



10:00am Welcome and introduction

10:05am Energy, demand and generation outlook

**TAPR** highlights

10:45am Questions

11:00am Close

## Introduction



### Powerlink's network





## Forecasting methodology



# Transmission customer forecasts

Forecasts from customers (other than Energex and Ergon Energy) that are connected to our network

# Econometric regressions

Forecasts developed for Energex and Ergon Energy based on relationships between past usage patterns and economic variables

#### New technologies

The impact of new technologies e.g. small-scale solar PV, battery storage, electric vehicles, energy efficiency improvements and smart meters





Powerlink's demand and energy forecasts

## Energy forecast

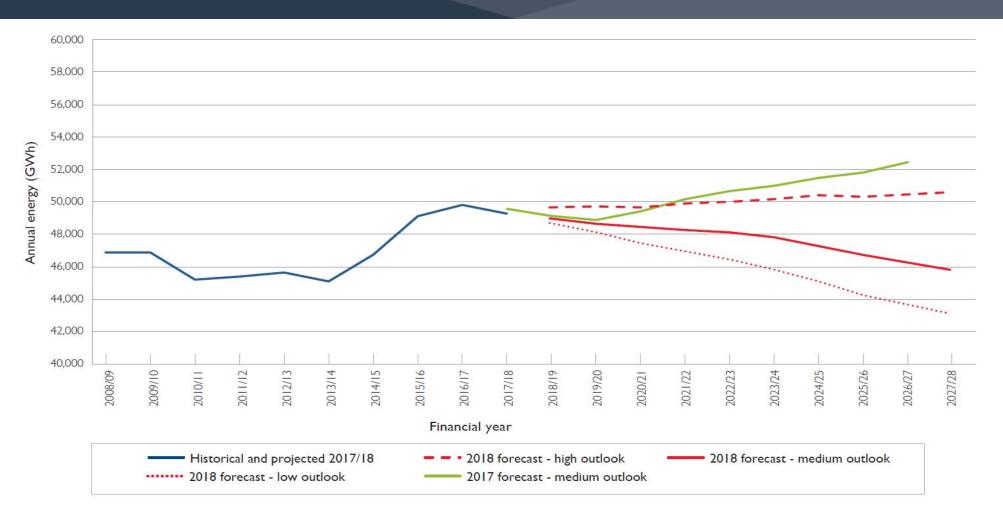


Queensland average forecast growth per annum over 10 years

	2017 Forecast	2018 Forecast
Energy	0.4%	-0.7%

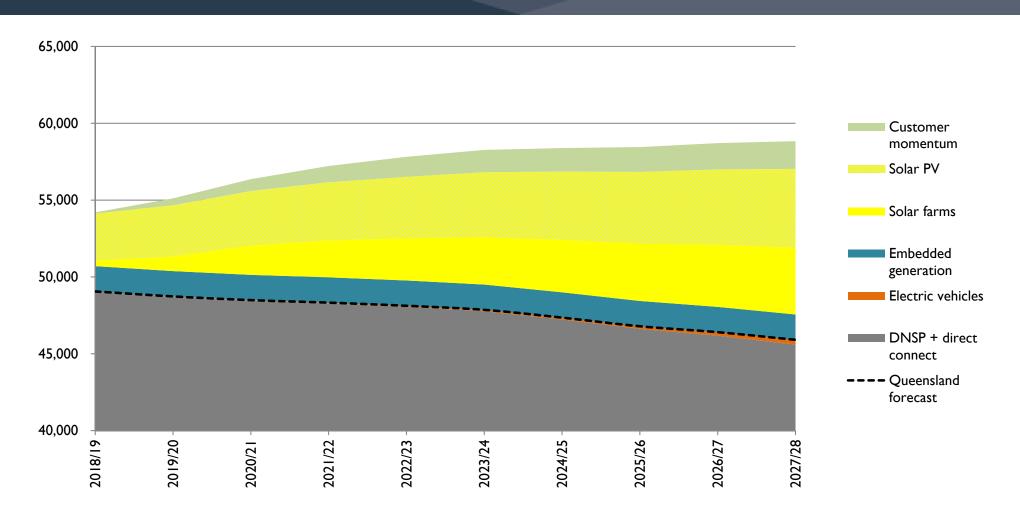
### Historical and forecast transmission delivered energy





## Energy forecast with new technology adjustments





### Queensland average forecast growth per annum over 10 years Power

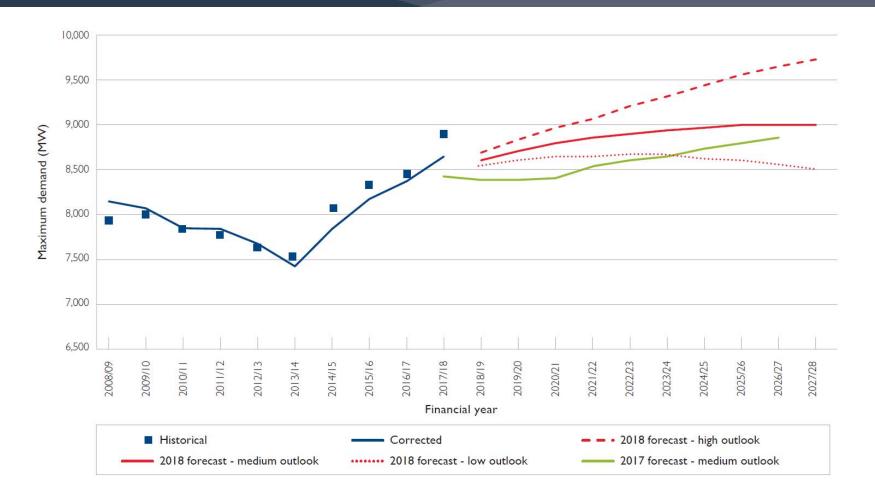


#### Maximum demand forecast

	2017 Forecast	2018 Forecast
Summer maximum demand	0.6%	0.4%
Winter maximum demand	0.6%	0.7%

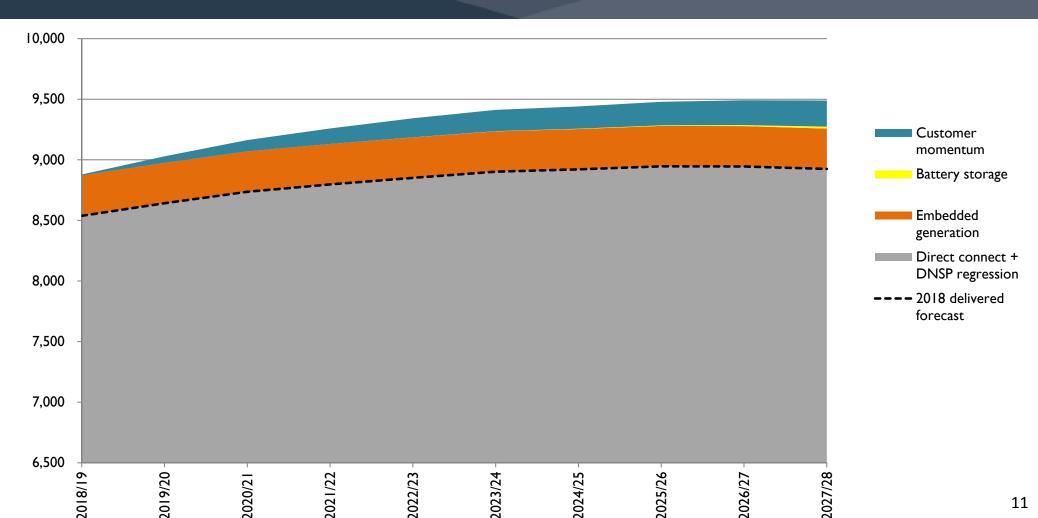
### Historical and forecast transmission delivered summer maximum demand





### Summer maximum demand with new technology adjustments





### Generation outlook – renewable energy



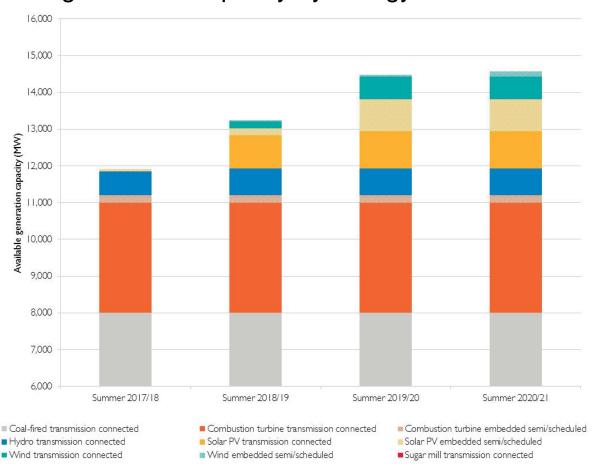




## Generation outlook – renewable energy



### Summer available generation capacity by energy source





- The first ISP in 2018 is an important step forward in integrated planning of transmission and generation in the National Electricity Market
- Powerlink, along with other Transmission Network Service Providers has provided input throughout the ISP process

## AEMO's Integrated System Plan (ISP)



- The ISP identifies the potential need for increasing the capacity of QNI
- TransGrid and Powerlink have been investigating options for increasing the capacity of QNI
- Further details on investment options will be released in coming months

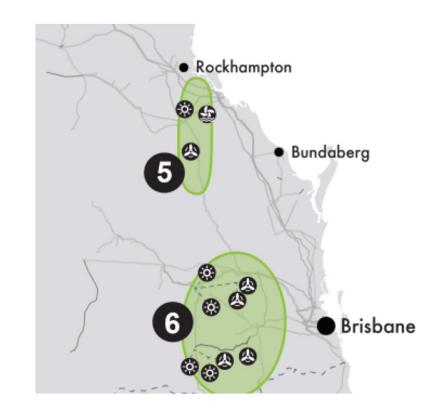
## AEMO's Integrated System Plan (ISP)



#### The ISP:

- also includes information on potential Renewable Energy Zones (REZs) across the NEM
- recommends priority of areas in Queensland which best meet a range of criteria

There is no formal restriction to these zones. Powerlink recommends review of the Generator Capacity Guide to inform proponents' considerations.

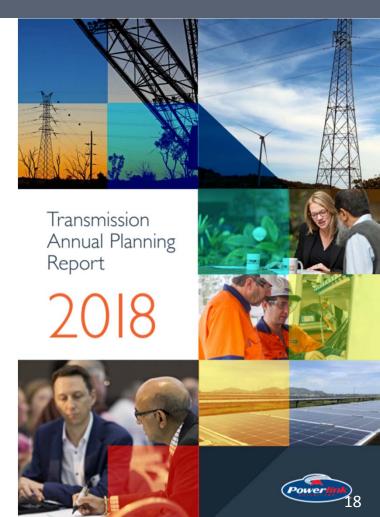




## TAPR Highlights



- Powerlink is responsible for planning the shared transmission network within Queensland
- The TAPR provides information about the Queensland electricity transmission network
- Identifies key areas of the transmission network in Queensland which may require expenditure in the 10-year annual planning review period
- Includes details of committed, current and recently commissioned network developments



## Changing external environment



#### Powerlink is responding to these changes by:

- implementing and adopting the recommendations of the Finkel and other reviews
- adapting to changes in electricity consumer behaviour and economic outlook
- continuing to adapt its approach to investment decisions and adoption of non network solutions
- placing considerable emphasis on an integrated and flexible analysis
  of future reinvestment needs
- supporting diverse generation connection
- continuing to focus on delivering a secure, safe, reliable and cost effective transmission network

### Continuing focus on proactive stakeholder engagement





## Approach to asset management



#### **Planning and Investment**

- Decide when new assets are needed
- What assets and configuration are appropriate and economic for need
- What form those asset should take

#### End of Life

- Evaluate when asset will reach end of life
- Consider ongoing need for asset
- Consider planning and investment

### Operation, Maintenance & Refurbishment

- Ensure asset remains fit for purpose over operational life
- Appropriate operating, maintenance and refurbishment plans
  - Assess condition over time

Asset life cycle

#### Asset management cycle

#### **Strategic Alignment**

Ascertain expectations of stakeholders
Define Powerlink obligations

#### **Continuous Review**

Monitor performance level Identify and adopt improvements

#### Asset Management Strategies

Define how Powerlink will manage meeting the obligation/expectation - to what level and in what timeframe

#### to what level and in what timefram (a risk based approach)

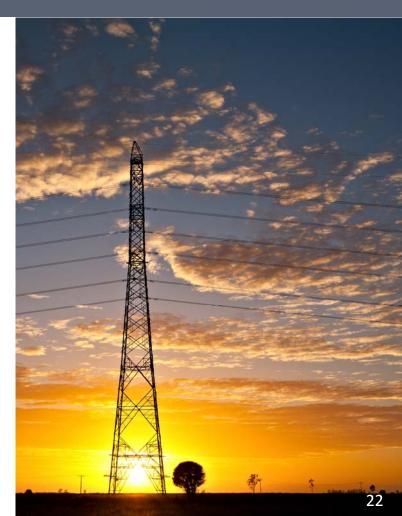
#### **Resource Alignment**

Be aware of resource requirements
- match requirements to resource; OR
resource to requirements

## Future network development



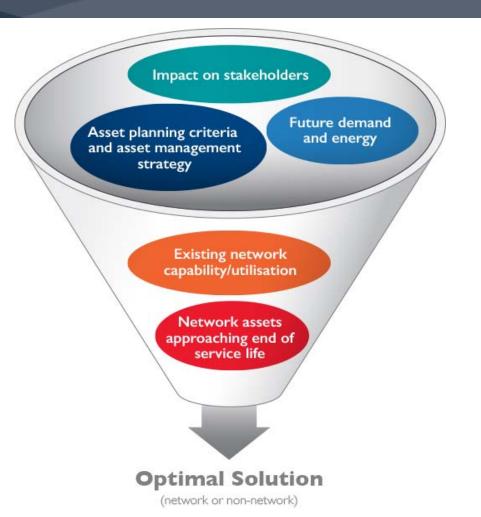
- Queensland's transmission network experienced significant growth from the 1960s to the 1980s
- Many of these assets are now approaching end of technical service life
- Potential capital expenditure to manage the emerging risks related to this asset base represents Powerlink's program of work over the next 10 years
- Integrated planning approach has identified a number of potential reconfiguration opportunities across the transmission network



## Integrated planning approach



Undertake integrated planning to develop Powerlink's future reinvestment program



## RIT-T process



For potential network projects over \$6 million analysis is also publicly assessed through the Regulatory Investment Test for Transmission (RIT-T) process

#### Project Specification Consultation Report

Consultation period: minimum of 12 weeks.

#### Project Assessment Draft Report

Consultation period: minimum of 6 weeks.

Where applicable, a Project Assessment Draft Report exemption may be applied as per the NER cost threshold.

#### Project Assessment Conclusions Report

Publish soon as practicable after the Project Assessment Draft Report consultation period has ended.

## Possible future network developments



#### **Upcoming RIT-Ts address:**

- Expanding NSW-Queensland transmission transfer capacity
- Line refits on ageing transmission line assets such as Brisbane metro area, Townsville South to Clare South
- Substation replacements at Kamerunga and Mudgeeraba
- Transformer replacements at Lilyvale and Bouldercombe
- Multiple secondary systems replacements across the state



### Additional information in the 2018 TAPR



Enhanced information with respect to forecasting data

Discussion on joint planning undertaken in the past 12 months

More detailed discussion on Powerlink's approach to asset management

Information on network control facilities and the outcome of the inaugural Power System Frequency Risk Review

New information on possible network reinvestments and asset retirements in the next 10 years

A compendium of potential non-network solutions over the next five years

Maturing the approach to renewable energy development and recent changes to the network connection process

