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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

2018

Legislation

2019

Wholesale Electricity Market Rules

Access Code

Western Power instruments

Power system operations

2020

2020 Capacity Cycle

Build and implement systems

2021

2022

AA5 preparations
ENGAGING WITH STAKEHOLDERS

- Market Advisory Committee
- AEMO Consultative Forums

LEVERAGE EXISTING GROUPS

- Market participants
- Government
- Industry associations
- Industry experts
- Interested stakeholders

PUBLIC FORUMS

- Market Advisory Committee
- AEMO Consultative Forums
- AEMO
- Western Power
- ERA

INDIVIDUAL ENGAGEMENT

- Market participants
- AEMO
- Western Power
- ERA

SPECIFIC WORKING GROUPS

- Market participants
- AEMO
- Western Power
- ERA
Essential Reforms

Connections and Access Framework

Ashwin Raj
Project Lead
IMPLEMENTING REFORM

Equal access to network

Manage implications

= legislative requirements

Level playing field

• Generators
• Western Power

= Remove firm access
• Transitional arrangements
• Immunity to Western Power
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
  - Consultation
  - Review submissions
  - Publish Final Methodology and Assumptions Report
  - Start modelling

- Apr
  - Modelling results

- May
  - Finalise and publish modelling outcomes
  - Finalise and publish policy recommendations

- Jun
  - Advice to Government
QUESTIONS

Contact us

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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

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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
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
  o Similar to current certification but ignores network access
  o 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

Generation scenarios

Network Constraints (system normal)

CAPACITY CALCULATOR

Capacity calculated for each facility by scenario

Confidence interval applied to determine overall Capacity
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

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Morning Tea Break

Light refreshments are available in the foyer