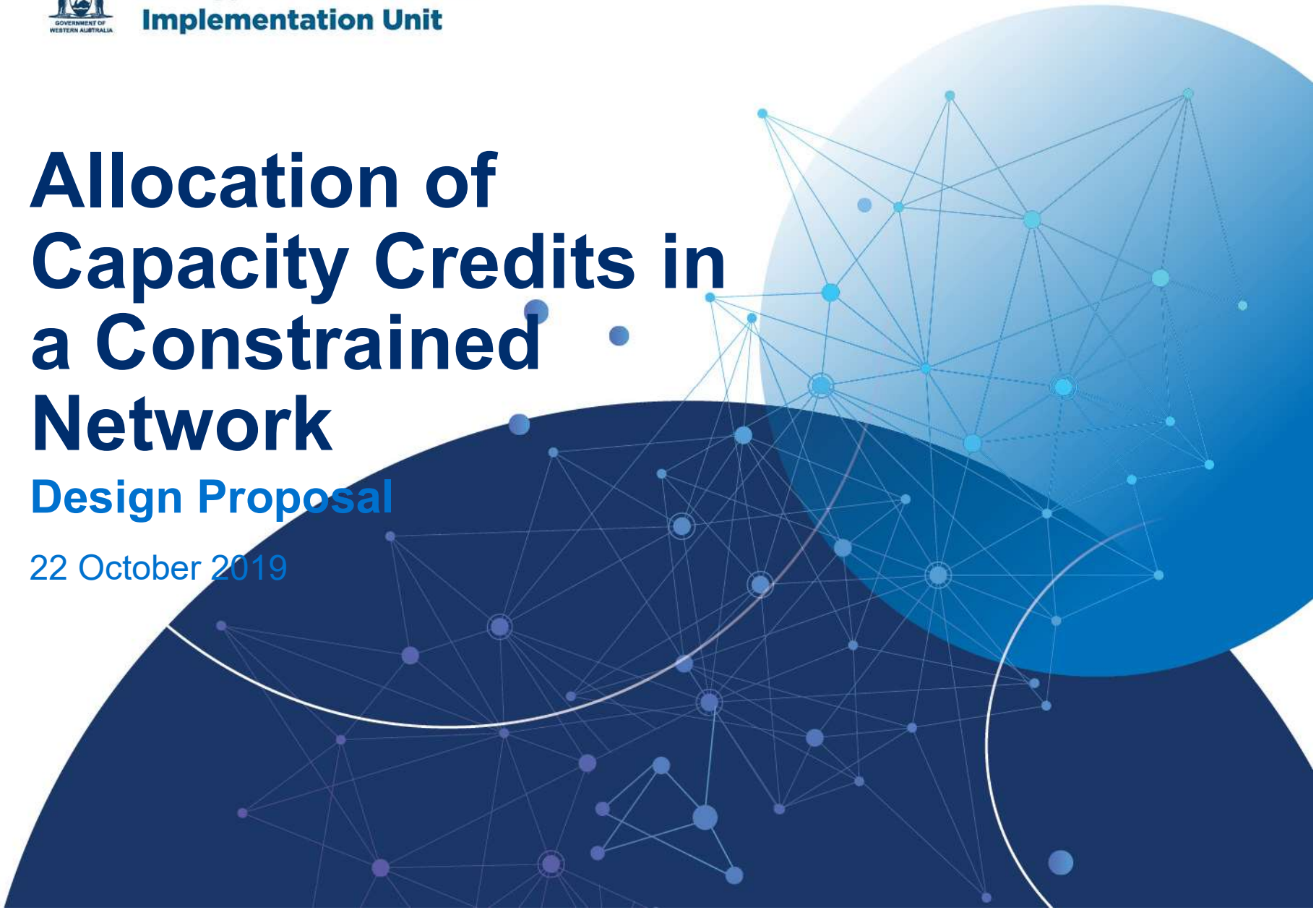
Energy Transformation Implementation Unit

# Allocation of Capacity Credits in a Constrained Network

## Design Proposal

22 October 2019



# Presentation outline

- The need for reform
- Our proposed solution
- Key design elements
  - Tenure
  - The performance assessment
- Proposed allocation process
  - General process
  - Accounting for changes in network capacity
  - Treatment of facility upgrades
- Transitioning to the new arrangements
- Aspects still being developed
- Next Steps

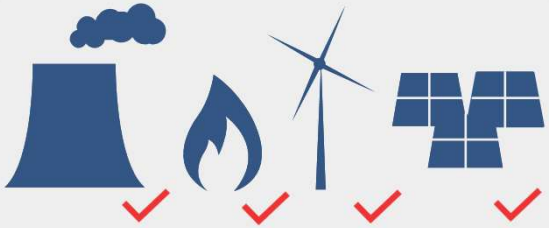
# The need for reform

## Operating with a constrained network

# Purpose of the RCM

**The Reserve Capacity Mechanism ensures reliability by incentivising investment in generation capacity when needed by the system.**

Capacity Payments provide an expected stream of revenues, providing a measure of investment certainty



The RCM rewards capacity for being available when needed by the system

# Capacity credit allocation in an unconstrained network

**AEMO allocates Capacity Credits based on its reasonable expectation of how many MW of capacity the facility can provide at peak times**

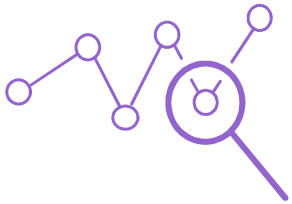
**Performance capability of a facility**


**Capability of the network to accept the output of the facility**

# Issues in a constrained network

**Network constraints will be a prominent factor when allocating Capacity Credits**

**Network capability affected by level of congestion and is influenced by many complex and related factors.**



Requires a robust and transparent process to assess network capability as part of the Capacity Credit allocation process


Accounting for constraints will mean the allocation of Capacity Credits becomes uncertain and subject to year on year volatility

May create incentives for capacity resources to locate where their capacity does not contribute to overall reliability

# Design principles

1. Efficiently rations available network capacity to maximise the access of connected parties and therefore the economic benefit of the network.
2. Respects the value of existing assets on the system and allows those assets to retain economic value under the RCM as long as facility performance is maintained.
3. Provides locational signals to new entrants so they can make informed decisions about risk and opportunity.
4. Minimises barriers to entry and exit.
5. Is simple, transparent, and can be readily implemented in the WEM with minimal changes to existing processes.

# Our proposed solution

## Capacity credit rights

# OVERVIEW OF CAPACITY CREDIT RIGHT PROPOSAL

- Balance the design **principles**
  - **Requires prioritisation and compromise**
  - **Primary principle of allocating rights is to maximise use of the network**
- Capacity Credit Rights relate to the RCM
  - **De-risk (hedge) capacity payments, but**
  - **Do not hedge energy market outcomes**
- Augments existing process for Capacity Credits

# ROLE OF CCR REGIME


Source: Figure 1. Allocation of Capacity Credit Rights in a Constrained Network: Design Proposal 16 October

Maximises use of existing process

- Certified Reserve Capacity unchanged
- Capacity Credit allocation process unchanged – CCRs act as a discount to the Certified Reserve Capacity

# ADVANTAGES

Creates high level of long term certainty around capacity revenue

Expire when plant performance falls off, but transferrable

Strong locational investment signal

Avoids need for complex rationing process e.g. auctions

Integrated with existing RCM

# DISADVANTAGES

Reliant on initial network modelling – risk of black box

Likely to require market power mitigation processes around transfers

As CCs are a single system wide price the CCR proposal limits access to CCs unless augmentation or transfers occur rather than a more direct open and typical competitive process

# Key design elements

# Tenure

## How long will rights last

# Tenure

Performance-based tenure

The difficulty with a tenure linked to time

Preferred approach to tenure

# Performance Based Tenure

Using time-based instruments is problematic because they may:

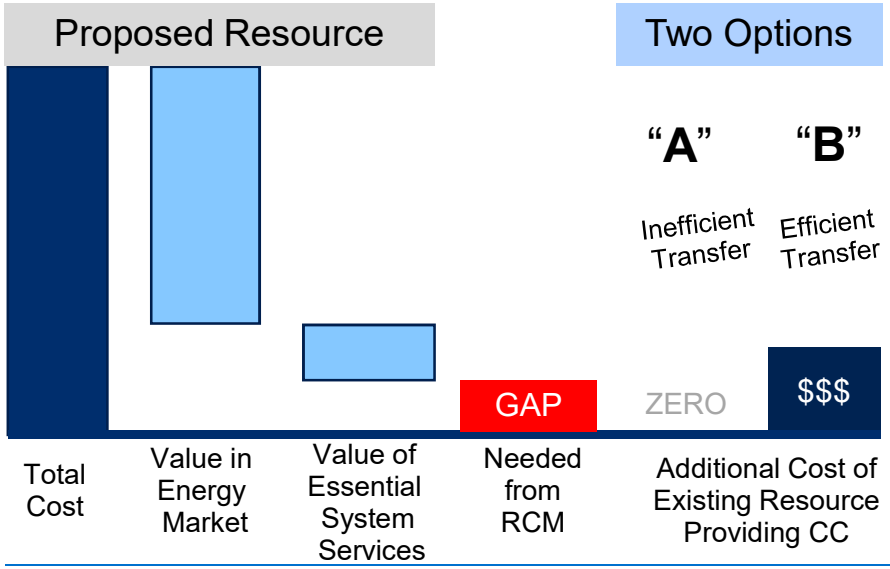
- **Cause current and effective capacity providers to be churned out of the market and be replaced by assets that do not add significantly to the effectiveness of the RCM; and**
- **Attract new entrants to seek access to parts of the network that are constrained rather than seek access to unconstrained parts of the network.**
- **Expose investors to unhedgeable risks post investment from new investments that add no value to the RCM**

Selecting a logical period for a time-based tenure of CCRs is also difficult.

# Difficulty of Tenure Linked to Time

## Performance is key

- There is no theoretical requirement to define an expiry date for any given set of CCRs as **value** is tied to the physical ability to support that right
  - If a resource can meet its eligibility and performance standards, then it should maintain its CCR
  - Churning credits has no overall economic value
  - Poor performance → CC Refunds or loss of CCRs
- Performance and cost, *not time*, determine value




### A simple example

Consider that there is an imaginary form of capacity ("**Option A**") that, once built, can (and will) provide equivalent and reliable capacity "services" forever at no additional cost.

- Such a form of capacity would merit a right that never expires.
- It would not be economically efficient to spend additional money to replace such capacity.

Allowing for rights to be "recompeted" after the expiry of an arbitrary period increases risk to capacity investors for no net economic benefit.

- If a capacity resource is becoming more expensive to maintain its eligibility and performance, then it could transfer (sell) its rights to a new entrant ("**Option B**")

# Preferred Approach
## Summary

**Basic economics favor performance-based CCRs**

- The constrained region does not need any more *capacity*
- Energy and essential system services values are compensated elsewhere

**RCM design favours performance-based CCRs**

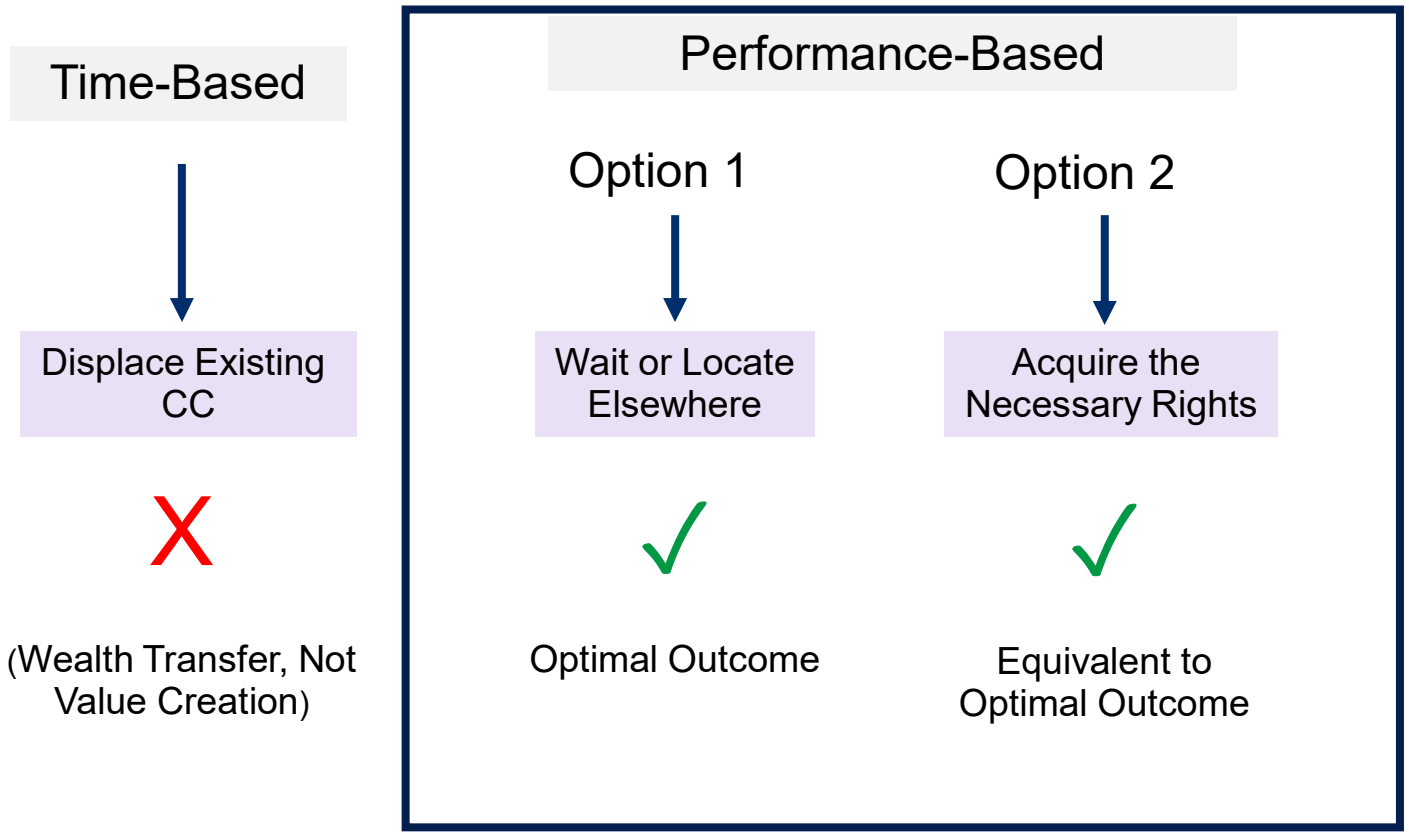
- One CC is same as another CC
- More capacity in a constrained region does not increase system-wide RCM value
- The RCP is a system-wide value

**Performance-based CCRs align incentives for better decisions**

- If, existing capacity meets all requirements for CCs….
- And, if, new capacity does not create enough value from energy market and essential system services to justify the investment

# Preferred Approach

## Summary example



# Performance assessment

## Keeping rights

# Performance Assessment

A ‘Use It Or Lose It’ approach

Transferring Capacity Credit Rights

# Use it or Lose it

## What “performance-based” means

**A CCR exists for as long as the conditions that merit it also exist**

- Unit can still be certified for same number of CCs ← performance issue
- Network capacity has not been materially downgrade**d**

**Accordingly, CCRs are linked to the capacity certification process and to the Capacity Credit Refunds Regime**

- A resource that is downgraded at the certification process would see its CCRs adjusted accordingly
- A resource that is frequently exposed to refund payments is a potential concern

**The capacity credit refund regime should not be a “free option” to sustain CCRs**

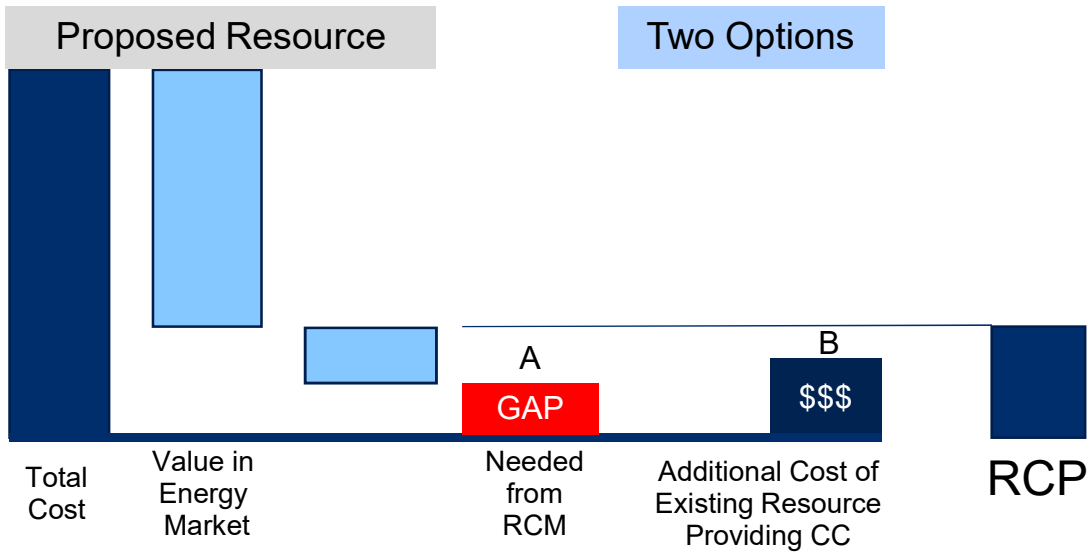
- A resource that refunds all capacity value received may not automatically qualify for preferential renewal of CCRs
- The Capacity Refund Regime may need to allow net penalties (not just *refunds*)

# Transferring CCRs

**If a capacity resource exists or is proposed in a constrained area but does not have (or would not receive) a CCR**

Then…

**An existing CCR holder could seek to transfer its CCR to the eligible resource**




Efficient timing of new resources

Existing resources without CCRs

Allowing transfers reduces incentive to make poor investment decisions to hold on to older expensive capacity

Win/Win Transfer as A > B

# The proposed allocation process

## Sharing a constrained resource

# Overview

## Capacity Credits and Rights will be allocated via 4 stages

**Stage 1**

**Assign Certified Reserve Capacity**

- Run RLM for intermittent generators
- Assess scheduled generators' capacity at 41°C

**Stage 2**

**Trade declaration**

- Facilities nominate: trades, minimum Capacity Credits required, and the floating vs. fixed price
- New facilities provide reserve capacity security

**Stage 3**

**Confirm existing rights**

- Confirm existing rights based on declarations
- Confirm network can support existing rights
- Allocate credits up to rights

**Stage 4**

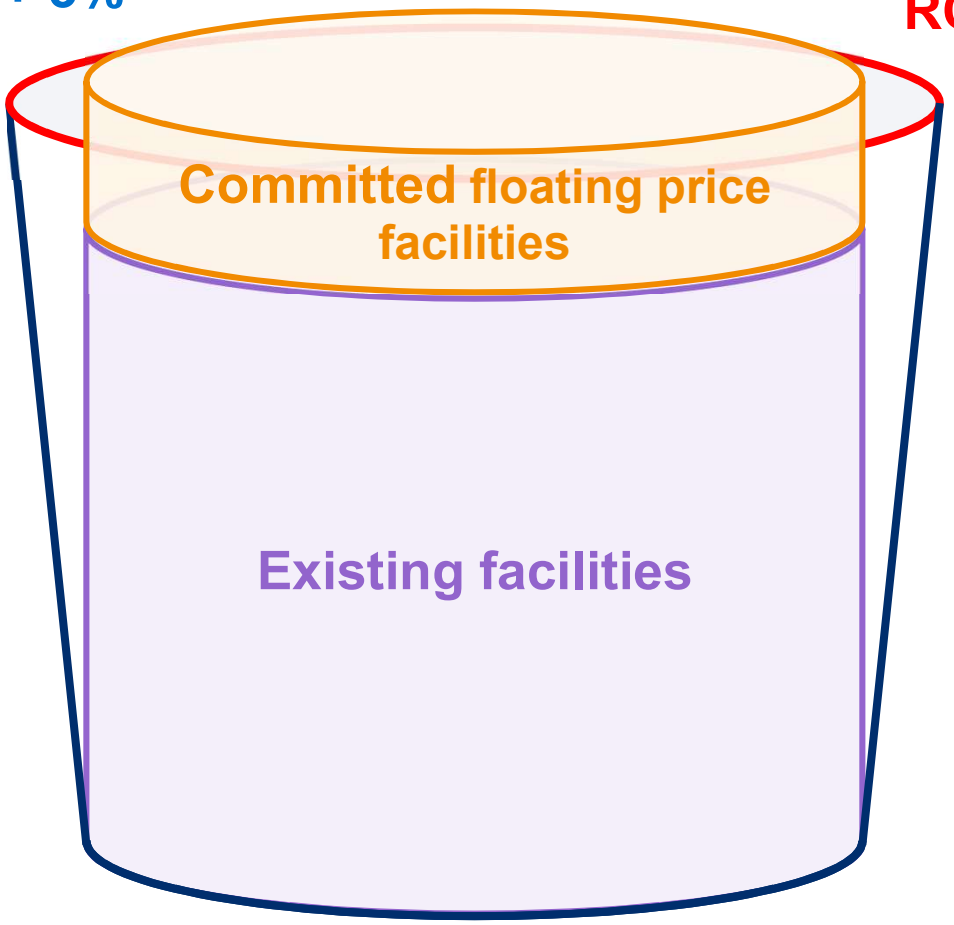
**Assign new rights**

- Assess residual network capacity
- Assign rights based on maximising allocation of new rights
- Allocate credits up to rights

# Stage 4

## Prioritisation is based on the CC prioritisation

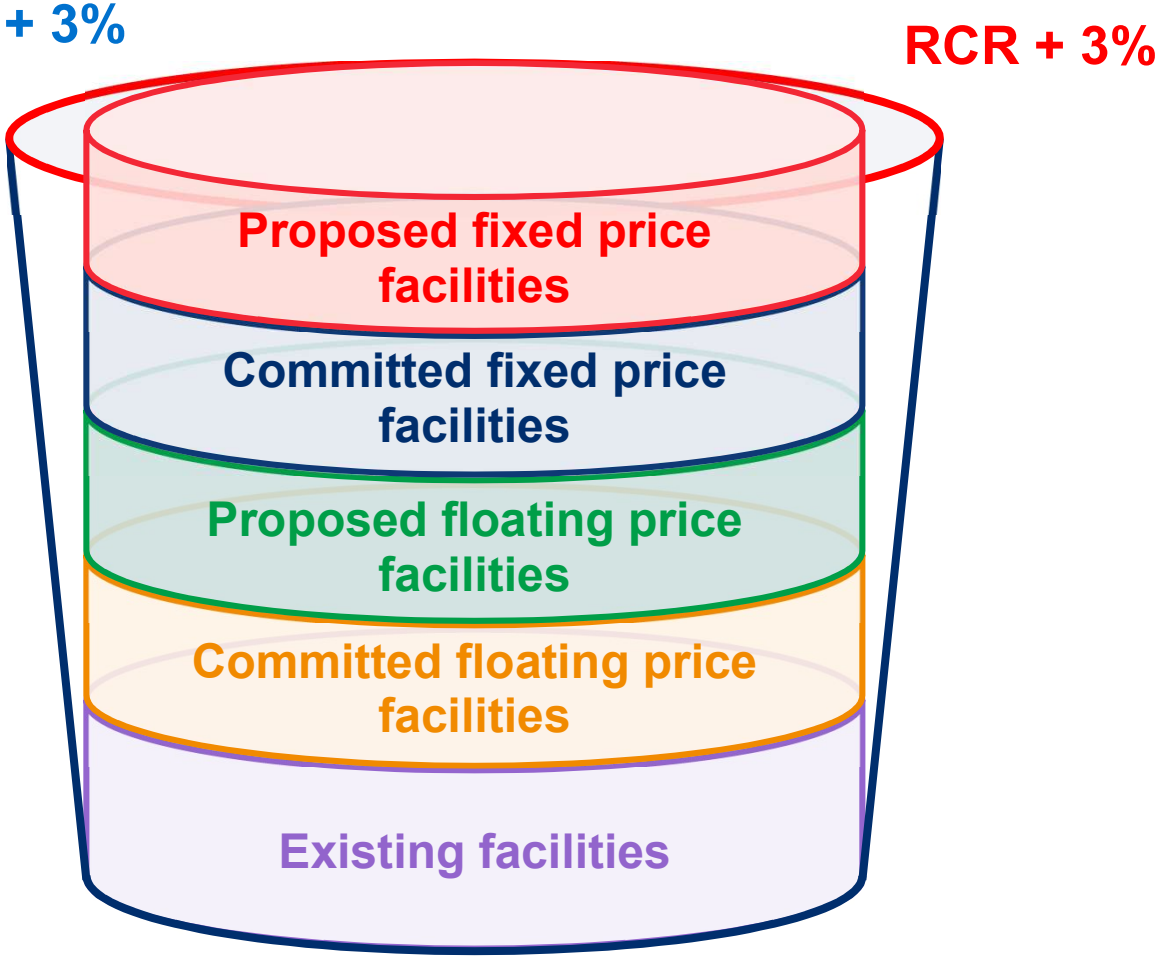
## Scenario 1 – existing + committed floating price facilities ≥ RCR + 3%



# Stage 4

## Prioritisation is based on the CC prioritisation

## Scenario 2 – existing + committed floating price facilities < RCR + 3%



# Changes in network capacity

## Increases and decreases in rights

# Changes in network capacity

## Increase in capacity

### Network driven

- Additional CCRs allocated to plants that have a trade nomination that is above their allocated CCRs using the defined allocation process

### Participant funded

- Allocated to the funding participant
- If network capacity exceeds plant trade nomination, plant still is allocated the CCRs
  - Subject to performance ➔ will lose the CCRs if unable to contribute capacity
  - Able to trade the rights ➔ to recover part of the cost

# Changes in network capacity

## Decrease in capacity

### Temporary outage

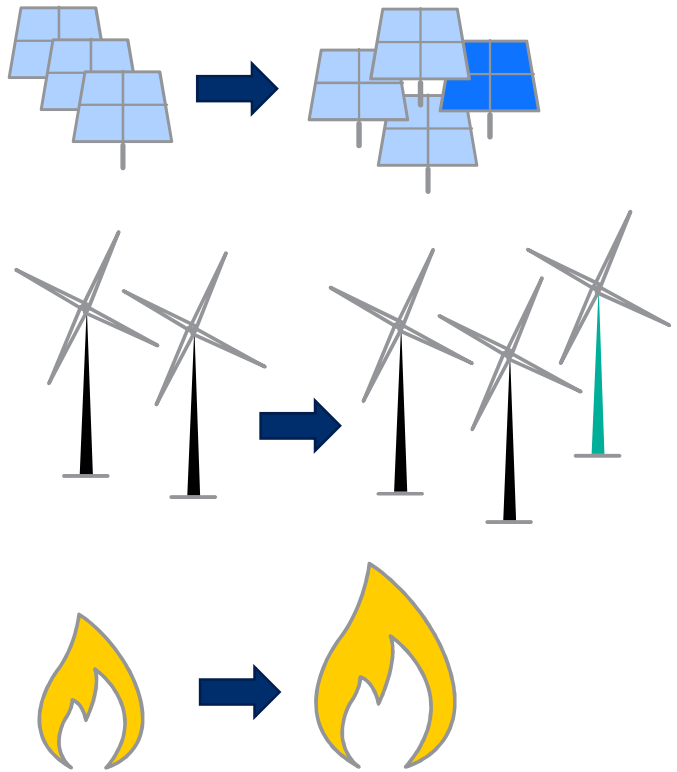
- CCRs are retained
- Temporary adjustments may be possible (discussed later)

### Permanent change

- Allocation process is revisited broadly in reverse priority

# Facility upgrades

# Allocation of CCRs when a facility upgrades



Assess increased certified capacity

Assess residual network capacity

Apply standard allocation approach

Allocate additional CCRs

# Transitioning to the new arrangements

# Transitioning

**OPTION 1**

**Defer the 2020 Capacity Cycle to 2021**

- Would allow project proponents to make use of information in the initial Whole of System Plan to be released in late 2020.
- Allows investors more time to assess the implications of the new arrangements for their investments.

**OPTION 2**

**Provisional assessment for the 2022 Capacity Year**

- Use the constrained access entitlement process to assess network capability and provisionally allocate Capacity Credit Rights on this basis for 2022 Capacity Year.
- Update the provisional allocation using updated constraint information and the new capacity modelling tool as part of the 2021 Capacity Cycle.

# Aspects being developed

# Managing CCR shortfalls at times when the RCM is required

**The issue**:

- *Temporary* network or plant outages
- Plants that hold CCs are unable to provide capacity
- Reliability at risk

## Potential solutions

1. Allow short term trades
   - Time bounded transfer of CCRs to parties who can provide capacity
   - Requires mechanism to efficiently transfer CCRs in the short term
2. Introduce negative refunds
   - Parties that provide capacity to pick up the shortfall are paid the negative value of the refunds
   - Funded by the refunds paid by the defaulting plant

# WORK IN PROGRESS; STORAGE AND DEMAND RESPONSE

Storage may be like a generator, like demand and can provide essential system services

## Storage as a generator

- Treat similarly to a generation source?
  - Performance criteria
  - Nomination as energy source or demand

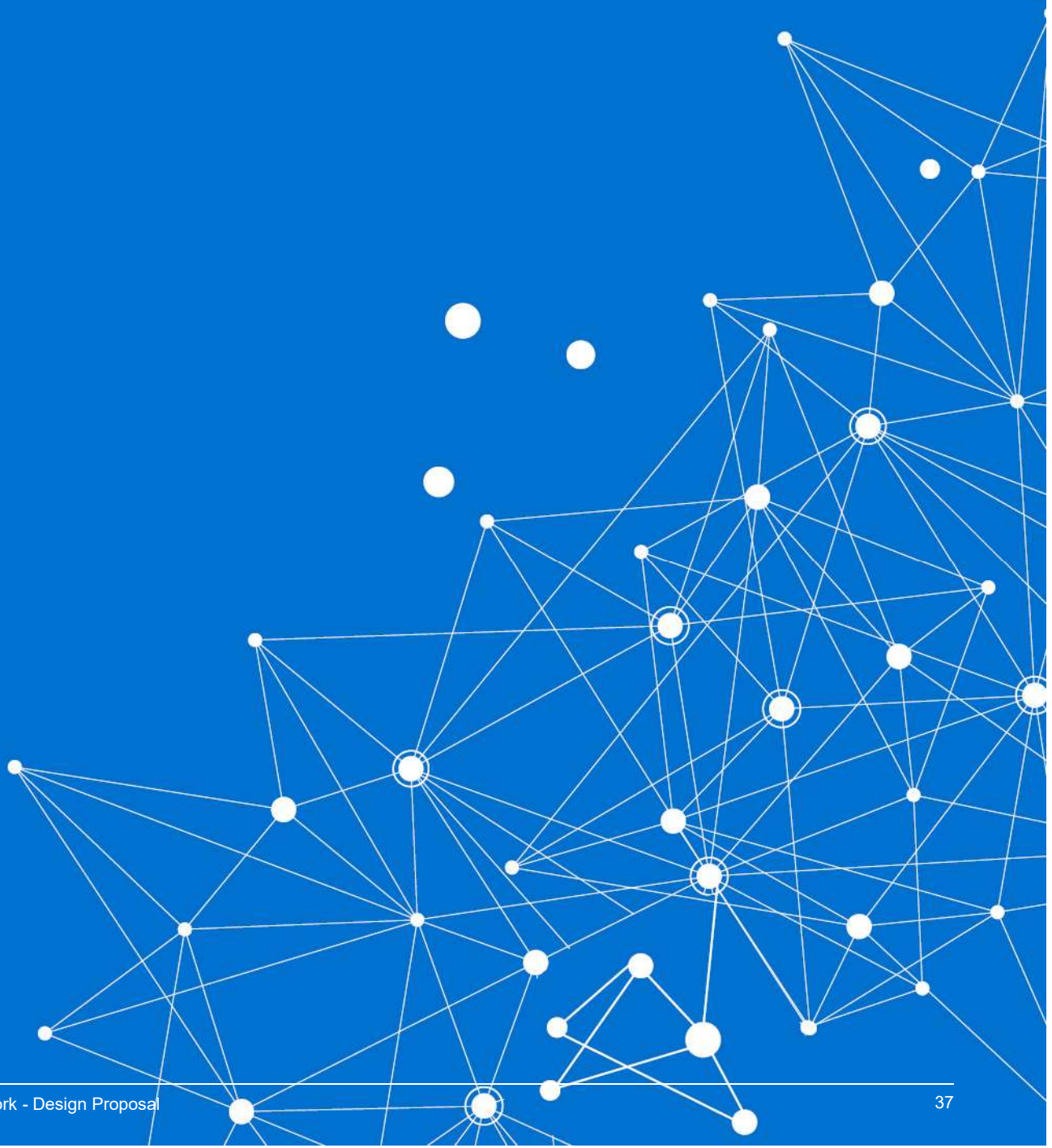
## Demand response

- Generally contributes to the RCM
- Not reliant on network capacity, do they require CCRs?

## Storage as a load

- Generally does not contribute to RCM, but may (rare)

# Next steps



# Next steps

**Stage One**
**Develop and refine high-level design**

- October 2019: Present design proposal to TDOWG
- November 2019: One-on-one's with stakeholders
- November 2019: Present high-level design to TDOWG
- December 2019: Taskforce endorses high-level design
- December 2019: Publish Information Paper

**Stage Two**
**Detailed design and rule drafting**

- January to May 2020: Detailed design development, through TDOWG w/shops and one-on-one's
- May 2020; Exposure draft (RCM) presented to TDOWG
- May to June 2020: Consultation and workshops on exposure draft (RCM)
- July 2020: WEM Rules (RCM) gazetted

Energy Transformation Implementation Unit

# Allocation of Capacity Credits in a Constrained Network

## Design Proposal

22 October 2019

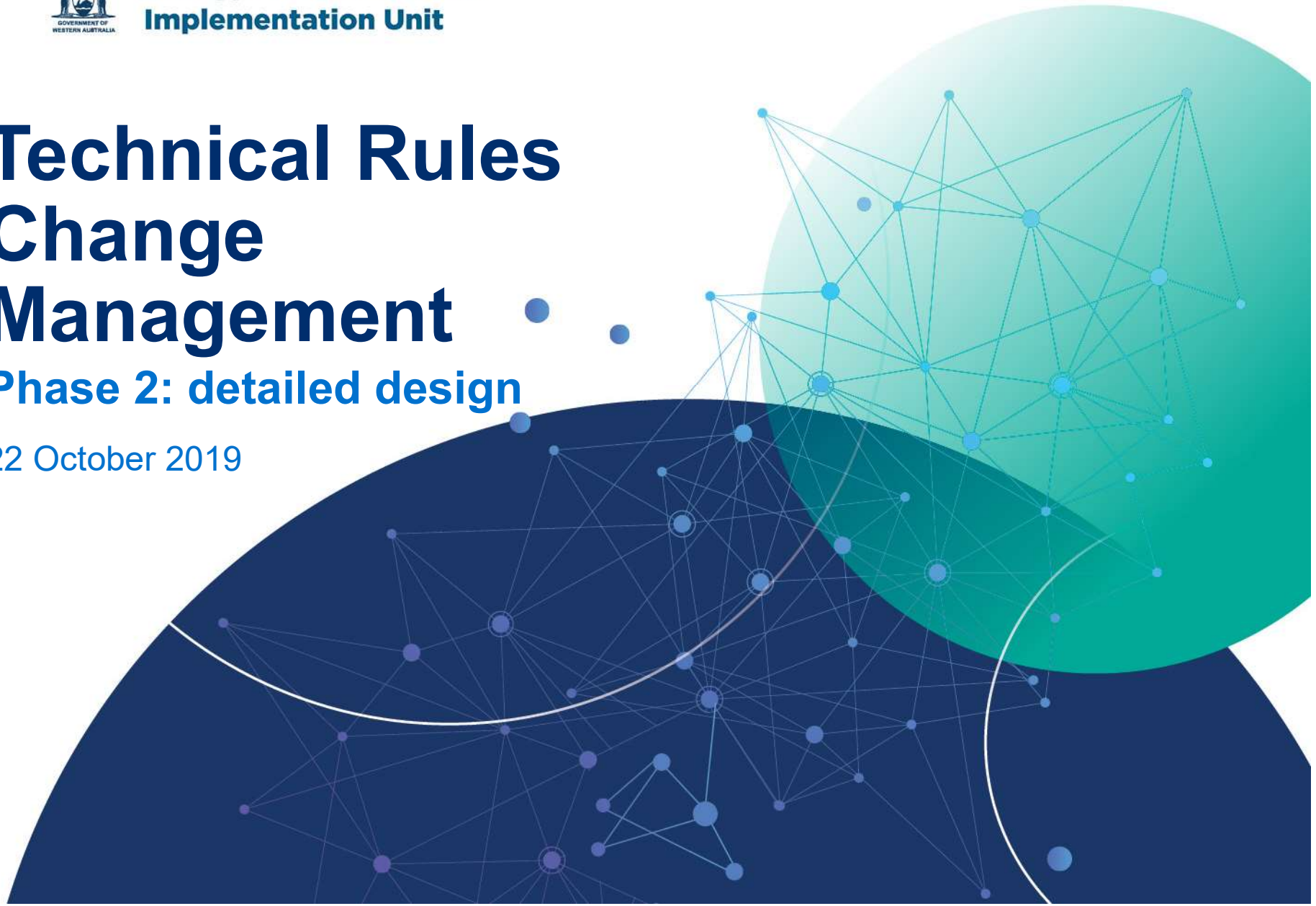
# Questions?

Energy Transformation Implementation Unit

# Technical Rules Change Management

## Phase 2: detailed design

22 October 2019



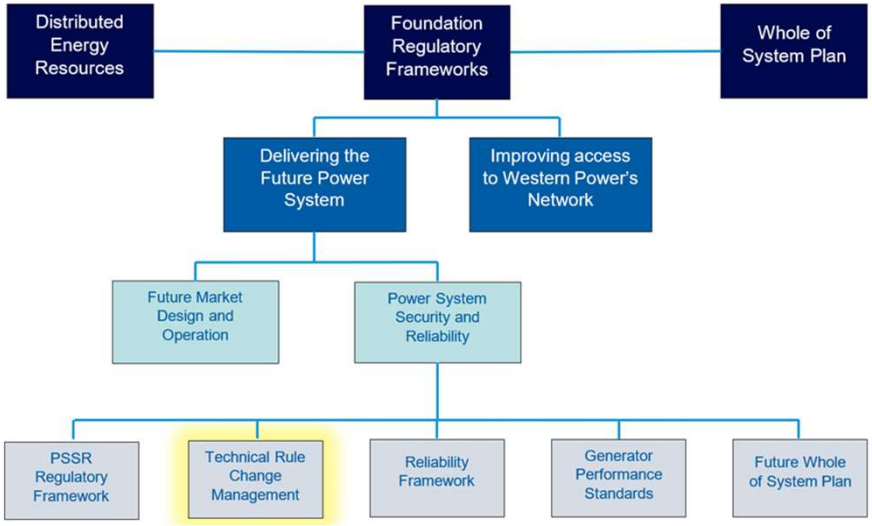
# Technical Rules Change Management

## Project Overview

**Phase 1:** Assessment of options to address deficiencies with the existing Technical Rules change process, concluding with a decision by the Taskforce on a revised high-level change management framework for further development under Phase 2.

**Phase 2:** Further development of the framework identified in Phase 1, including a detailed assessment of Access Code and Wholesale Electricity Market (WEM) Rule changes required, concluding with a decision by the Taskforce on detailed design, informing draft amendments to relevant instruments.

**Phase 3:** Implementation of the changes identified within Phase 2. Phase 3 will include formal consultation on changes to the Access Code. Finalised, amended instruments will then be presented to the Minister for Energy for final approval prior to gazettal.



# A case for change

## Summary of previous discussions- June 2019 PSOWG

- In practice, Western Power is the only party that can submit a rule change request, for the consideration of the ERA
- The Technical Rules change management process has been criticised as being inequitable
- Technical Rules have not responded well to changes in the sector
- The change management process is inconsistent with the WEM Rules

The framework under Chapter 12 of the Access Code is not suitable for an open change process:

- It does not allow the ERA to design a mandated process or guidelines
- Timeframes inflexible and insufficient to support voluminous or complex changes
- Advisory support not fit-for-purpose
- Powers to reject are inadequate

# A case for change

## Progress

- The Taskforce agreed to proceed to Phase 2, detailed design of a new change management process to allow for any interested party to submit a change request
- Paper released August 2019: *Improving the Technical Rules Change Management process* (available on ETIU website)
- Phase 2, detailed design nearing finalisation- scheduled for November Taskforce meeting

# Other relevant projects

- Movement of generator performance standards for transmission connected market generators from the Technical Rules to the WEM Rules
- Western Power is reviewing its Technical Rules to:
  - respond to reforms underway;
  - accommodate advancement in technologies;
  - improve clarity on roles and responsibilities;
  - improve power system security standards and network planning criteria;
  - improve network operations and coordination of standards; and
  - improve connection standards.

**These changes may decrease the volume of expected rule change requests, but uncertainty remains over the volume likely to be received**

**Flexibility has been a key design feature**

# Design parameters

1. Rule change process
2. Ability to reject applications
3. Technical Rules Committee
4. Considerations in assessing applications
5. Timing and consultation
6. Cost recovery and commencement date

# Rule Change Process

## Any interested party can submit a change request

- ERA empowered to develop & oversee processes/guidelines/procedures that applicant must follow in submitting a change request
- Any processes/guidelines/procedures must be published and can be amended from time-to-time
- Application is ‘accepted’ when ERA determines that it has been completed in accordance with the published process
  - Requirement for the ERA to advise the applicant
- The ERA may establish a voluntary pre-rule process to support proponents in submitting an application
  - Technical Rules Committee may be tasked with a role in the pre-rule change process
- ERA not required to consider applications in order that they are received
  - Can combine applications or consider out of order
- ERA may work with the proponent to develop/evolve an application

# Ability to reject applications

- ERA may reject applications that do not adhere to the published processes/guidelines/procedures
- ERA may reject applications that are materially similar to those considered within the previous 12 months
- [Existing- s12.51] ERA may reject applications that are:
  - Misconceived or lacking in substance; or
  - Have been made on trivial or vexatious grounds

# Technical Rules Committee

- The Technical Rules Committee (TRC) remains an advisory committee of the ERA
- The ERA sets the terms of reference for the TRC (i.e. meeting frequency, subcommittees)
- The ERA must seek the advice of the TRC for all substantial rule change requests
  - Optional exception for those that it rejects (see previous slide)
  - Standing committee not mandated, but permitted
- The ERA is to provide the TRC with a time period in which to provide advice
  - The time period must be commensurate with the scope and complexity of the change request, but must not be less than 15 [TBC] business days
  - The TRC may request and extension, and the ERA must reasonably consider
- The ERA may proceed to a decision without TRC advice if timeframes are exceeded (including extensions), but must act reasonably in choosing to do so

# Technical Rules Committee

- The ERA is required to publish all advice it receives from the TRC
- [Existing s12.20] The Chair of the TRC is the representative of the Coordinator of Energy
- The System Manager will be represented on the TRC
- The requirement for an interconnected network operator to be on the TRC will be removed
- The quorum will be the mandated membership
  - Coordinator of Energy rep; Western Power; AEMO
- [Existing s12.19(b)] The ERA can appoint any other person to the TRC that is considers appropriate

# Considerations in assessing applications

- [Existing s12.53] Must be consistent with Chapter 12 of the Access Code and the Code Objective
- Requirement to consider system security and reliability impacts of a rule change request to be included
- s12.54(b) to be removed

  If the *Authority* considers a proposed amendment to the *technical rules* to be substantial, the *Authority*…

  (b) must approve the proposed amendment only if it considers that the amendment will not have a material adverse effect on the *service provider* or a *user*.
- Requirement to make an ‘on-balance’ assessment of impacts on the network provider, users, and end-consumers

# Timing and consultation

- [Existing 12.54(a)] for substantial change requests, the ERA must undertake at least one round of public consultation
- ERA must publish request for submissions, with a minimum 10 day consultation period (no maximum defined)
- [Existing A7.10] the ERA must consider all submissions it receives by the due date
- ERA should use best endeavours to make a decision on all applications within 150 [TBC] business days of accepting the application
  - Includes TRC and public consultation periods
  - ERA may seek additional information from rule change proponent after accepting the application
  - 'stop the clock' in instances where additional information is requested
- ERA must publish for each financial year:
  - The number of applications received in that year
  - The number of applications where a final decision was not make within the 150 [TBC] day time period.

# Cost recovery & commencement date

- AEMO will have new roles:
  - Participating in the Technical Rules Committee
  - May make a change request for the Technical Rules (only where it relates to its functions as system manager or market operator)
  - May make a public submission to the rule change process
- Changes to be made to the WEM Rules to allow AEMO to cost recover through the general scheme, governing the determination of AEMO's annual budget and approval of its Allowable Revenue and forecast capital expenditure
  - Subject to assessment and approval of the ERA
- A commencement date will be determined after which a submission to change the Technical Rules can be made by any interested party
  - This will allow time for Western Power to complete its review, and for the ERA to establish processes.
  - All other changes will be effective from the date of the Access Code and WEM Rule changes

# Next steps

- Feedback provided by TDOWG to be considered
- Timing to be finalised for
  - ERA and TRC decision making
  - Commencement date
- Drafting of:
  - Access Code changes (Chapter 12)
  - WEM Rule changes (minor)
- Taskforce presentation late November
- Release of Information paper ~ early December 2019
- Proceed to Phase 3
  - Access Code changes to be combined with other reform program changes
  - Expected formal consultation ~ February – March 2020
  - Expected implementation ~ April – May 2020