

Agenda

01 Official address

The Hon. Mick de Brenni MP

02 State of the Network

Paul Simshauser

03 TAPR

Stewart Bell

04 Q&A

05 Morning tea

06 Breakout sessions

07 Summary

08 Closing address

Stream 2: Navigating the industry's pathway to electrification and decarbonisation

Jacqui Bridge

Executive General Manager Energy Futures, Powerlink

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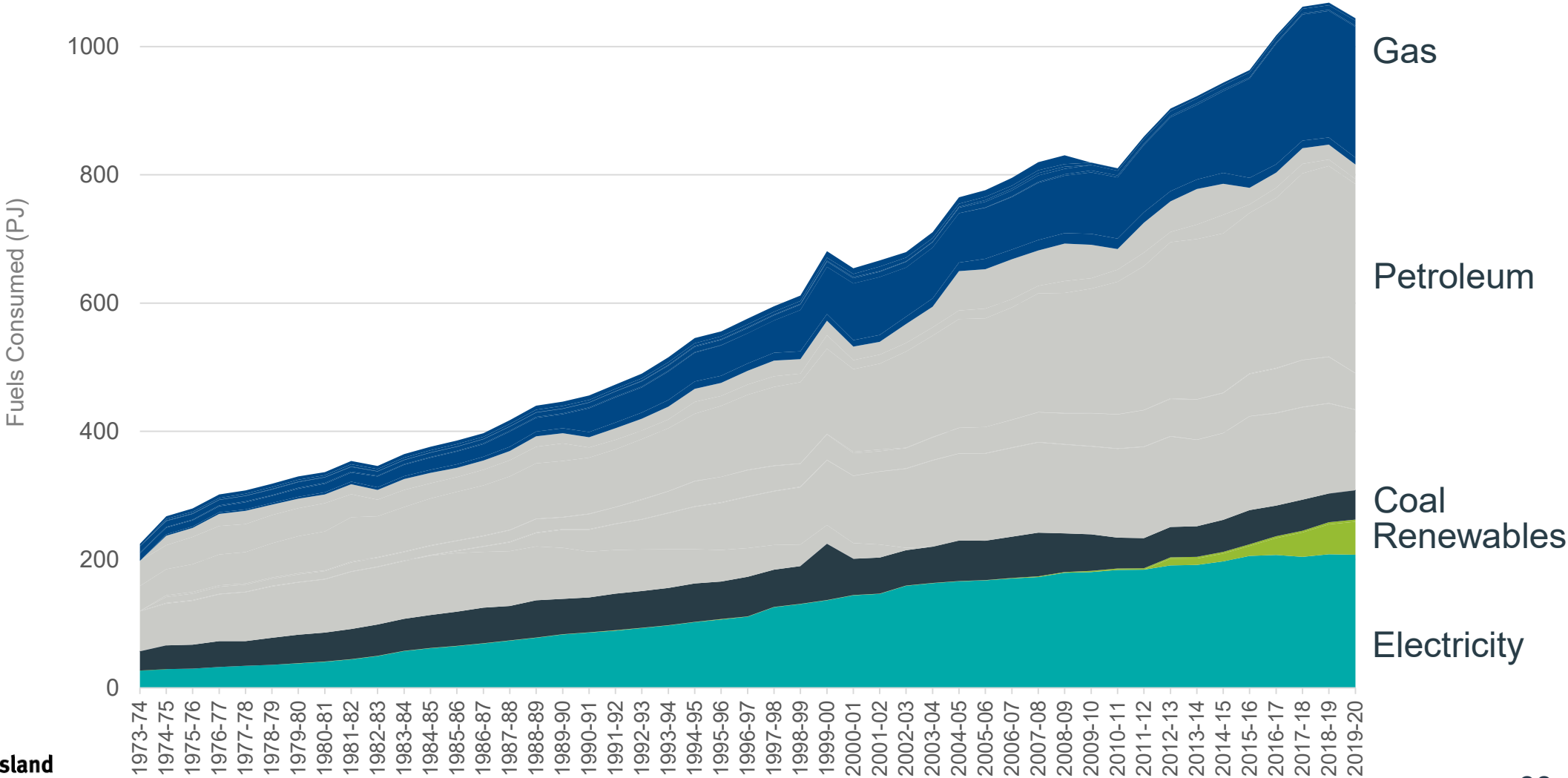
David Shankey

Deputy Director-General, Energy

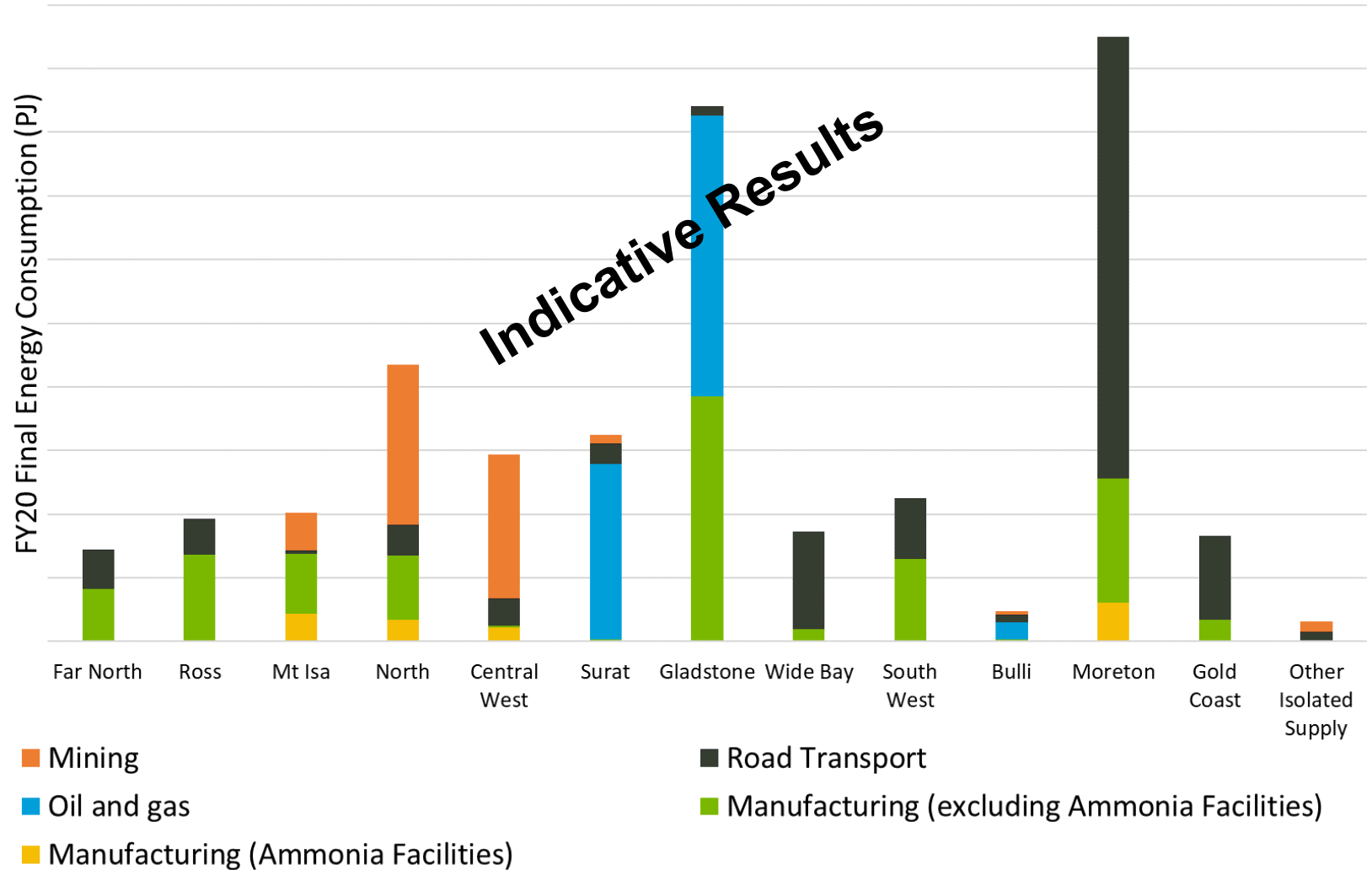
Overview

- Electrification of existing demand
 - Existing load to be electrified
 - Future industry to be supplied
 - Load Flexibility requirements
- Queensland Renewables
- Queensland Energy Plan
 - Outline and overview

Queensland historical fuel consumption



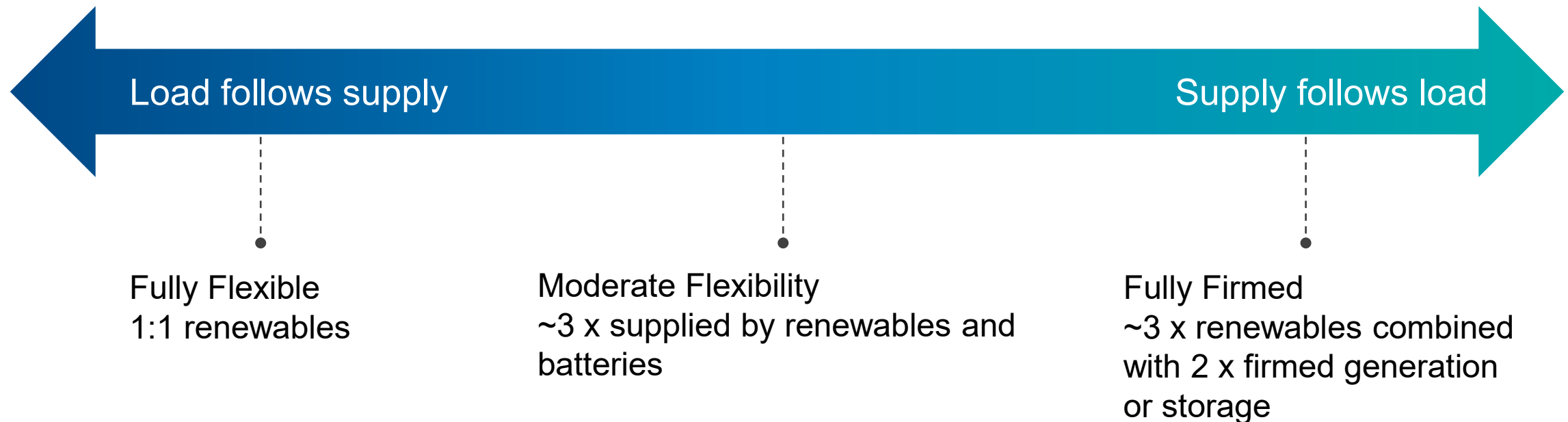
Regional and industry comparison



- Queensland regions have distinct energy consumption characteristics that result in different implications for the transmission network when electrified
- 85% of current consumption comes from Mining, Road Transport, Oil and Gas and Manufacturing.

Load flexibility requirements

- Low cost, high capacity factor electricity supply requires firming provided by storage, interconnection and renewables overbuild to be implemented as inexpensively as possible.
- The impact of additional load in the power system depends on the load's location, size and flexibility.



Queensland renewables



3.5 GW
4 GW rooftop



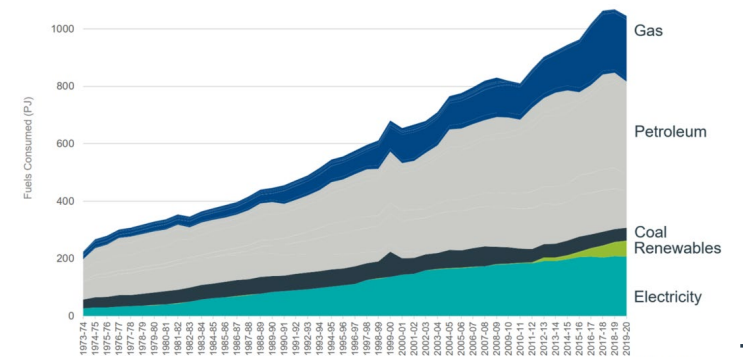
1GW



1GW



100MW



Source: Australian Energy Statistics 2021

Summary

- Significant **opportunities** for future energy and industry within Queensland
- **Flexibility** of the future load will determine the capacity of new generation and firming required
- Characteristics of new load will be different and **specific to regions**.
- Queensland has high renewable energy potential, the **mix of solar, wind and firming** must be suitable for supplying load
- Optimising Queensland's **wind and deep energy storage** opportunities is critical
- **Electrification** of other energy loads will increase demand for electricity
- **Future demand** will grow significantly to accommodate new industries
- Coordination of the transformation with emerging industries is critical to ensure sustainable, **reliable and low cost electricity**

Queensland Energy Plan

Queensland Energy Jobs Forum


TOWNSVILLE 10 JUNE 2021

\$2 Billion Queensland Renewable Energy and Hydrogen Jobs Fund

10-year energy plan for Queensland




Queensland Government commitments

 50% renewable energy by 2030

30% emissions reduction on
2005 levels by 2030



 Net zero emissions by 2050

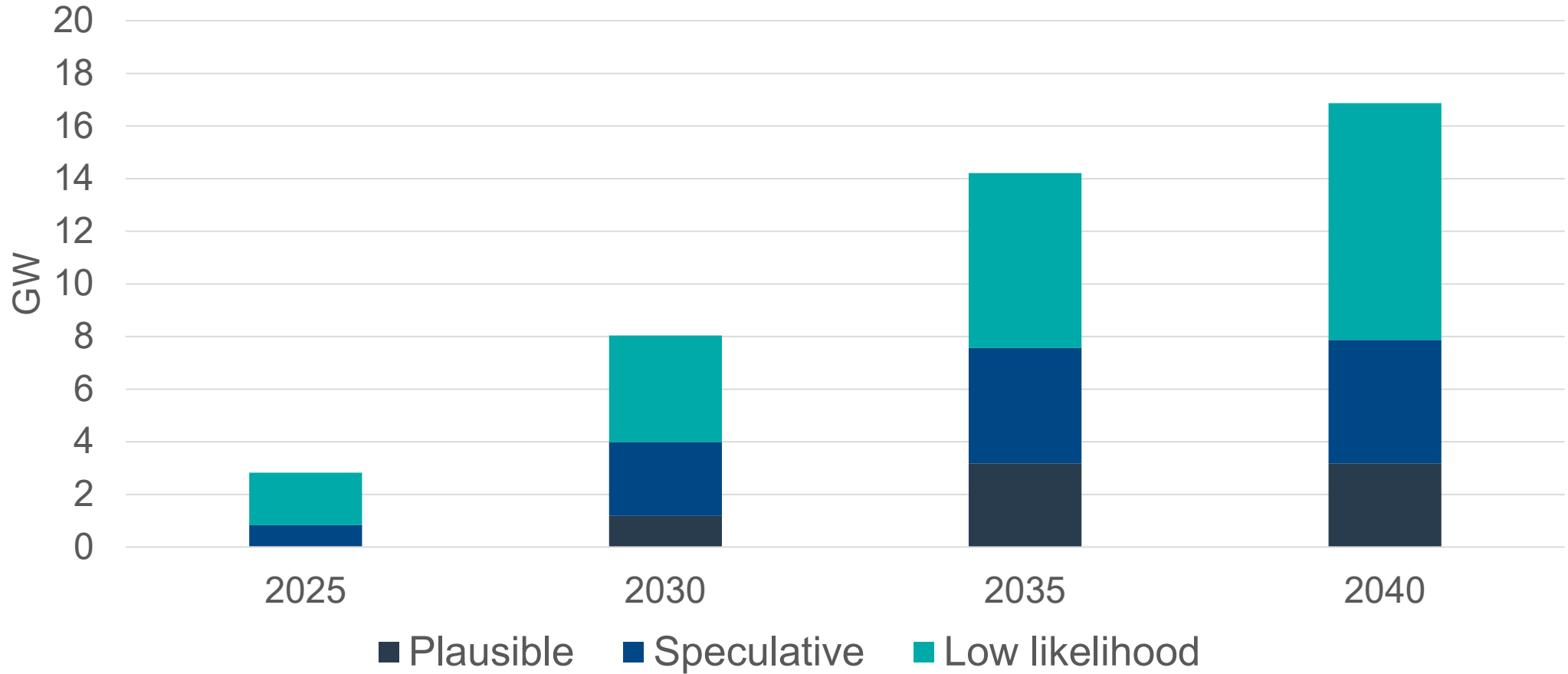
Queensland strengths

- Strong economy
- Public ownership
- Renewable resources
- Network capacity



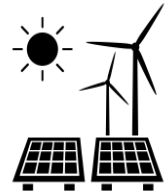


Managing uncertainty in the outlook

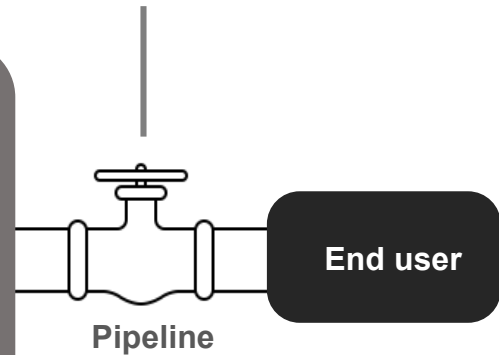
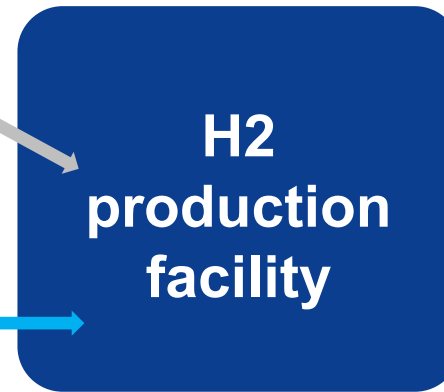


Commercial hydrogen pathways emerging

Social licence and adequacy of resource to meet demand



Behind the meter, dedicated infrastructure or grid-connected



How much electricity transmission vs. how much hydrogen pipeline

Significant commitments already underway

\$2 Billion
Fund

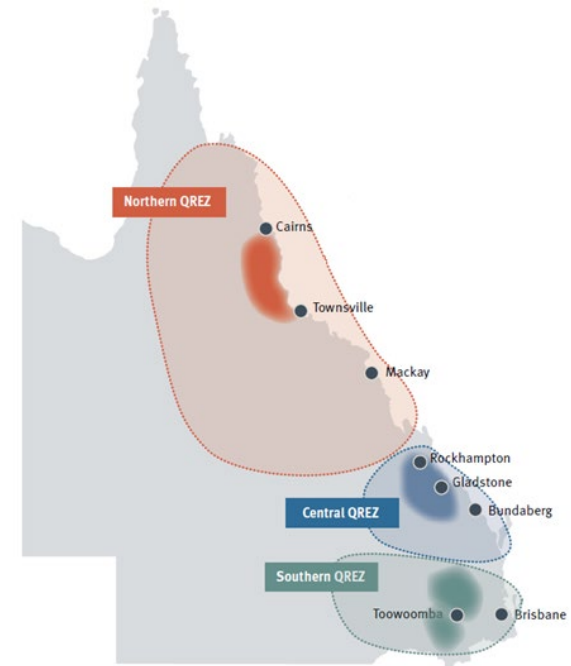
QUEENSLAND RENEWABLE ENERGY AND HYDROGEN JOBS FUND

The government has established a Queensland Renewable Energy and Hydrogen Jobs Fund with up to \$2 billion for government investments in partnership with private sector.

Borumba
Pumped Hydro
Energy Storage

The Queensland Government has committed \$22 million for a detailed design and cost analysis of the project to support future decisions.

QREZ
developments



Key challenges and opportunities to consider

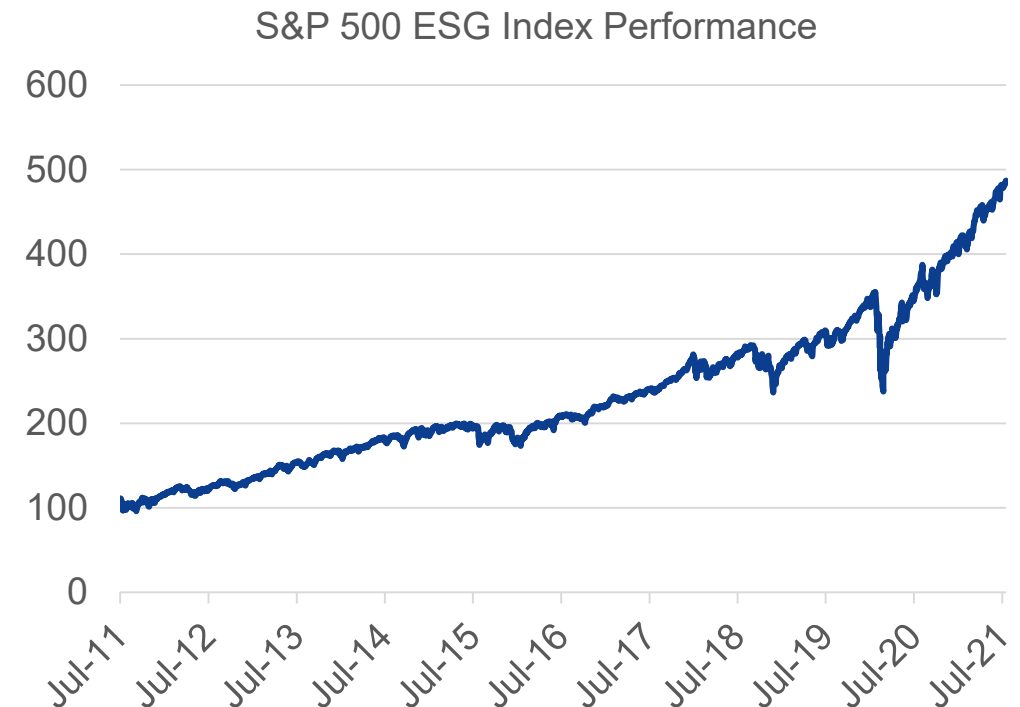
Challenges

- Technical challenges for integrating higher levels of renewable energy
- Disruption as the generation mix in Qld changes
- Keeping downward pressure on prices essential for globally competitive energy

Opportunities

- Attract new industries, creating more jobs
- Investment in the renewables sector creates a pipeline of jobs to regional Queensland
- Support existing industries to remain competitive as they decarbonise

ESG (Environmental, Social and Governance) investment significantly ramping up over the last 10 years



Questions

Workshop Questions

- Stream 2
Navigating the industry's pathway to electrification and decarbonisation

- How should Powerlink deal with uncertainty of the pace and scale of change when planning its network?
- What are the key elements that should be included in the Queensland Energy Plan?
- What is the role of Government in the energy transformation?