

# ENERGY SECURITY BOARD

TRANSMISSION ACCESS REFORM  
TECHNICAL WORKING GROUP

29 June 2023





We acknowledge the Traditional Custodians of country throughout Australia and recognise their continuing connection to land, waters and culture. We pay respect to their Elders past, present and emerging, and extend that respect to all Aboriginal and Torres Strait Islander peoples here today.

ESB

## ACKNOWLEDGEMENT OF COUNTRY



## AGENDA

Time	Topic
1400	Welcome, objectives and agenda
1405	Summary of submissions
1430	Visualisation of the prototype for TAR
1500	Update on enhanced information
1530	Process going forward
1545	<i>Allowance for additional Q&amp;A</i>
1600	Thanks and close

# SUMMARY OF SUBMISSIONS



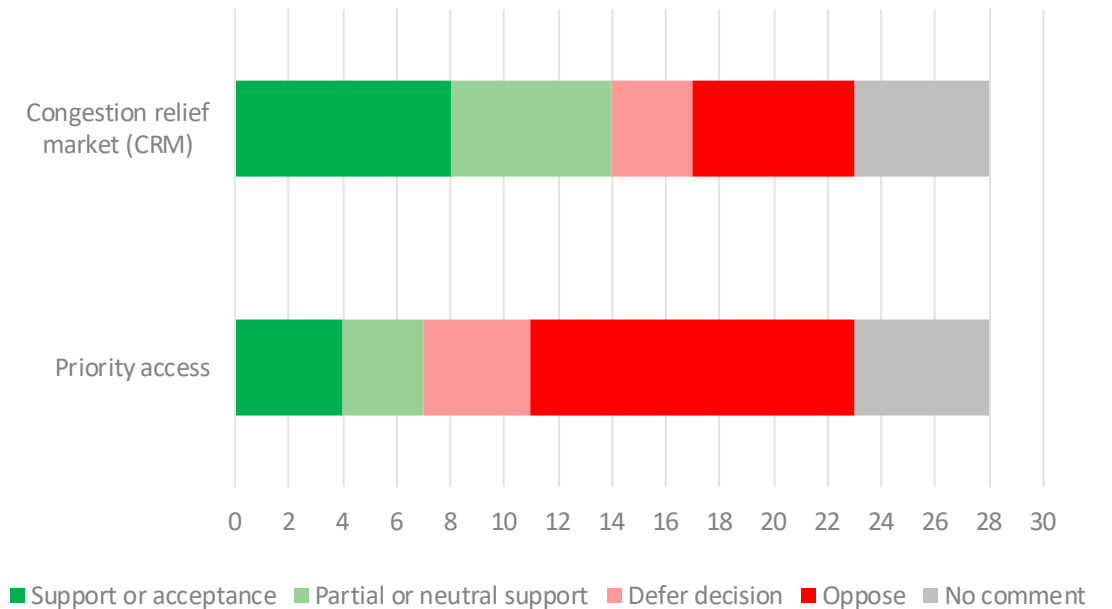
The ESB received 28 submissions to the consultation paper published in May 2023 of which:

- 25 represent generation and/or retail interests
- 2 represent network service providers
- 1 represents consumers.

Overall:

- Stakeholders are broadly supportive of the case for change.
- Stakeholders have expressed support and/or acceptance of the CRM.
- There are differing views on priority access and its design details. Priority access is less developed in its design detail compared to the CRM.
- The Energy Consumers Australia (ECA) has reiterated that the Ministerially endorsed design—priority access with the voluntary CRM—is the lowest common denominator.

## Summary of stakeholder preferences for the hybrid model components



### Key takeaway

The intent of this presentation is to consolidate and share key themes, concerns and questions from submissions, but we do not propose to answer or resolve matters at this time. We are reviewing and assessing each of these points of feedback and will respond as part of our process going forward.



More generally, regarding the package of transmission access reform:

- Stakeholders expressed concern that:
  - accelerated timeframes for making a decision will increase regulatory risk
  - implementation challenges may delay the expected benefits or not address the reform objectives.
- Some suggested delaying the reforms and/or implementation.
- The ECA provided a counter argument that implementation of the reform is key; “A quick implementation leads to a more coordinated, lower cost transition; a slower implementation leads to an uncoordinated, more expensive transition.”
- Stakeholders recommended (among other things) that:
  - the ESB should manage implementation risks by, for example, allowing for a long period of pre-production testing
  - the ESB should confirm the future pathway for implementation and consultation to ensure stakeholders are ‘brought along the journey’
  - support should be given to a 3- year post-implementation review of the reforms.
- The ECA proposed interim key performance indicators before the mandatory 3-year review i.e. at least annually, if not every six months, the AEMC should publish data about the market and how it is working.

## Key takeaway

Stakeholder feedback is key to inform the ESB’s recommendations and next steps. We will share details of the proposed way forward after the Energy Ministers’ meeting.

# SUMMARY OF SUBMISSIONS

PRIORITY ACCESS



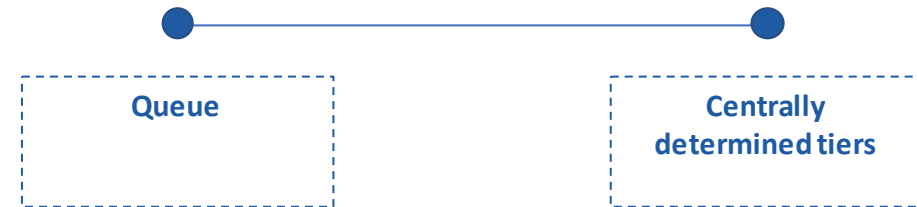
- A number of stakeholders have challenged the value proposition for priority access including the Clean Energy Council (CEC).
- Members of peak bodies including the Clean Energy Investor Group (CEIG), Australian Energy Council (AEC) and Australian Financial Markets Association (AFMA) have shared mixed views from their members that adopt different perspectives on the relative risks and strengths of the model design.
- Key concerns are that the priority access model:
  - may introduce new inefficiencies into the energy market dispatch and rely on the CRM to rectify these
  - is not proportional as a solution to the problem and introduces complexity to investment and operational timeframes
  - may be unable to be implemented in a way that fulfils the intent of the reform objectives
  - could inadvertently lead to connection delays and sub-optimal projects as they “rush to connect”
  - may deter future investment if the congestion risk is disproportionately allocated to future projects.
- The ECA noted that real reform is needed; eliminating priority access would result in a weak and ineffective overall reform package.





- The majority of stakeholders expressed a preference for the queue model over the centrally determined tiers model.
- Some submissions noted the challenge in nominating a preference given the relative strengths / risks of each.
- Regarding the queue model, most supported a strictly chronological order, recognising that grouping may be needed for pragmatic reasons (to avoid rushing or for implementation). The suggested options were:
  - Grouping in 3-month quarters, or
  - As short a time window as possible.
- Regarding the centrally determined tiers model, all preferred a first-come-first-served basis.
- A number of stakeholders recommended to exclude certain constraints e.g. outage or suddenly emerging stability constraints from prioritisation to avoid unmanageable risks.
- Stakeholder proposed to incorporate other factors into the assignment of priority levels e.g.
  - higher priority for those providing system strength services
  - higher priority for those investing in transmission augmentation.

## Primary design choice for priority access



### **Stakeholder questions**

*Stakeholders questioned the proposed treatment of REZs and the interaction with national reform:*

- *One stakeholder suggested it may be difficult to design a free and fair process when managing the reservation of priority levels for non-REZ generators and REZ coordinators.*
- *There is a concern that viable projects may be delayed or deterred.*
- *On the other hand, another stakeholder proposed that priority levels need to be reserved well in advance for REZs to avoid non-REZ generators ‘free-riding’.*
- *Some stakeholders suggested applying use-it-or-lose-it provisions to REZs as well as generators.*



13 submissions provided feedback on the level of priority of which:

- ~Two thirds supported a harder level of priority noting that:
  - harder priority would better address the reform objectives
  - reliance should be placed on the CRM to achieve operational efficiency
  - the level of hardness is ultimately subject to technical feasibility in dispatch.
- ~One third supported a softer level of priority given that it would:
  - encourage efficient investment in uncongested areas
  - reduce any new inefficiencies in the energy market
  - minimise the impact of the reform
  - allow reform to be delivered in a timely manner i.e. implementation is key. It is better to achieve a softer level of priority sooner than a harder level later.

## Design choice for degree of priority

**Harder;** dispatch outcomes more influenced by the priority level of generators competing in the same set of binding constraints rather than constraint coefficients.

**Softer;** generators with a high priority are favoured but constraint coefficients remain a factor in determining access.

### **Stakeholder questions**

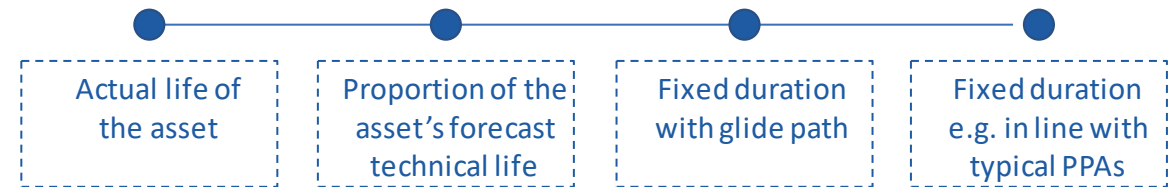
*Stakeholders requested more information and testing on the technical feasibility and stakeholder impacts if a harder or softer level of priority was adopted.*



16 submissions provided feedback on the duration of the priority level, of which:

- ~Half supported asset life (or variants including extending to the connection life or 90% of an asset's capacity for the asset life).
- Of the remainder, there were mixed views including:
  - a short, fixed duration to minimise the reform change
  - a combination of harder priority with shorter duration (10 years)
  - a fixed duration similar to PPA terms
  - fixed duration with a glide path (15+ years)
  - longer duration (without nominating a preferred option).

## Design choice for duration of priority level



### **Stakeholder questions**

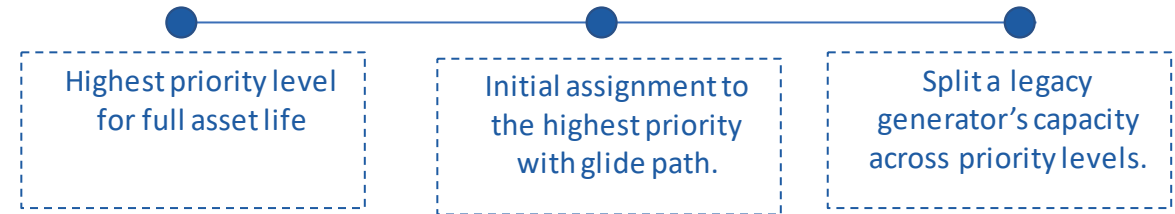
*Stakeholders sought to clarify how priority levels were assigned for the expansion and repurposing of existing assets. It was preferred that priority access should continue if a connection point is repurposed e.g. the installation of scale energy storage at the same connection point as a retired generator.*



11 submissions commented on the treatment of legacy generators of which:

- The majority supported assigning legacy generators the highest priority level for their full asset life.
- There were mixed views about a glide path:
  - It could restore poor locational incentives and reintroduce congestion.
  - It could add complexity and uncertainty.
  - Or it could help to balance congestion risk between existing and new entrants.
- Some stakeholders supported aligning the treatment of legacy generators with new entrants.
- ~ A third recommended excluding thermal generators from the highest priority. One stakeholder preferred on a technology neutral basis.

## Treatment of legacy generators and / or storage



### **Other feedback**

*2 submissions commented on the cut-off date to qualify as a legacy generator:*

- *A cut-off for full legacy status could be implemented sooner rather than later and then a period until the rule is made for partial legacy status.*
- *A common incumbency date could be set such that all generators that are operational now or at a set date in the very near future are assigned to the higher access tier, with projects connecting in the years following the incumbency date assigned to their respective queue positions or time windows.*

# SUMMARY OF SUBMISSIONS

CONGESTION RELIEF MARKET



- Stakeholders have broadly expressed support for the CRM and/or acceptance of the design choices.
- There was acknowledgement that the CRM:
  - has great potential to relieve congestion on the grid
  - improves dispatch efficiency relative to the status quo
  - represents an effective option for maximising the value of storage and loads in relieving congestion.
- Key concerns relate to:
  - maintaining the voluntary nature of the CRM - that is, if reliance is placed on the CRM to correct new inefficiencies introduced into the energy market through the implementation of priority access, stakeholders may be “forced” to participate in the CRM to achieve profits
  - implementation including the impact on solve times.



## Settlement residue

7 submissions provided comment of which:

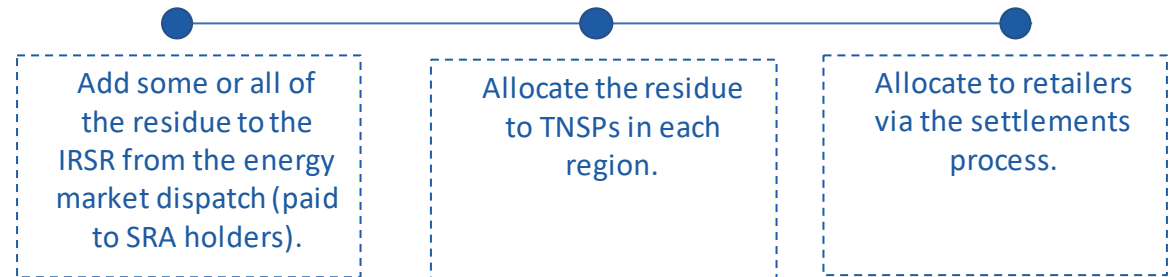
- Over half supported the addition of CRM settlement residues to the inter-regional settlements residue which would be allocated to settlements residue auction holders.
- One stakeholder proposed allocating the residue to “CRM participants”.
- The remainder preferred allocating to the CRM residue to consumers (either via TNSPs or retailers).

## Treatment of market network service providers (MNSPs)

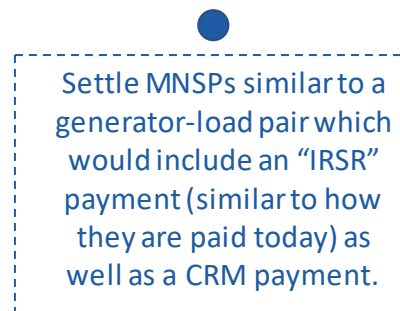
2 submissions provided comment on this design choice:

- Both submissions supported the proposed treatment of MNSPs as a load-generator pair
- One stakeholder sought clarification for MNSPs regarding:
  - whether the CRM remains voluntary to opt in
  - limiting impacts of counter-price flows in the CRM e.g. by applying market design concepts that already exist such as clamping and market floor price arrangements.

## Design choices for the allocation of the CRM residue



## Proposed treatment of MNSPs





## CRM bidding structures

9 submissions provided comment, of which:

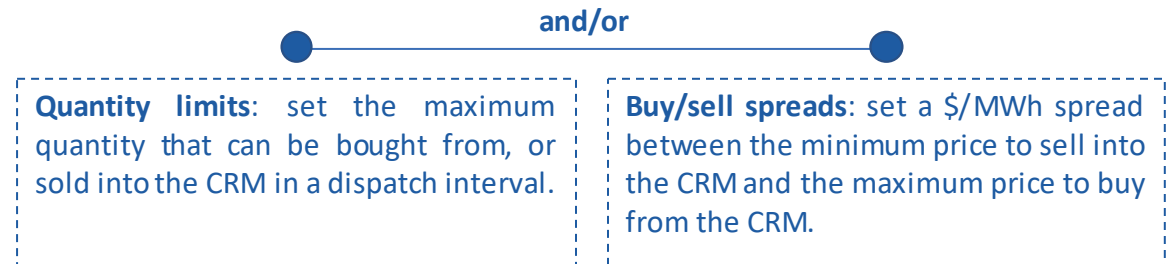
- The majority supported the proposed CRM bidding structures (both quantity limits and bid/offer spreads) noting the decision was subject to consideration of implementation costs.
- One stakeholder did not support CRM bidding structures believing they are not required or introduce unnecessary complexity
- One stakeholder proposed an alternate approach to introduce separate bid and offer stacks.

## FCAS bids and settlement

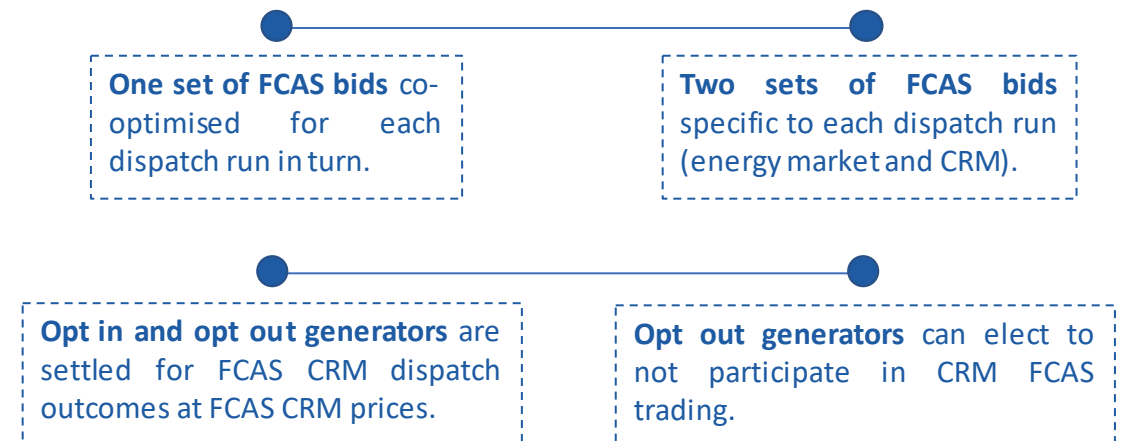
4 submissions commented on this design choice of which:

- All submissions supported the use of a single set of FCAS bids (rather than 2 sets of bids specific to the energy market and CRM)
- Two submissions supported an 'opt-out' for FCAS i.e. opt out decision applies to both energy and FCAS.

## CRM bidding structures



## FCAS bids and settlement





# VISUALISATION OF TAR PROTOTYPE

# INTRODUCTION TO THE VISUALISATION



- The ESB has created two prototype models to run scenarios for the transmission access reform package, including priority access and the CRM.
- These include:
  - A full NEM CRM prototype (CRM)
  - A seven node, two region, one FCAS model (priority access and CRM).
- The ESB has visualised a handful of scenarios in Power BI to highlight key messages for stakeholders at this stage of the design process.

The visualisation dashboards will be published on the ESB website:

<https://esb-post2025-market-design.aemc.gov.au/transmission-and-access>

*Note that the full NEM CRM prototype was previously demonstrated to TWG members on 23 May 2023.*

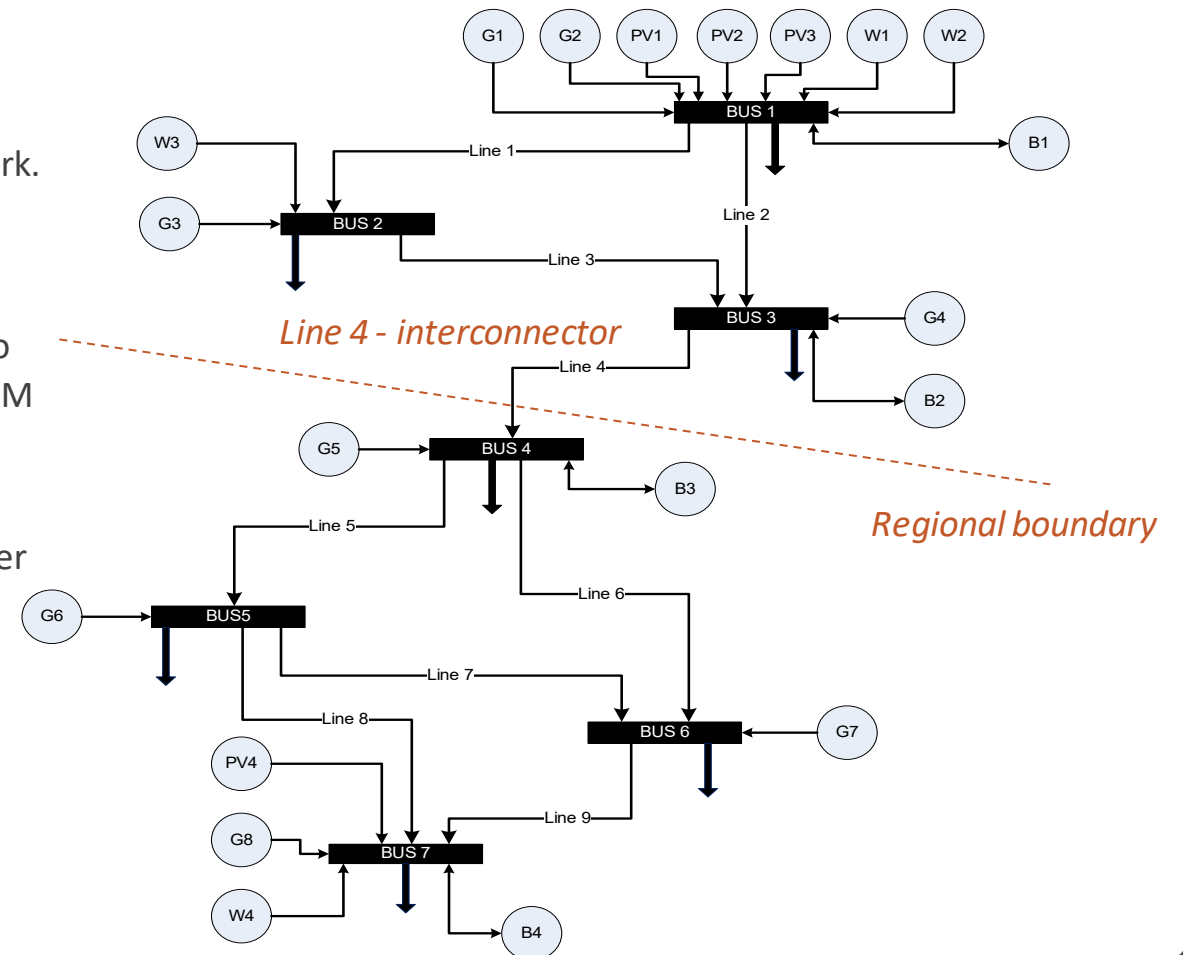


# INTRODUCING THE 7 NODE 2 REGION 1 FCAS MODEL



- The 7-node model is a fictional network topology including an interconnector between two regions (nominated as Qld and NSW for illustration only).
- The purpose of the model is to illustrate how EN and CRM dispatch of energy and FCAS, market pricing, settlement and priority access could work.
- The model comprises: 2 regions, 7 nodes, 9 lines, 16 generators and 4 batteries.
- The generators and batteries can make 2 price and quantity band bids into the EN and CRM and just one FCAS bid that applies to both the EN and CRM dispatches.
- The dispatch optimisation only uses steady state thermal constraints developed in a form similar to NEMDE constraints (there is also a DC power flow model which was used to check the NEMDE like dispatch and prices)
- Data inputs are hypothetical assumptions including generator SRMCs.
- The outputs are: EN and CRM energy and FCAS dispatches, RRP, power flows, CRMPs, EN settlement, CRM settlement, EN and CRM revenues, costs and profits.
- The EN outcomes can change based on the priority regime that is used.

## 7-node network topology



# ENHANCED INFORMATION

**PROCESS GOING  
FORWARD**



The ESB is submitting its policy recommendations to Energy Ministers which incorporates feedback from stakeholder submissions. Energy Ministers will meet on 7 July 2023.

Pending outcomes of this meeting, we will confirm next steps but we anticipate that we will continue to engage with the TWG.

We genuinely thank you for your inputs, insights and continued engagement.

## **Next meetings – to be confirmed**

~~27 July 2023~~ – cancelled

31 August 2023 – invite tbc

28 September 2023 – invite tbc

etc

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