AGENDA

The case for change
Zaeen Khan, Public Utilities Office
Cameron Parrotte, AEMO
Sean McGoldrick, Western Power

Modelling market benefits
Ashwin Raj, Public Utilities Office

Morning tea break

Proposed implementation approach
Ashwin Raj, Public Utilities Office

Q&A and discussion session
The case for constrained network access
1. The context for reform

Zaeen Khan, Public Utilities Office
AIM OF ELECTRICITY SECTOR REFORMS

- Manage transformation of the energy sector
- Remove barriers to investment
- Optimise grid use
- Improve operation of the WEM
- Put downward pressure on prices
CURRENT REFORM PROGRAM

- Improving access to Western Power's network
- Constrained network access (access rights and transition)
- Allocation of capacity credits in a constrained access environment

Modelling future generation requirements in the SWIS
- Best practice regulation review
- Generation mix modelling

WEM reforms
- Power system security
- Reserve capacity pricing review
- Market power mitigation
- Security constrained co-optimised market and dispatch systems
THE PROBLEMS

Network is contractually constrained

Network can handle more connections under constrained access

Won’t achieve least cost market dispatch outcomes

Costs and time for deep network augmentation prohibitive

Barrier to investment
WHY WE NEED REFORM

It is no longer viable to maintain the status quo because:

- Network constraints are expected to bind more frequently
- We are not making best use of existing network capacity
- Constraining access to new generators is technically complex
- Inequity in the market – uneconomic dispatch, higher costs

Network access reform complements WEM reform
2. Current and emerging challenges

Cameron Parrotte, AEMO
## MARKET STOCKTAKE

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Network access complements WEM reform
TECHNICAL AND OPERATIONAL COMPLEXITIES

- Applying constrained dispatch to new generators only is technically and operationally complex from a systems perspective.

- Applying constraints only to new generators does not achieve economic dispatch.

Firm + non-firm access = uneconomic dispatch
3. Future proofing the network

Sean McGoldrick, Western Power
There are limits to how many more runback schemes can be used in certain parts of the network.

Pre-contingent (GIA solution) is designed as a temporary solution only.

Network cannot sustain current arrangements.
Is it appropriate to continue traditional network development in a network that is no longer traditional?
4. Why constrained access is necessary

Zaeen Khan, Public Utilities Office
DO NOTHING IS NOT AN OPTION

- Network cost
- Market cost
- Electricity bill
THE OPTIONS

Build more capacity

Augment the network to increase capacity and clear the constraint. Effectively provide all generators unconstrained access.

Make better use of available capacity

Provide constrained network access, whereby the output of existing generators is curtailed as necessary. Generators compete to be economically dispatched.

The key is to provide equitable network access.
CASE FOR CONSTRAINED NETWORK ACCESS

Benefits

- Better use of network
- Economic dispatch is achieved
- Complements WEM reforms
- Lower wholesale energy prices
- More competitive ancillary services
- Increase in generation diversity
- Opportunity for renewables - lower CO₂

Costs

- Congestion costs
- Implementation costs
- New ancillary services required
CONSTRAINED ACCESS SUPPORTS THE REFORM AIMS

- Manage transformation of the energy sector
- Remove barriers to investment
- Optimise grid use
- Improve operation of the WEM
- Put downward pressure on prices

Improving access to Western Power’s network
Modelling market benefits and impacts

Ashwin Raj, Public Utilities Office
WHAT WE HAVE TESTED

The impact of introducing constrained access

Assumptions / inputs

Generator impact / Market assessment

Partially constrained
Fully constrained
Unconstrained
Base scenario
High scenario
Retirements
Total market payments
Generator net revenues
Network costs

* Partially constrained is effectively the status quo
KEY FINDINGS (BASE SCENARIO)

Fully constrained access provides **lowest total system costs** compared to partial and unconstrained.

Consumers are better off by $288 million under fully constrained access than under partial.
Total market payments are lowest in the unconstrained case but offset by cost of network projects (estimated at up to $700 million).

Total market payments are highest in the partially constrained case.

Fully constrained access provides lowest total system costs compared to partial and unconstrained cases.

No transmission augmentation required under the partial and fully constrained cases.

The fully constrained case provides lowest total system costs, as it results in lower total market payments.
Consumers are better off by $288 million under fully constrained access than under partial.

- Total market payments are $288 million lower in the fully constrained case compared to the partially constrained case.
- Net revenue reduction for existing generators with unconstrained access is $194 million.
- Net revenue = total market payments – (FOM + VOM + fuel costs).
- Net revenue reduction due to the effects of competition and the effects of network congestion.
WHAT ELSE WE FOUND

Balancing prices are lower in the fully constrained case compared with the partial constrained case.

No economic retirements.

Assuming no transmission investment, we could fit (in addition to GIA):

- Around 400MW of new wind generation capacity, mostly in Eastern Goldfields.
- Around 500MW of new gas generation capacity, in Kwinana and Kemerton.

We could fit slightly more new entrant capacity in the fully constrained case than in the partially constrained case.
KEY TAKEAWAYS

- Assessment of costs and benefits supports a move to constrained access.
- Savings to consumers > cost to convert physical firm access to financial firm access.
- Constrained access can accommodate more generation capacity while deferring network investment.
- Consumers are better off by almost $300 million.
- But net revenue for firm access generators are lower.

Fully constrained provides the best outcomes.
Proposed implementation approach

Ashwin Raj, Public Utilities Office
RECOMMENDED APPROACH – FULLY CONSTRAINED

- Our proposed approach
- What’s changed from the previous consultation?
- What hasn’t changed?
- What we intend to achieve with this approach

Convert physical firm access to financial firm access
HOW IT WILL WORK

Physical firm access

- Dispatch arrangements
- Network access
- Scheme for transitional assistance
- Certainty for Western Power
IMPLEMENTATION TIMEFRAME

**2018**
- **Legislation**
  - Draft Parliamentary process
  - Legislation passed

**2019**
- **Access Code and WP Instruments**
  - Review Draft amendments & consult

**2020**
- **WEM reforms**
  - Design, draft and change WEM Rules
  - Initial system design
  - System & process implementation
  - Foundation implementation completed

**2021**
- **Tranche 1 - frameworks**
  - Design, draft and change WEM Rules

**2022**
- **Tranche 2 – Constrained network access & SCED**
  - Design, draft and change WEM Rules
  - Initial system design
  - System & Process Change, including industry testing and trial
  - Go live 1 Oct

**Networks and access**
- Typical WP major customer connection process takes 30 to 36 months

**WEM reforms**
- Capability for 2021 certified & assigned
  - EOI
  - Assess

**Capacity cycle process**
- Capacity for 2022 certified & assigned
  - EOI
  - Assess

- New WEM Rules & AEMO process

**Capacity payments/obligations commence**
- 1 Oct 2021
- 1 Oct 2022
NEXT STEPS

- Consultation paper on proposed approach – seeking your views on implementation approach
- 1-on-1 discussions on modelling
- Report on modelling results by end August
- Advice to Government in September
Questions/Comments
For further information

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