



Government of **Western Australia**  
Department of **Treasury**

# Implementing constrained access

Industry Forum  
13 March 2018



# AGENDA

<b>Agenda item</b>	<b>Presenter</b>
<b>Introduction and background</b>	Zaeen Khan, Executive Director Public Utilities Office
<b>Network connections and access reforms</b>	Ashwin Raj, Project Lead Public Utilities Office
<b>Wholesale Electricity Market reforms</b>	Aditi Varma, Project Lead Public Utilities Office
<b>Allocating capacity in a constrained network</b>	Bobby Ditric, Project Lead Public Utilities Office
Break	
<b>Modelling methodology and assumptions</b>	Dr Nick Cutler, Senior Manager Ernst & Young
Wrap up and close	

# INTRODUCTION & BACKGROUND

**Constrained network access is one of the most critical reform issues**

The connections and access framework is a major barrier to generation investment in the SWIS

It impedes new investment in low cost renewable generation

It is also a major barrier to the success of other reforms to the electricity sector

# IMPLEMENTING CONSTRAINED ACCESS



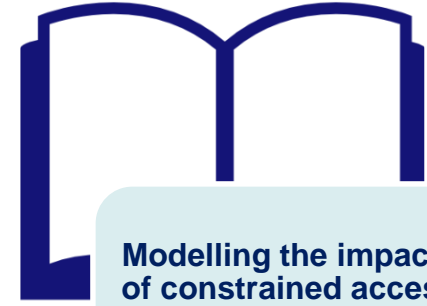
## **Improving access to Western Power's network – Consultation Paper**

Outline of essential reforms to adopt a framework of constrained network access



## **Allocation of capacity credits in a constrained network – Consultation Paper**

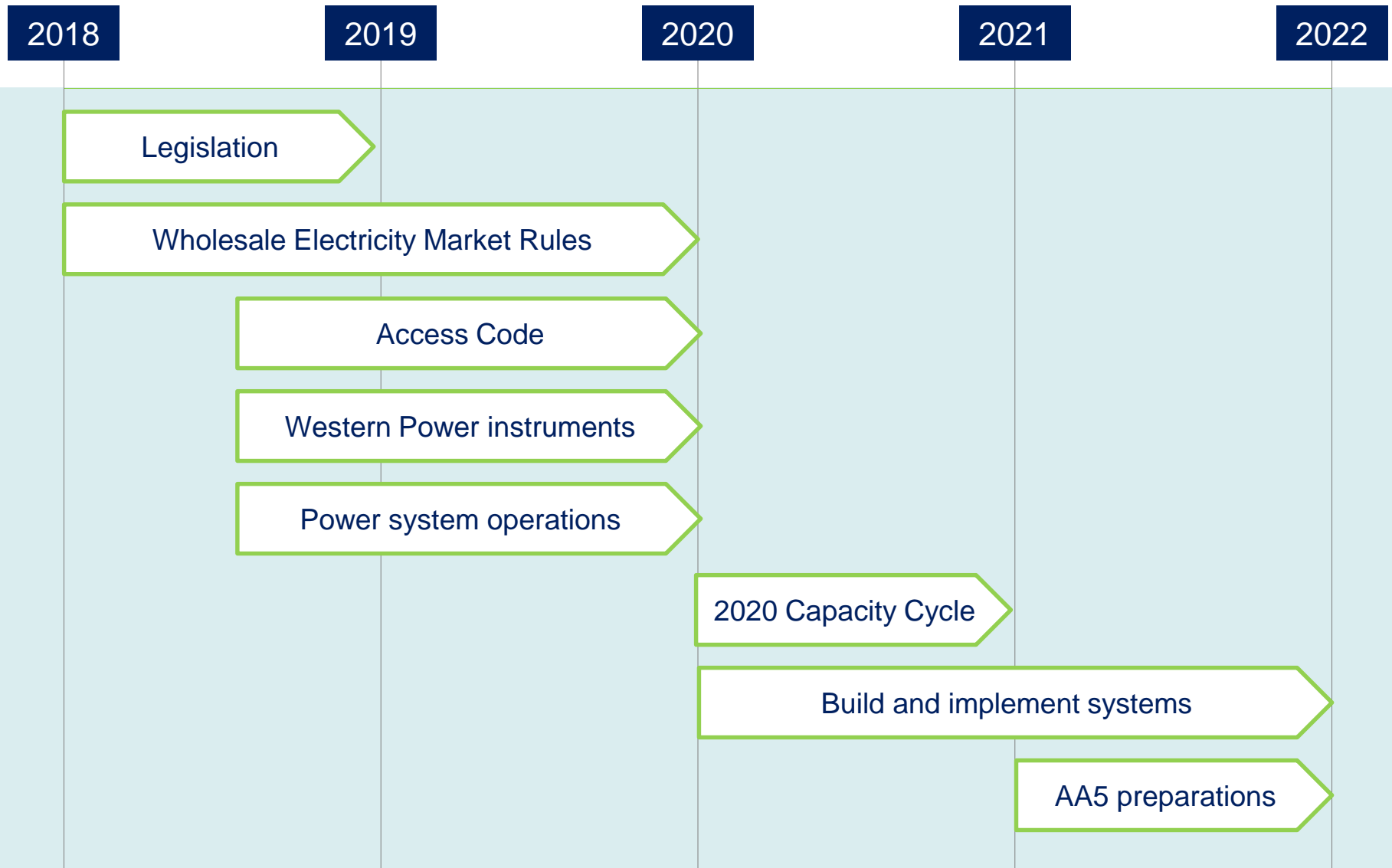
Outline of a proposed approach to allocate capacity credits to certified capacity resources in a constrained network



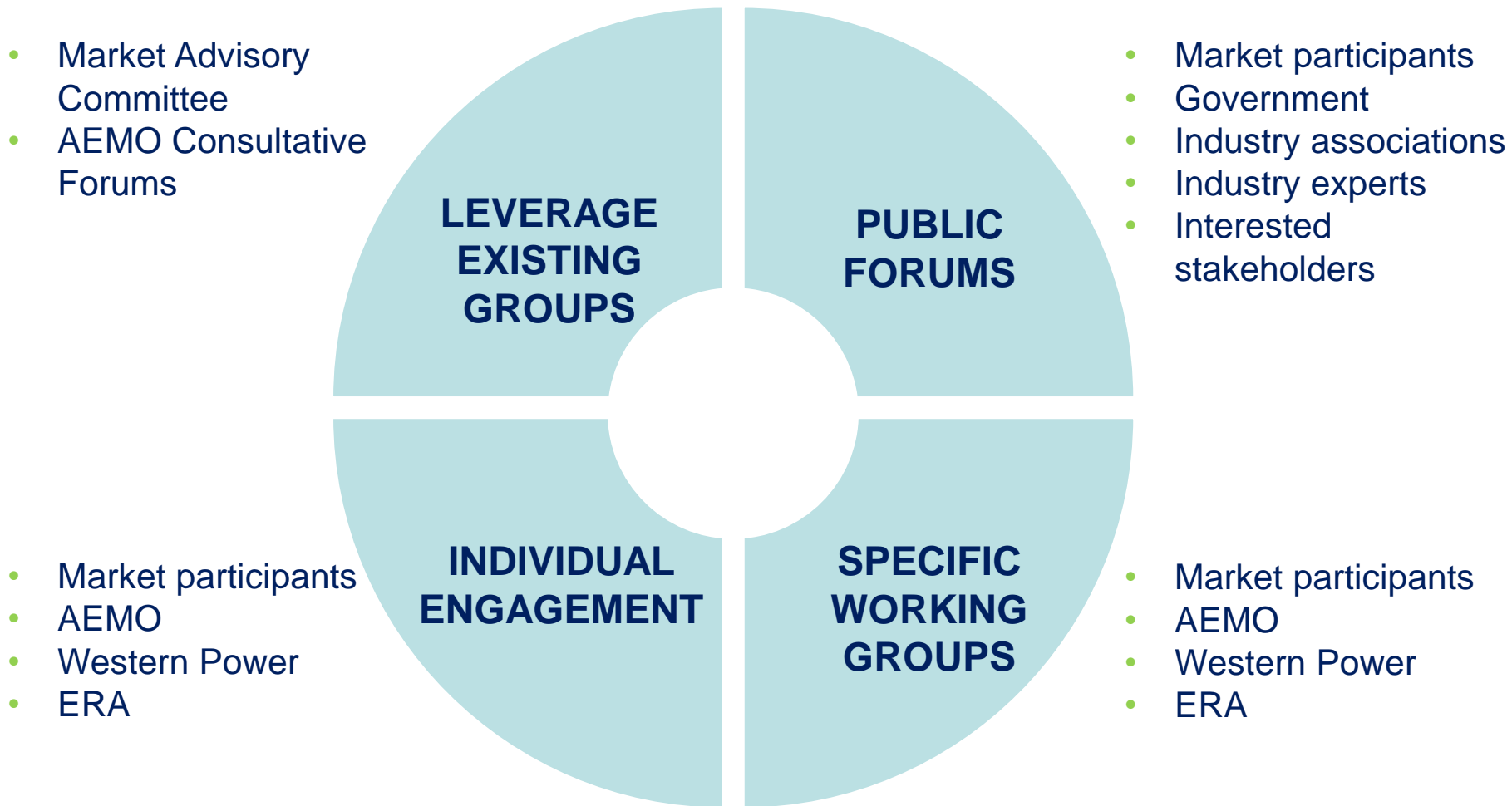
## **Modelling the impacts of constrained access methodology and assumptions – Consultation Paper**

Investigation of the financial implications to generators of a transition to a constrained network access regime

# IMPLEMENTATION TIMELINE



# ENGAGING WITH STAKEHOLDERS



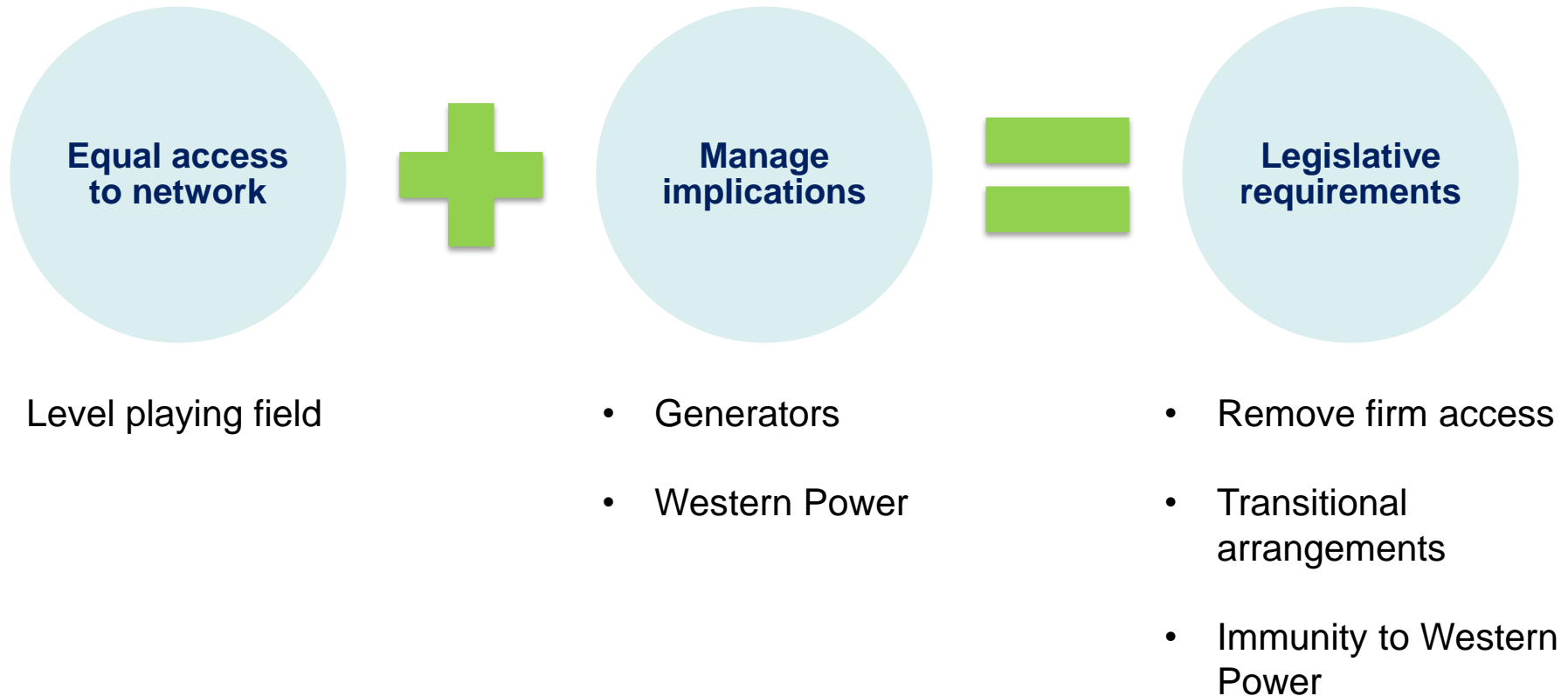


# Essential Reforms

## Connections and Access Framework

Ashwin Raj  
Project Lead

# IMPLEMENTING REFORM





# LEGISLATIVE REQUIREMENTS

## Remove firm access

1

### Issues

- Many access contracts
- Varied terms & conditions
- Confidential

2

### Approach

- General override
- Specific provisions

3

### Implications

- Contracts
- Financial

# LEGISLATIVE REQUIREMENTS

## Transitional arrangements

1

### Issues

- Investigate impacts
- Provide the option

2

### Approach

- Rules and criteria
- Types of losses

3

### Market mechanism

- Head of power
- Further consultation

# LEGISLATIVE REQUIREMENTS

## Immunity for Western Power

1

### Issues

- Potential for disputes
- Need certainty

2

### Approach

- Legislated immunity
- Narrowly defined

# WHAT NEXT?

2018

Mar

Apr

May

Jun

Jul

- Consultation

- Review submissions
- Publish Final Methodology and Assumptions Report
- Start modelling

- Modelling results
- Finalise and publish modelling outcomes
- Finalise and publish policy recommendations

- Advice to Government



# QUESTIONS

## Contact us

**Noel Ryan**

A/Director, Energy Networks

[noel.ryan@treasury.wa.gov.au](mailto:noel.ryan@treasury.wa.gov.au)

(08) 6551 4668

**Ashwin Raj**

Project Lead

[ashwin.raj@treasury.wa.gov.au](mailto:ashwin.raj@treasury.wa.gov.au)

(08) 6551 1047



# Essential Reforms

## Wholesale Market Arrangements

**Aditi Varma**  
**Project Lead**

# MARKET REFORMS

1

**Security  
constrained  
market and  
dispatch  
system**

2

**Power  
system  
security**

3

**Market  
power  
mitigation**

4

**Reserve  
capacity  
pricing  
review**



# QUESTIONS

## Contact us

### **Matthew Martin**

Director, Energy Markets

[matthew.martin@treasury.wa.gov.au](mailto:matthew.martin@treasury.wa.gov.au)

(08) 6551 4640

### **Aditi Varma**

Project Lead

[aditi.Varma@treasury.wa.gov.au](mailto:aditi.Varma@treasury.wa.gov.au)

(08) 6551 4756





# Essential Reforms

## Allocating Capacity in a Constrained Network

**Bobby Ditric**  
**Project Lead**

# CAPACITY ALLOCATION

## Three new elements for capacity allocation with constrained access

1

**Separation  
between  
capacity  
certification  
and  
allocation**

2

**Modelling  
of network  
congestion**

3

**Capacity  
priorities**

# CAPACITY ALLOCATION

## Preparatory stage

- Information regarding network congestion is critical
  - Publishing network constraints and a 'network model'
  - New entrant facilities will require new information
  - New entrant facilities will be required to provide new information

# CAPACITY ALLOCATION

## Preparatory stage

**Network congestion  
information**

**New entrant information to  
develop network model**

**New entrant ready for  
assessment stage**

# CAPACITY ALLOCATION

## Assessment stage

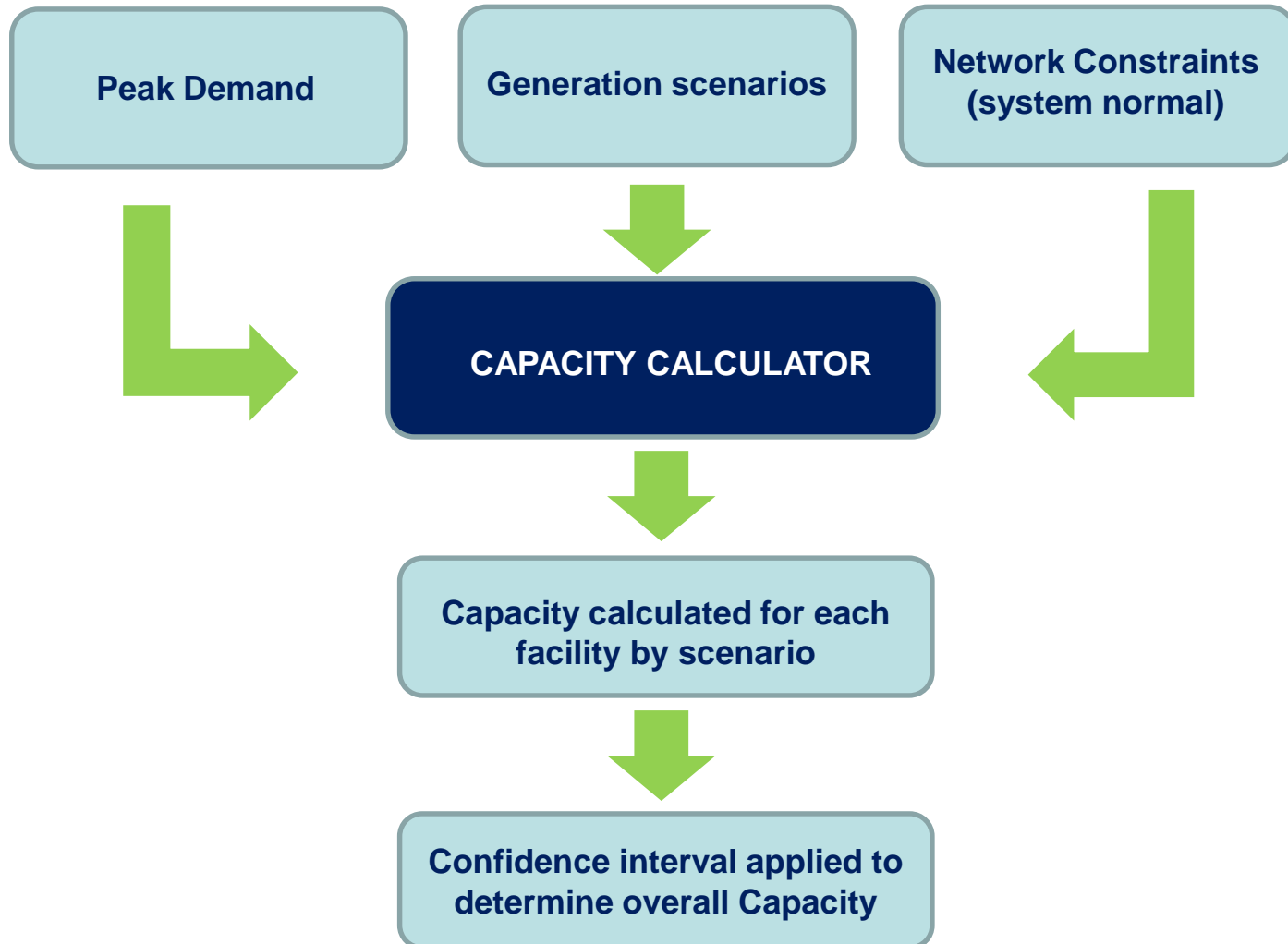
- Facility technical certification
  - Similar to current certification but ignores network access
  - Every facility assigned technical maximum generation limit
- Model network congestion in capacity credit calculator

# CAPACITY CALCULATIONS

## **'Proof of concept' Capacity Calculator has been developed**

- Determines the maximum Capacity able to be generated by each facility across numerous generation scenarios, at time of Peak Demand
- Considers all system normal network constraint equations
- Capacity determined per Capacity Year

# CAPACITY CALCULATIONS



# PEAK DEMAND

- All Capacity calculations performed at time of Peak Demand, consistent with current WEM Rules Capacity assumptions
- AEMO 10% POE SWIS demand forecast for the relevant Capacity Year

## NETWORK CONSTRAINTS

- Define network capability at Peak Demand, under system normal conditions
- Assume planned network outages would not occur under forecast Peak Demand conditions
- Network constraints currently developed using approach similar to AEMO NEM pre-dispatch
- Network constraints account for impact of new entrants



# GENERATION SCENARIOS

**Capacity calculations are dependent on the approach taken to develop generation scenarios**

- Preferred approach is to determine Capacity considering 'all credible generation scenarios'
- Generation scenarios must allow for facilities to be dispatched to the physical capability at time of Peak Demand
- Each generation scenario must have total generation dispatched = Peak Demand

# FINAL CAPACITY VALUE

## Each generator scenario is run through the Capacity Calculator

- Generators are constrained off or on to alleviate network constraints – Objective is to minimise constraint applied
- For each generation scenario the Capacity value for a facility can be either:
  - the physical upper limit for the facility; or
  - Its constrained off value (where applicable)
- The overall physical Capacity value for each facility is then taken to be that value able to be achieved with 95% confidence across all scenarios

# CAPACITY ALLOCATION

## Accreditation stage

### Capacity credit determination

- Capacity credits limited to physical limit of the network

### Capacity priorities

- Monthly settlement of any differences in capacity revenue



# QUESTIONS

## Contact us

### **Matthew Martin**

Director, Energy Markets

[matthew.martin@treasury.wa.gov.au](mailto:matthew.martin@treasury.wa.gov.au)

(08) 6551 4640

### **Bobby Ditric**

Project Lead

[bobby.ditric@treasury.wa.gov.au](mailto:bobby.ditric@treasury.wa.gov.au)

(08) 6551 1124



# **Morning Tea Break**

**Light refreshments are  
available in the foyer**