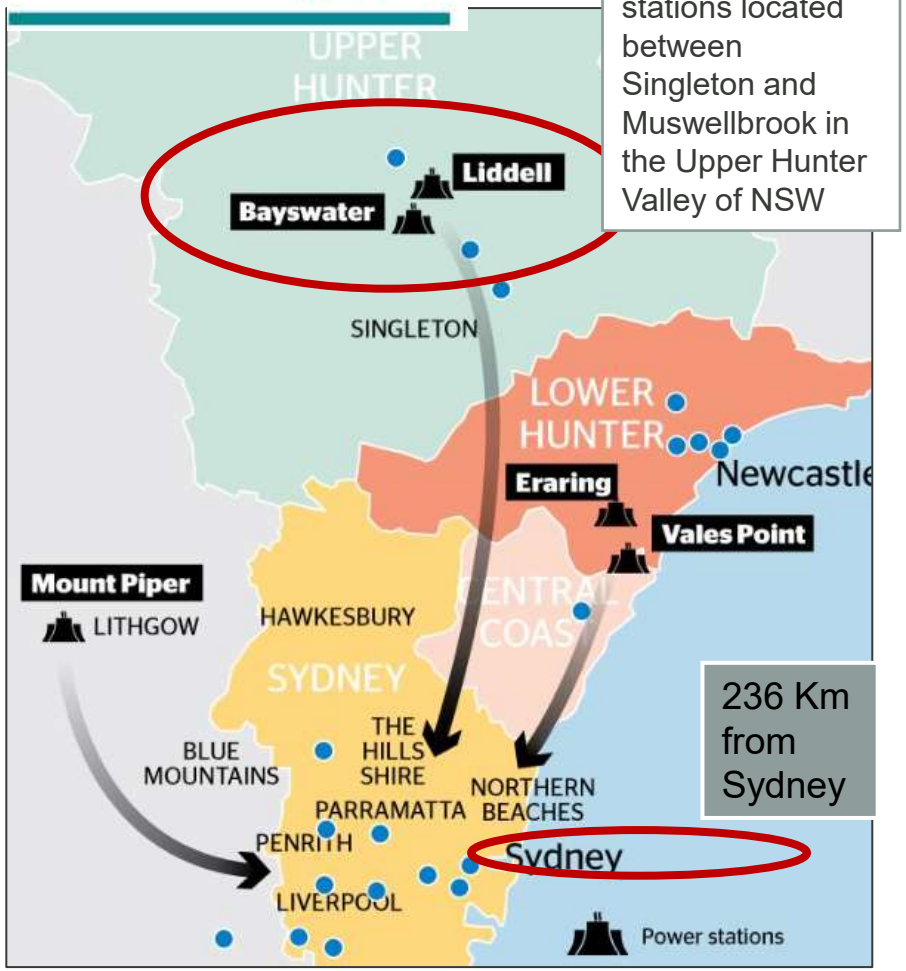
Source: Express News, 1 June 2018

Where are the asset located?

Liddell and Bayswater power plants: location

Case Study Approach





Liddell and Bayswater power stations located between Singleton and Muswellbrook in the Upper Hunter Valley of NSW

236 Km from Sydney

Liddell

- Commissioned between 1971- 1973
- Comprising of 4 x 500 MW units, with total capacity of 2000 MW
- Baseload coal fired power pant
- Major plant replacements and refurbishments during 1990s and 2000s
- Decommissioning - **closed in April 2023**

Bayswater Power Plant

- Commissioned between 1985-1986
- Comprising of 4 x 660 MW units, with total capacity of 2640 MW
- Baseload coal fired power pant
- Flexible coal handling plant
- Decommissioning in 2035

39 years old

AGL acquired Liddell and Bayswater power stations (previously known collectively as Macquarie Generation) from the NSW Government in September 2014.

Where are the assets located?

Hunter Region is a growing economy

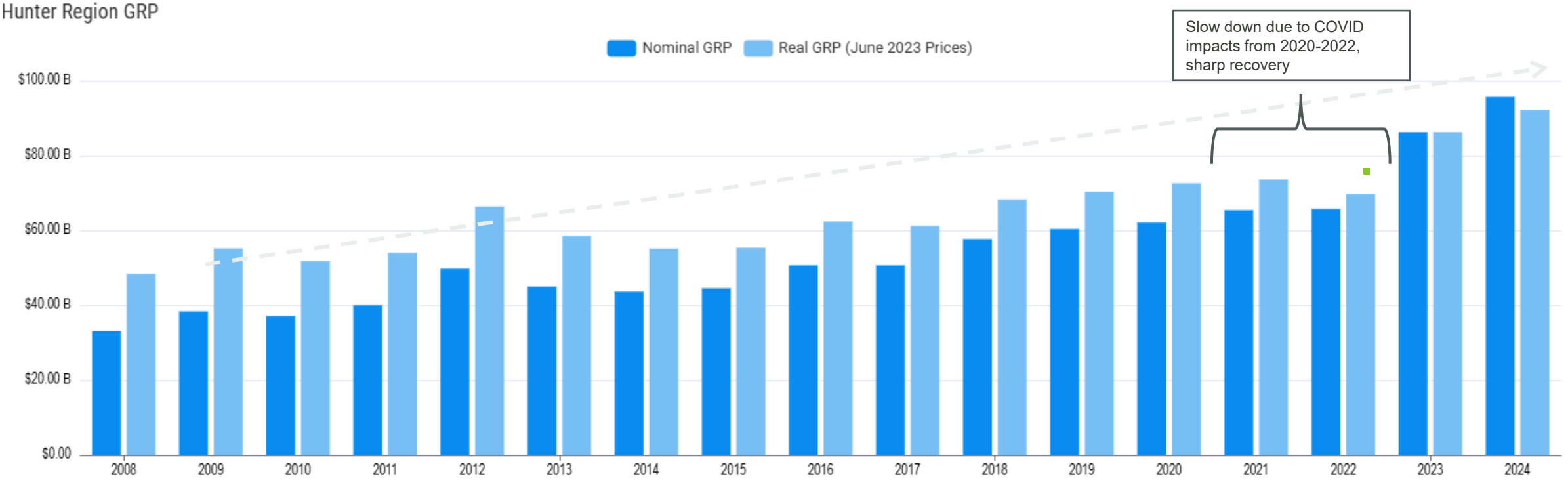
Increase of 35% real GRP over the last decade

Population

The Hunter region population is 810,491 in 2024

Hunter Region

Hunter Region GRP



Source: Hunter Region Economy, Jobs, and Business Insights | Gross Regional Product, Trends | REMPLAN, accessed July 2025

Where are the assets located?

Oldest wine making region in Australia

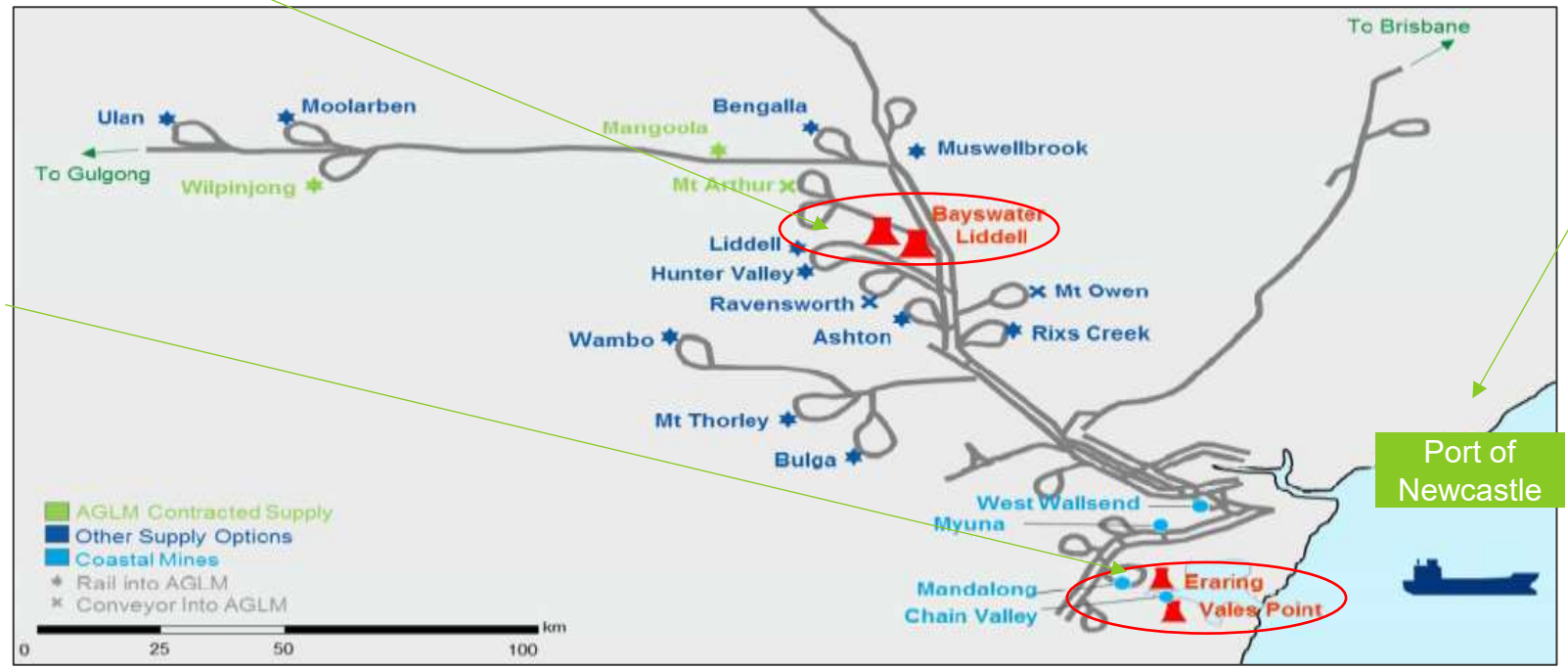
1 of 3 world's best thoroughbreds centre

Home to more than 40 Mines (thermal and soft coking coal)

Where are the assets located?

Direct connection to the coal supply network that allows the power stations to have access to multiple, low cost coal supply sources

Hunter region has well established coal supply infrastructure



Port of Newcastle

Famous for its coal, Newcastle is one of the largest coal exporting harbour in the world, exporting 150 million tonnes of coal in 2024*

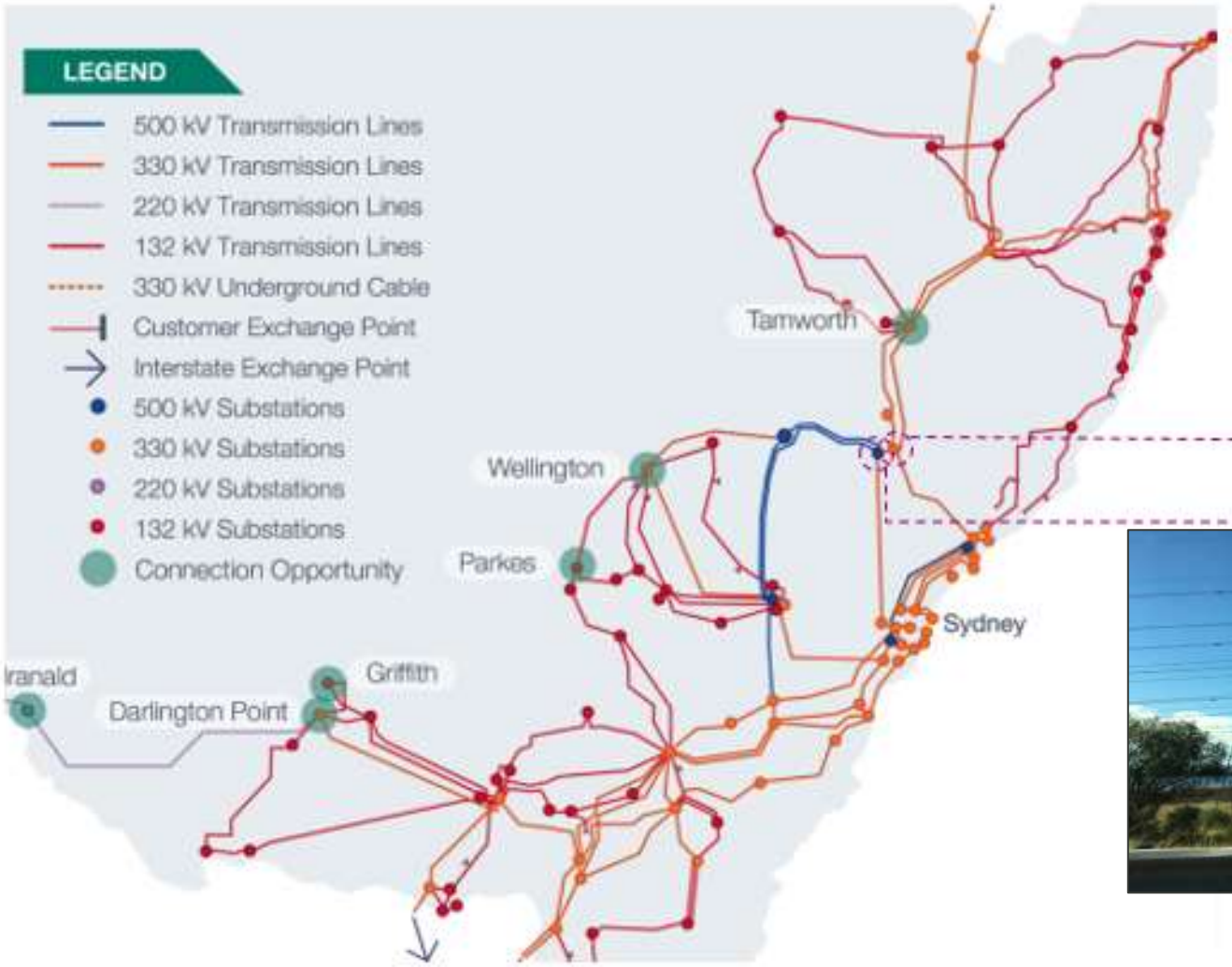
The large scale rail loops and coal unloaders supply coal from underground mines to the Liddell/Bayswater and other coal power stations.

*Source:https://pon.com.au/wp-content/uploads/2025/03/PON_Annual_Trade_Report_2024.pdf

Where are the assets located?

Major transmission lines network operate at voltages of 500kV and 330 kV, which is of high standard in NSW transmission network

Well connected energy transmission infrastructure



What is the strategic importance of the assets in the region?

Liddell and Bayswater power plants: Site

The site covers approximately 10,000 hectares

The northern side of the highway is Liddell Power Station (closed) and Lake Liddell

The New England Highway runs through the site, dividing the main part of the site into two.

The southern side of the highway contains the Bayswater Power Station

What is the strategic importance of the assets in the region?

Electricity production

- In 2022-23, electricity production from the coal power plants met significant (more than 30%) electricity needs of New South Wales.
- Together providing power to more than 3 million Australian family homes!

Employment and training

One of the largest employers of apprentices in the Hunter region

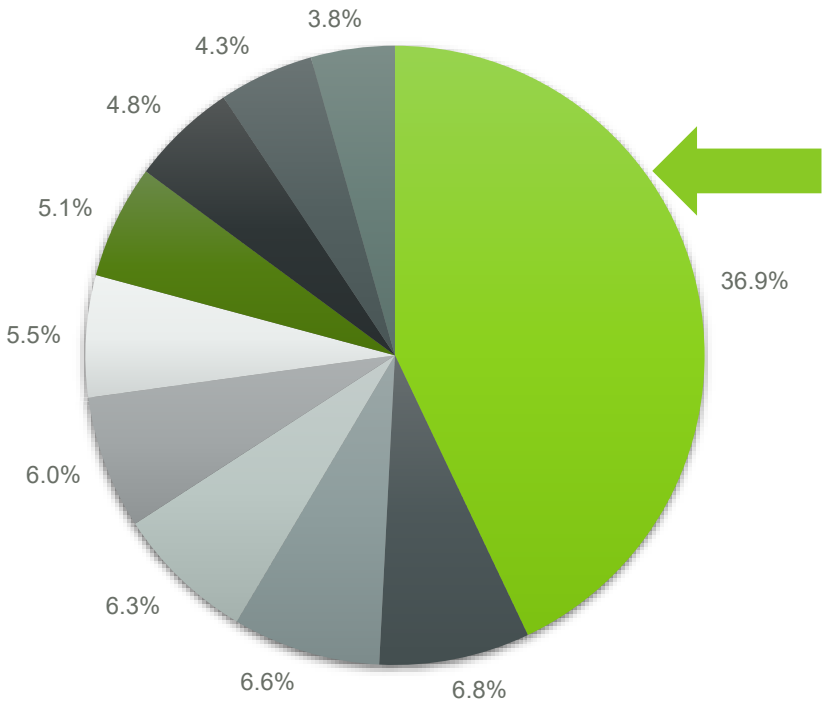
They have provided secure employment for locals for more than 4 decades, employing more than 600 people

Source AGL Macquarie website

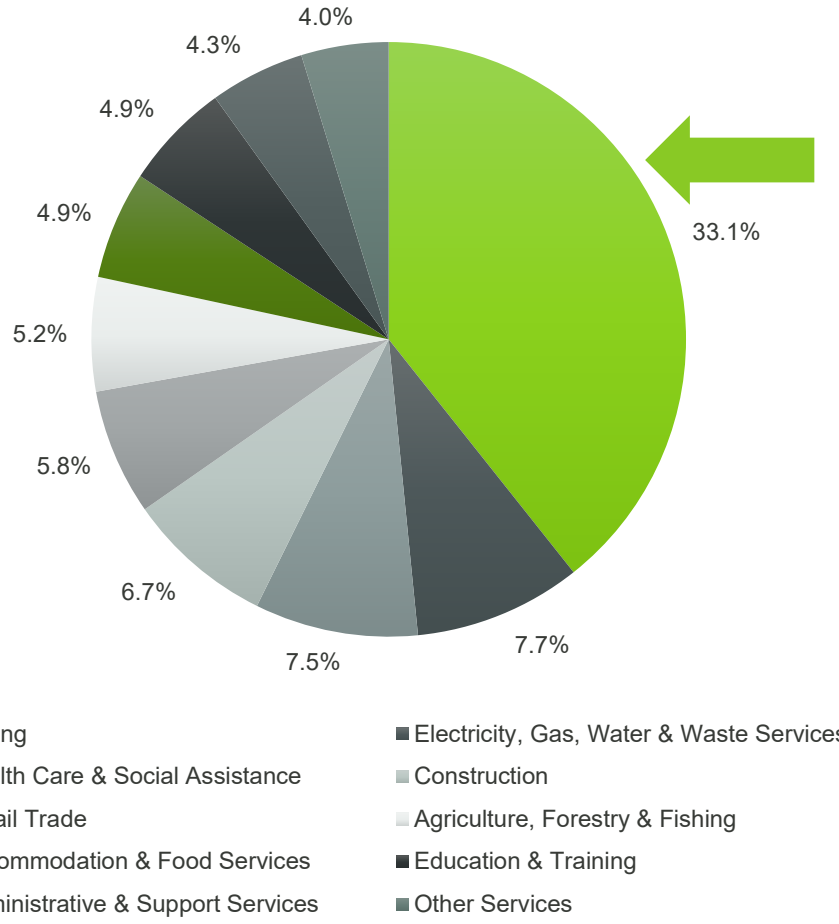
Economic Impact

What is the strategic importance of the assets in the region?

Singleton employment by industry sector

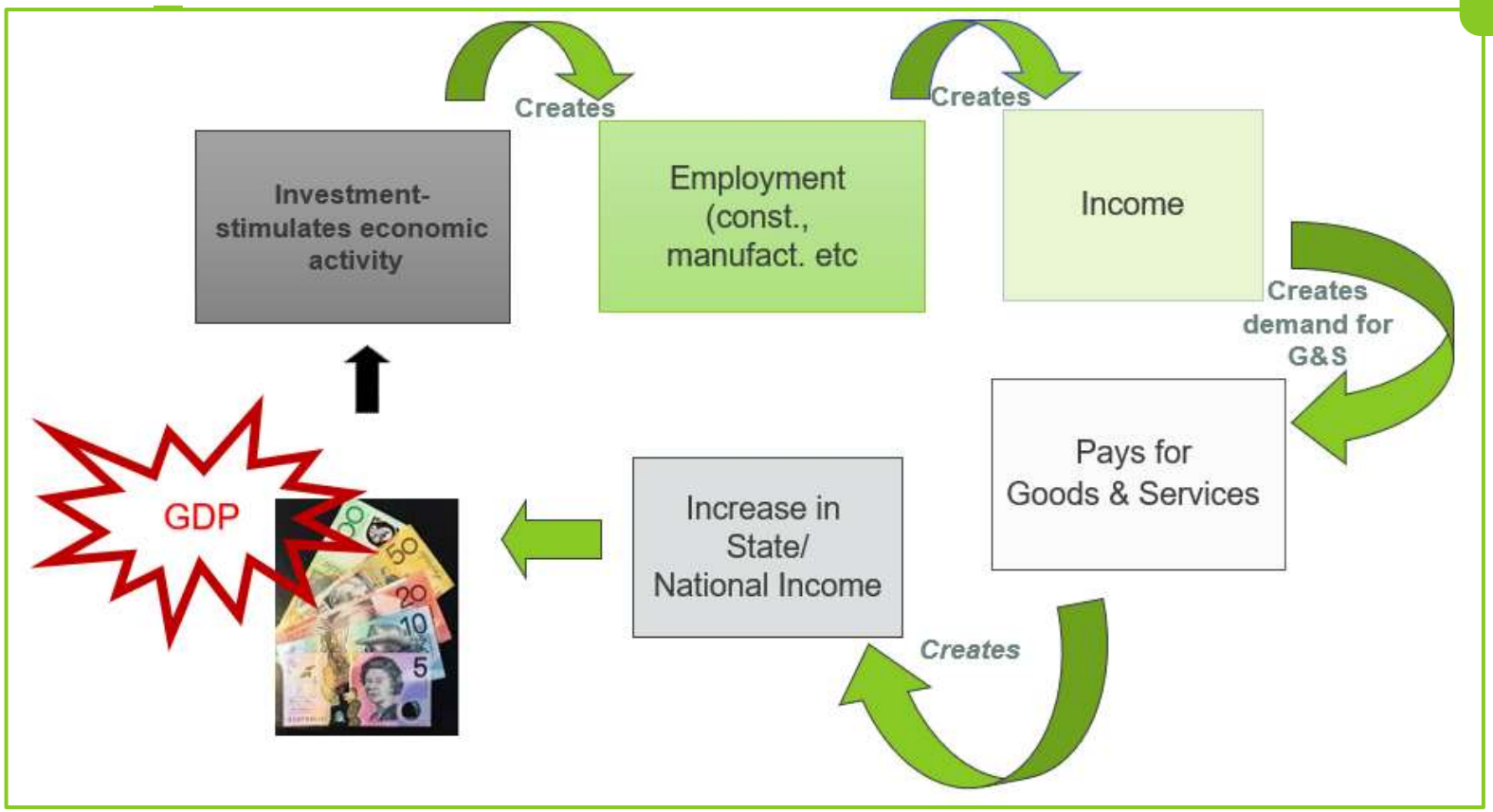


Muswellbrook employment by industry sector



What is the strategic importance of the assets in the region?

Investment and jobs in the region have had a positive economic impact



Economic multiplier

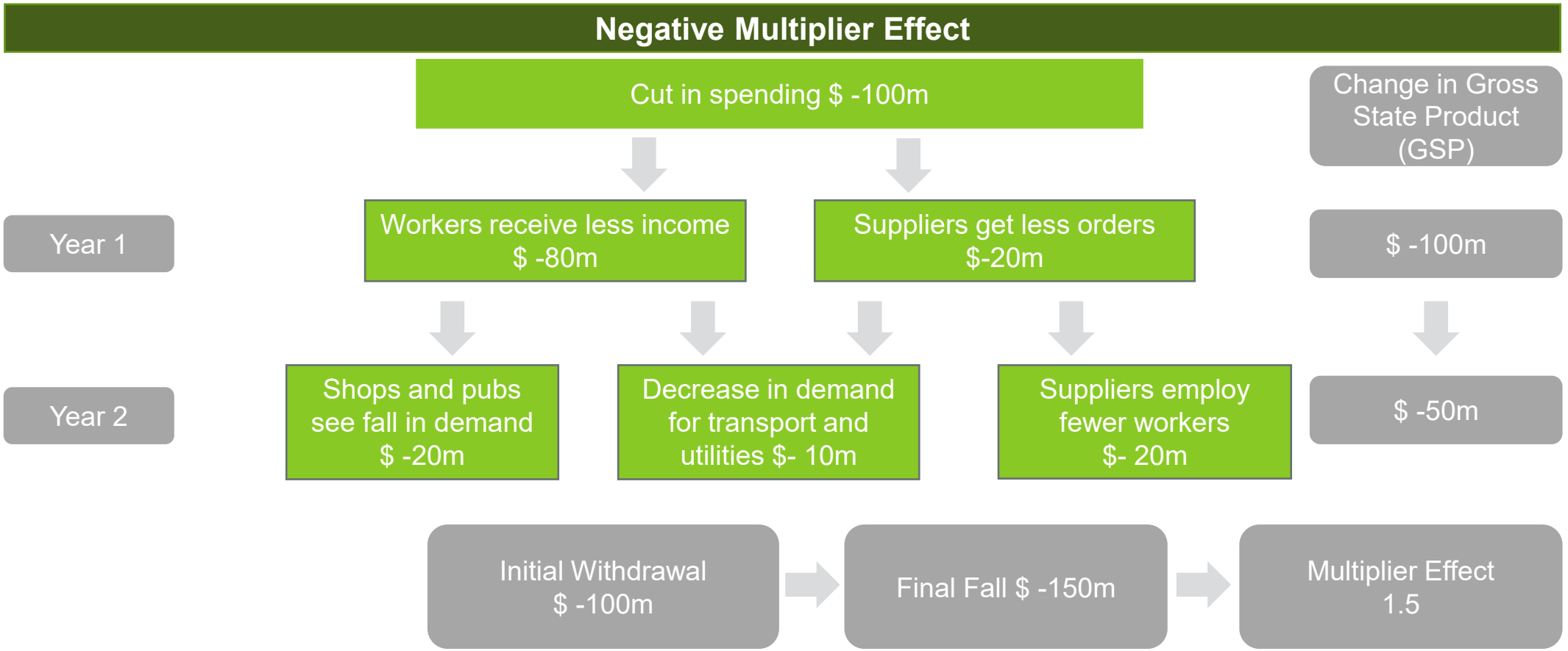
The investment injection in the economy through the economic multiplier creates employment and income

direct and indirect effect of the investment

Challenges and Economic Impact

Mining is largest employment sector in Muswellbrook and Singleton

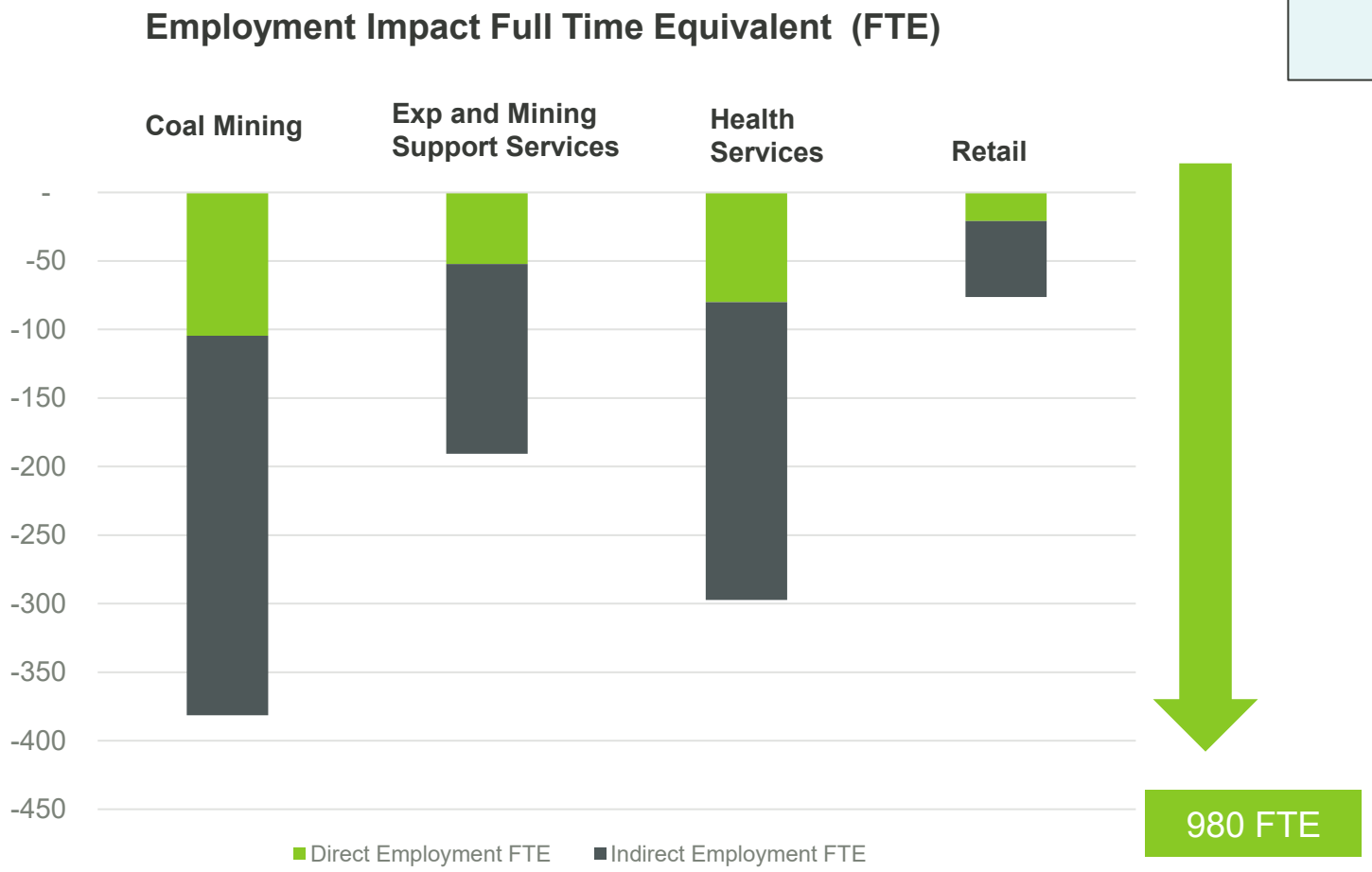
Scenario: What happens when the jobs are lost? and that leads to AUD 100 million cut in spending



Challenges and Economic Impact

Scenario: $100 million cut in spending direct and indirect impact on related industries

Negative Economic Multiplier



The total jobs loss impact has been more than just the 600 jobs loses!

Source: Aurecon I-O Model using NSW employment multipliers

How to make the transition of the asset less painful?

Can near term negative economic impact can be less severe and long term positive economic impact more than compensate for the economic loss?

Opportunities/Initiatives and economic impact

Opportunities and economic impact

What is Liddell innovation project ?

What are the opportunities?

Liddell Innovation Project - Green Energy Hub

Land use opportunities – utilising the 10,000 hectares site for innovation and diversification opportunities

Investment

Sustainable investment to create growth and jobs

Innovation

Seek out innovative utilisation of the resources and assets of Liddell (and surrounding area)

Diversification

Identify opportunities for diversification and development

Stakeholder engagement

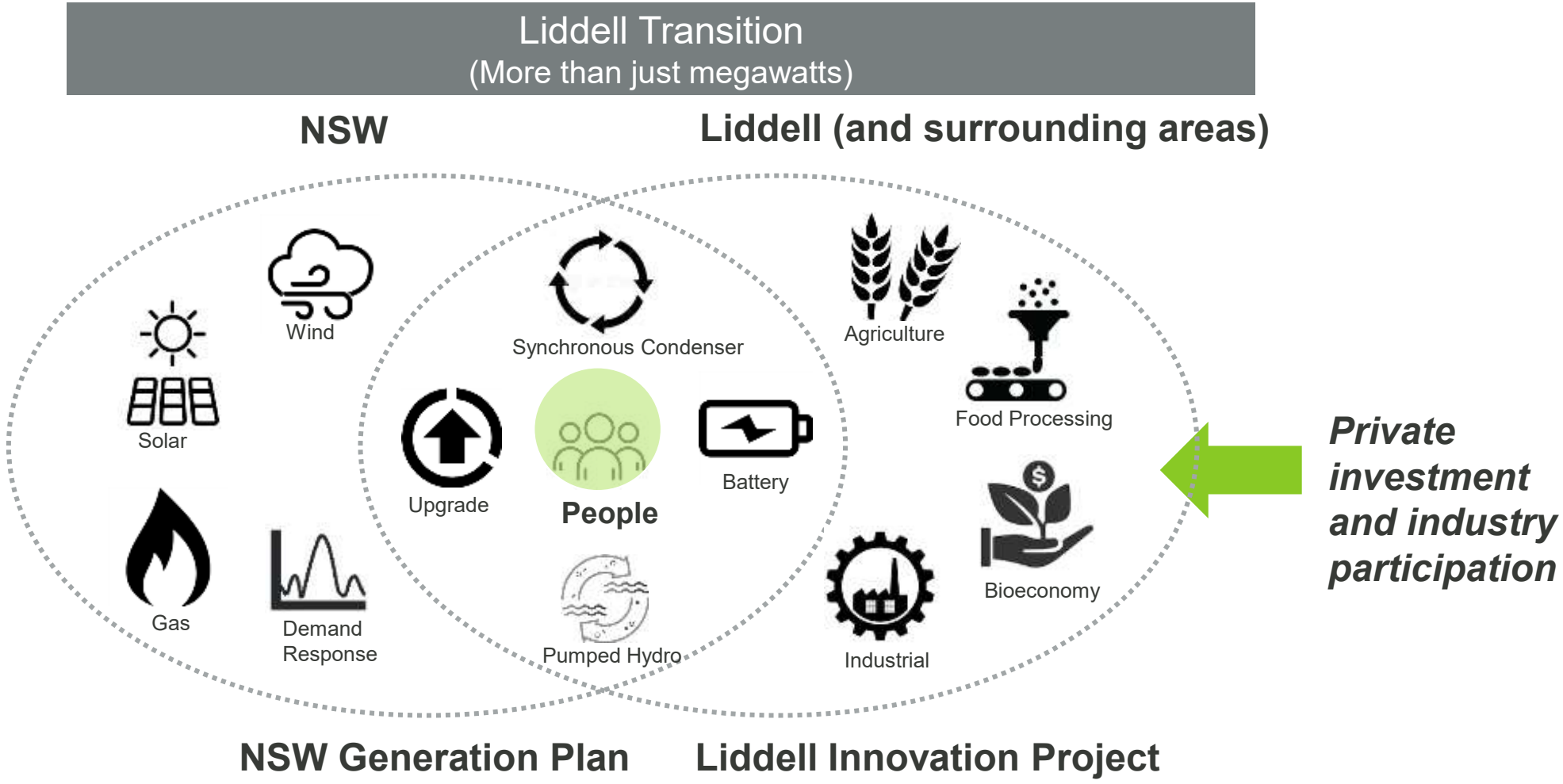
Employees

Industry and community

Government Support (4 February 2025)

Opportunities and economic impact

What is Liddell innovation project? and what are the opportunities



Opportunities and economic impact

NSW Government Initiative

As other coal power plants and coal mines transition in the coming decades

Newcastle Hunter Innovation Project

HUNTER INNOVATION AND SCIENCE HUB

Hunter Transmission Project: Central-West Orana and New England Renewable Energy Zones – 500 KV transmission lines connecting Bayswater and Eraring .

Hunter-Central Coast Renewable Energy Zone (REZ)

The NSW Government's 2025-26 Budget outlines a series of changes aimed at encouragin investment and innovation, with new measures likely to benefit Newcastle and the Hunter in areas including manufacturing, clean energy and project approvals.

Lessons Leant

AGL gave about 6 years and communicate in advance about the asset closure

Joined Hunter Energy Transition Alliance to plan

Broader community collaboration

Collaboration with Industry

Innovation! **Investment!** **Diversification!**

Transition is not done overnight but needs a careful plan so that near term negative economic impact can be less and long term positive economic impact can more than compensate for the economic loss

Concluding Comments

- Asset transition is not only about the asset but about people, leading to both social and economic impact
- A long term strategic plan is imperative with enough notice period about the asset closure
- The plan should include alternative solutions that should contribute to the future economic growth
- Close collaboration with the community
- Government collaboration and support is important
- Private sector participation is required
- ***Community consultation, support and transparency is a must for the successful execution of the plan***

Concluding Comments

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