17 November 2022

Ms Anna Collyer
Chair
Australian Energy Market Commission

Lodged via the AEMC website

Dear Ms Collyer,

PROJECT ERC0290: Operational security mechanism draft determination

The Clean Energy Council (CEC) is the peak body for the clean energy industry in Australia. We represent and work with hundreds of leading businesses operating in renewable energy and energy storage along with more than 7,000 solar and battery installers.

The CEC is committed to accelerating the decarbonisation of Australia's energy system as rapidly as possible, while maintaining a secure and reliable supply of electricity for customers.

We welcome the opportunity to comment on the AEMC's draft determination on the Operational Security Mechanism.

While we have significant concerns regarding the rationale for this mechanism and the process through which it has been developed, we are committed to building a collaborative approach to market reform. We will work with the AEMC and AEMO to improve the proposed OSM, so it is properly integrated into the planning frameworks and implemented in a manner that can deliver a decarbonised NEM at lowest cost to consumers.

The rest of this submission sets out proposals for detailed changes which we consider can improve the function of the OSM. In particular, we recommend that:

- AEMO must face stronger obligations to develop and use the OSM in a way that supports investment in zero carbon sources of system stability, to replace retiring synchronous thermal units.
- AEMO must also face stronger obligations to set a pathway for unbundling services and moving away from reliance on synchronous combinations, or '*system configuration services*', more generally. This is critical to maintaining overall system security, while managing costs for consumers
- New frameworks are required to properly integrate the OSM into the TNSP and AEMO planning frameworks. Failure to do so will mean lowest cost solutions are not considered, further increasing costs for consumers
- The OSM governance frameworks must be enhanced, to ensure there is adequate oversight over AEMO's design and use of the OSM. The Reliability Panel is best placed to play this oversight role. The Panel should be tasked with developing guidelines that AEMO must follow when designing and applying the OSM. The Reliability Panel should also be responsible for a 2 yearly review of the OSM.

Firstly however, we consider it is necessary to highlight the lack of underlying evidence justifying the OSM. The current approach of pushing through reform without justification or adequate evidence provided represents poor regulatory practice and must be called out where it occurs.

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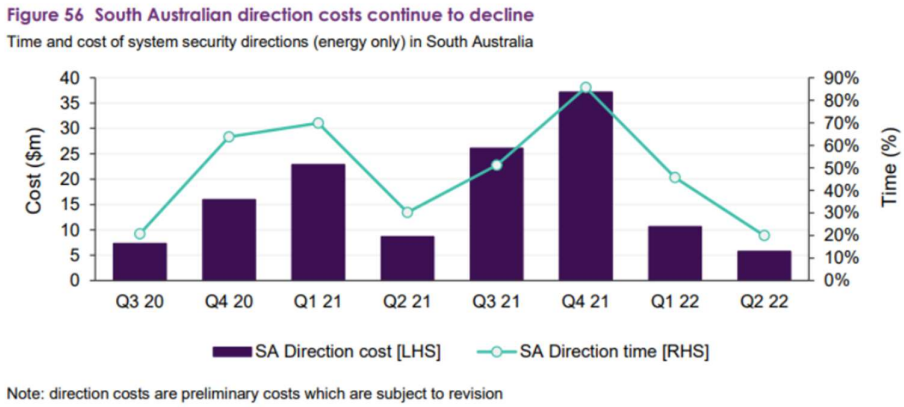
Why is this mechanism needed?

The current rationale for introducing an OSM is unclear. While the AEMC notes "there has been an upwards trend in the number of power system security directions that are occurring given the high penetration of IBR"[1], this is contradicted by empirical evidence.

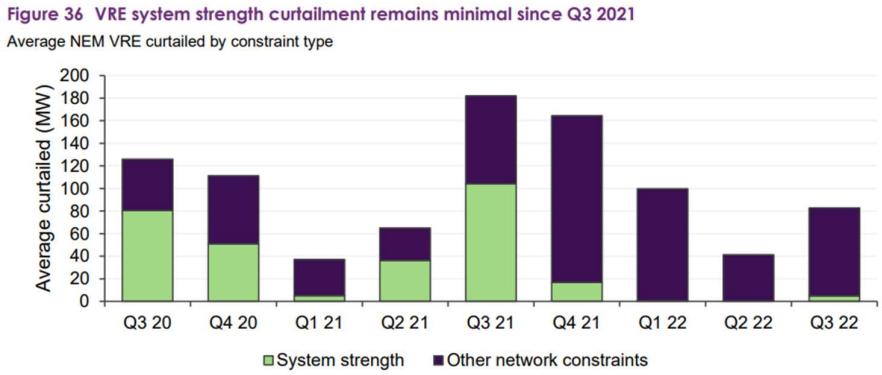
The Commission has based its assertion on figures from FY 20-21. This is unfortunate, as more up to date information clearly demonstrates the opposite. As shown in the figure below, time under direction in SA has actually decreased since the end of 2021. AEMO has stated this is related to synchronous condensers having commenced operation.[2]

Figure 1: AEMO reporting on system strength directions in South Australia.



More recent analysis confirms this ongoing trend. There has been a reduction in system strength related curtailment, largely due to the operation of the synchronous condensers in South Australia.[3]

Figure 2: AEMO reporting on decreasing system strength curtailment.



Beyond the limited historic analysis contained in the draft determination, there is no further evidence presented as to why the Commission is "mindful that these trends may be present in other jurisdictions,

[1] AEMC, Draft rule determination, *Operational security mechanism,* 21 September 2022, p.13.
[2] AEMO, *SA minimum synchronous generator requirements Stakeholder update package,* September 2022, slide 3.
[3] AEMO, *Quarterly Energy Dynamics Q3 2022,* October 2022, p.28

and so considers it important to get ahead of this occurring."[4] The AEMC is convinced that "the continued use of high numbers of directions" is a likely future outcome, where no evidence has been presented as to why this is the case.[5]

The Commission should also explain why AEMO will need to procure additional *system configuration services* through the OSM, given the rollout of the system strength frameworks. As demonstrated by AEMO's own analysis, system strength solutions like the SA synchronous condensers can effectively maintain general power system stability and have directly contributed to a reduced number of directions and reduced number of thermal synchronous units required to be online.[6]

The system strength frameworks also require generators to share the costs of assets that stabilise the system, helping to reduce the costs borne by customers.

As system strength solutions are proactively rolled out in other jurisdictions, it's likely that what has happened in South Australia will continue across the NEM. It's therefore unclear why the OSM will be needed, other than to schedule any system strength contracts entered into by system strength service providers. Certainly, it seems unlikely AEMO will need to procure meaningful volumes of additional *system configuration services*.[7]

The AEMC also makes repeated reference to insufficient "current engineering knowledge" as a rationale for an OSM, however this is never properly explained. The fault here lies with AEMO, who have not provided sufficient evidence or reasoning as to why this mechanism is required and why more granular service unbundling cannot progress. However, its nevertheless disappointing the AEMC has not pushed AEMO to provide this evidence.

For a reform that has the potential to significantly alter the operation of the NEM, its disappointing that no real qualitative or quantitative empirical evidence has been provided to justify its introduction. It's therefore difficult for industry to collaboratively participate in development of this mechanism, especially when alternative options have not been properly considered.

This is not the way NEM reform should be conducted. Recent years have seen empirical, evidence-based reform replaced with ideological quests for various solutions, whether they be ahead markets, nodal pricing or capacity markets. This is a flawed way of reforming the power system, wasting time and resources while far more pressing reforms are delayed.

Pursuit of these reforms is contributing to the fragmentation of the NEM. The federal and multiple state jurisdictions are becoming frustrated with this approach and are going their own way, introducing their own reforms to transmission regulation and the connection process as well as finding ways to drive storage investment and system stability services more generally.

The AER, AEMC and AEMO should note that this fragmentation is a direct outcome of the time wasted on the quests for capacity markets, nodal pricing and ahead markets.

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[4] AEMC, Ibid.,
[5] AEMC, Ibid., p.x
[6] AEMO, *SA minimum synchronous generator requirements Stakeholder update package,* September 2022
[7] We acknowledge that the OSM might be used in a few niche cases, such as by supporting system resilience during high risk periods or helping to maintain system stability during planned outages.

Nevertheless…

The CEC acknowledges the criticality of maintaining system stability. This is fundamental to delivering a reliable supply of energy to consumers.

However, this must be consistent with decarbonisation of the power system. Regulatory reform must be purposefully and carefully structured so as to be consistent with this overarching reality – a reality that will shortly be a legislated requirement in the NEO.

The current design of the OSM falls short of this requirement. As it is, the OSM will prolong the life of thermal generation, while failing to incentivise investment in replacement zero carbon sources of system stability. In brief, the issues we have identified with the current OSM design include:

a) There is a need for stronger investment signalling, which is best achieved by imposing formalised and explicit obligations on AEMO and NSPs
b) There are missing regulatory structures to ensure system stability is properly addressed through the planning processes, to ensure the most efficient system stability solutions are discovered
c) Certain design choices of the OSM, such as the timing of gate closure and defining the meaning of "maximising value of trade", require further work to ensure the mechanism will operate as intended

Despite industry disappointment that other solutions have not been adequately considered, and the lack of reasoning or empirical evidence justifying the mechanism, we recognise that AEMO and the AEMC have decided the OSM will be implemented.

On that basis we will work with the AEMC to drive amendments and improvements to make the mechanism fit for purpose in a decarbonising power system. We trust AEMO and the AEMC will engage with industry in a genuine and collaborative manner, to get the best possible outcome through this reform.

Obligations on AEMO to facilitate the transition to zero carbon system stability

To begin with the positive, there are some reasonable elements of the general OSM design. For example, and as discussed in further detail later in this submission, the general direction of moving gate closure closer to real time is a positive, as is the iterative nature of OSM scheduling. The approach to scheduling system strength contracts through the OSM (as per earlier Unit Commitment Scheduler designs) represents a sensible outcome as well.

Allocating the cost of the OSM to consumers is another sensible design choice. This represents the most efficient way to allocate costs and is likely to provide the greatest discipline on AEMO to minimise the cost of the OSM. It also highlights the preferability of the system strength framework for delivering general power system stability, on the basis that this framework actually allows for costs to be shared between consumers and generators.

However, allocating costs to consumers means more effort is required to ensure the mechanism minimises costs. The best way to minimise consumer costs is to facilitate truly effective competition. ***This in turn requires rapid investment in new sources of system stability***.

Maximising competition and driving new investment is best delivered by:

a) **Instituting workable market power controls, as a backstop.** While the CEC will not comment in detail on the merits or otherwise of the proposed market power proposals, we understand there are some concerns as to the workability of these mechanisms. The AER must be comfortable with the proposed mechanism; however it appears a lot of further work is required here. Care must also be taken that any imposition of regulatory controls does not have the

inadvertent effect of suppressing prices and discouraging investment, therefore continuing AEMO's reliance on the use of existing synchronous combinations.

b) **Adequate obligations and incentives on AEMO.** More effort is required to ensure the monopsony buyer is sufficiently motivated to develop and procure new stability services, rather than continuing to rely on 'tried and true' solutions – that is, continuing to rely on combinations of synchronous thermal generators to maintain operability. There are several aspects to this, which are explored in more detail in this section.

c) **Strengthening the links between operational outcomes and the planning process.** The CEC considers the system strength frameworks, and the planning processes more generally, are the preferable pathway to delivering long term power system stability. The planning processes are directly subject to the economic oversight of the AER. Beyond that, networks are able to access the full suite of solutions to address system stability. Both of these factors will deliver lowest cost solutions over time; the system strength frameworks also mean that generators will even bear a portion of this cost. Currently however, there is no formal feedback loop from the use of the OSM into the planning processes. This creates significant risks of inefficient outcomes and higher than necessary costs for consumers.

Adequate obligations and limitations on AEMO

There are a number of areas where the draft rule does not do enough to encourage provision of system stability services in a manner that is consistent with decarbonisation. Stronger obligations must be developed and applied through the NER, to ensure that system services will be delivered at the lowest possible cost to consumers in future.

This section explores the various needs that have not been adequately addressed in the draft rule and suggests ways these could be met.

The need to move away from synchronous combinations

AEMO is required to operate the power system in a manner that keeps it within the technical envelope, and where it will remain within that envelope for credible contingencies. This takes into account the various physical limits of the power system which are calculated by NSPs and AEMO.

In South Australia, AEMO's operational approach has been to utilise power system modelling to determine various system configurations of generation and network assets, where the system can be shown to be operating in a stable manner. These configurations have historically been for combinations of synchronous assets. Directions have applied where necessary to ensure these combinations are met, while volumes of non-synchronous generation have been curtailed.[8]

We understand that AEMO may need to calculate (if it is not already doing so) similar synchronous combinations in other jurisdictions. It's argued that as some synchronous units are removed from service in other jurisdictions, directions may again be needed to ensure minimum remaining synchronous combinations are online in order to maintain general power system stability and operability. It is also argued that relying on the manual process of direction would be inefficient in this case.

Putting aside the fact that no evidence has been presented as to when AEMO would need to be issuing directions in these other jurisdictions, it seems likely AEMO will continue to operate the power system on the basis of combinations of synchronous units for the foreseeable future. However, this may lead to an over-reliance on those known synchronous combinations. Specifically, over reliance on PSCAD

[8] Note that this situation is improving rapidly as the four SA synchronous condensers have come online.

modelling of the power system, which is itself highly theoretic and which may miss out on the insights available from applied field engineering, is likely to drive operators to insert artificial 'buffers' into the system. This will come at a cost to consumers, especially if those buffers are not made fully transparent to the market and to consumers.

This over reliance on known synchronous combinations to provide system buffers is likely to worsen if the units that make up these synchronous combinations exit sooner than expected. This is a material risk, given that the rate of retirement of synchronous thermal units is accelerating, as evidenced by the recent announcements of the bring forward of the Eraring and Loy Yang A unit retirements. It's likely other units will follow, especially given increasing shareholder advocacy. Its also possible that the catastrophic failures seen at the Callide units may be repeated. Finally, state-based initiatives will also accelerate these retirements, as evidenced by the recent announcements from Queensland and Victoria.

It's imperative that AEMO is required to rapidly move away from this reliance on synchronous combinations. A failure to do so will bring with it increased price risk for consumers. The shrinking market for synchronous combinations will likely lead to greater opportunities for exercise of market power, with the associated risk of high prices and costly regulatory intervention. This situation would be worsened by any unplanned exits of thermal units.

It follows that AEMO must face strict statutory obligations to get ahead of this situation, to ensure customers do not face higher energy prices. The only way to achieve this is by doing everything possible to encourage further investment in replacement sources of system stability, from zero carbon assets.

The need for the AEMC to overhaul its analytical frameworks

Achieving this goal of driving new investment also requires the AEMC to change the way it assesses rule changes – and specifically this rule change. This is the critical first step needed to encourage AEMO to get ahead of synchronous thermal generation retirement and work with industry to drive investment in replacement zero carbon sources of system stability.

Firstly, the AEMC must move away from the underlying theoretical assumption that market competition in the OSM will, in and of itself, drive efficient investment. The OSM is not a market in the true sense of the word – primarily as there is a single monopsony buyer who is not subject to any meaningful form of oversight. As acknowledged by the AEMC, the OSM is also likely to be a relatively shallow market when it starts, with a small number of incumbent players who may have market power, the very presence of which is likely to discourage new entry. In an of itself, this is not the kind of 'market' that is likely to prove attractive to investors.

Furthermore, there is limited incentive for AEMO to explore and develop new solutions, and to support industry in bringing forward the necessary investments. This lack of underpinning regulatory requirements will mean there is limited investment signal provided through the OSM, at least in its current form.

Secondly, the AEMC must resile itself from its flawed historic attachment to 'technological neutrality'. There are two types of technology when it comes to a stable and secure NEM transition; technologies that emit carbon and those that don't. Noting the NEO will shortly be changed to reflect this, the AEMC must abandon the false notion that gas or coal generation should be treated equally to wind, solar and hydro.

Finally, the AEMC should recognise that economic theory must be tempered by physical reality. More specifically, market design must follow the physical realities of decarbonisation and the new technologies driving it, rather than the other way round. It may be possible to return to this model one day, but the urgency of the current physical transition requires a different approach for now.

Given the above, we consider the architecture of the OSM must be overhauled to ensure there is sufficient investment in zero carbon sources of system stability. We have proposed some detailed changes to the current OSM design, to ensure it purposefully favours and focusses on driving investment in zero carbon sources of *system configuration services* or preferably, unbundled *separate security services.*

Approach to driving investment in zero emission stability services

The existing drafting of the OSM sets out the groundwork for how we might drive increase the likelihood of efficient investment in zero carbon system stability assets.

For example, acknowledging emissions intensity could occur at the level of the underlying OSM objective. This would make it clear to AEMO that it must do all it can to reduce the emissions intensity of the generating fleet when designing and operating the OSM.

Specifically, the existing drafting could be amended to include:

a) a separate subclause in draft rule 3.7G.2, which explicitly requires the OSM to be developed in a manner that is consistent with reducing emissions.
b) for example, the objective could be amended to include an explicit focus on driving efficient investment in assets on the basis of their emissions intensity

Alternatively, an overarching objective could be included in draft rule 3.7G.4, which describes the Security Services Guideline, to require AEMO to focus on procurement of system configurations that minimise:

a) the emissions associated with the underlying configuration of assets and
b) the overall emissions intensity of dispatch over a defined period.

Finally, the OSM annual report described in draft rule 3.7G.12 should be amended to include reporting from AEMO on how:

a) it has explored options in its procurement of *system configuration services* that focus on minimisation of emissions across the reporting period
b) specific opportunities that have arisen whereby zero carbon solutions could be brought forward by industry to meet system needs
c) it has worked with industry to accelerate the development of these solutions

As the AEMC well knows, the NEO will shortly be amended to account for emissions reduction. It is therefore critical that more specific obligations are placed on AEMO to reflect this. A failure to do so will likely make the OSM non-compatible with the amended NEO when it comes into operation in 2025. Rule changes to the OSM's function would therefore likely be required to make it consistent with the NEO.

Encouraging unbundling

The CEC also considers AEMO should face stronger obligations to unbundle the services that it procures through the OSM. Investment is best enabled where there is greater clarity regarding specific system needs; this is at its core the nature of an 'unbundled service'.

Draft rule clause 3.7G.12(b)(3)(iii) represents a good start to this process of unbundling. However, stronger requirements should be imposed on AEMO, potentially again through the Security Services Guideline.

As an example, AEMO could face a specific objective in the security services guideline to prioritise the development of *separate security services* over *system configuration services*. Similarly, a new clause

could be included in subclause 3.7G.4 to set out a process whereby it must establish a pathway for splitting out *system configuration services* into *separate security services.*

More generally however, the best way to maintain the momentum to unbundling is for the AEMC to accelerate its various rule change processes currently underway. In particular, work should be accelerated on the *Operating reserve markets* and *Efficient provision of inertia* rule changes. These rule changes represent the best way that services can be portioned out of the bulk *system configuration services.*

The need for standards

Finally, AEMO's procurement of these services should be subject to some form of standardisation. This is the approach followed in all other system service markets, irrespective of whether these services operate in the planning timeframe (system strength and system restart ancillary services (SRAS)), or in the operational (frequency control ancillary services (FCAS)).

Standardisation is applied because AEMO is not subject to any form of economic oversight. Unlike NSPs who are subject to the oversight of the AER, the only real limitation that guarantees value for consumers are the regulatory standards and objectives that AEMO must adhere to when procuring SRAS or FCAS. These standards are developed in the basis of economic efficiency and are themselves subject to robust oversight by the Reliability Panel.

There is no clear reasoning or evidence provided by the AEMC as to why some form of standard has not been developed for the OSM. This brings with it a degree of uncertainty as to how the OSM will be used in practice, and what the implications are for operational and investment markets. This creates increased risk, the cost of which will be borne by consumers. This is especially problematic as the objective of using the OSM to "maximise the expected value of spot market trading" in the OSM objective is entirely unclear in terms of its application and potential magnitude.

Noting this uncertainty, it follows that further detail should be provided as to how the OSM objective is expected to play out in practice. This should be provided through the development of Reliability Panel guidelines around how AEMO will utilise the service, in a similar manner to RERT.

Processes to ensure system stability are best addressed in the planning processes

Historically either AEMO or NSPs have been the procurer of system services to maintain power system stability. Both parties face some form of oversight, although this is more limited for AEMO.

There are good reasons for selecting either party to have this responsibility, for different use cases. However, in the case of maintaining system strength and more general power system stability, we consider that NSPs as procurer is more likely to result in lower costs for consumers.

This is on the basis that NSPs are subject to formal regulatory processes and a fully resourced economic regulator, helping to maximise transparency to investors while minimising the risk of cost blow out for customers.

In addition to their role as procurer, NSPs are also responsible for building or procuring solutions to maintain system strength and stability. This allows NSPs to explore the full range of solutions to provide these services, including transmission assets or synchronous condensers, as well as non-network solutions from generators or storage providers. This latter offers private investors the opportunity to develop zero carbon stability services, while receiving a stable revenue stream through a long-term contract – a revenue stability that is not provided given the significant uncertainties in the OSM.

More generally, sustainable procurement of system stability services is most likely to be achieved through the network planning processes. The Annual Planning Report (APR) / Integrated System Plan (ISP) framework, accompanied by AEMO publications like the Electricity Statement of Opportunities (ESOO), provide investors with clear, effective information to enable efficient decision making.

It's therefore disappointing the AEMC has not properly integrated the OSM into the network planning processes. While the draft determination briefly acknowledges the interaction between the OSM and the planning frameworks this is not reflected in actual rule drafting. For example, the AEMC notes that:[9]

"AEMO could use this as an input into the ISP or other related planning reports such as the Generalised Power System Risk Review or documents that set out inertia shortfalls which may look at potential solutions. Alternatively, TNSPs could look at potential solutions in their Annual Planning Reports (APRs) or a subsequent RIT-T. The OSM could provide valuable information into these processes, for example, costs incurred through the OSM may provide the justification for additional network investments that alleviate costly constraints, thereby reducing the OSM's operational costs. For example, if maintaining system security in a certain region is particularly costly, the OSM may provide justification to install network equipment that may alleviate the need to schedule expensive units. In such a situation, a longer-term investment may be in the best interests of consumers compared to continuing to operationally manage the system security issues."

This is all true, however the repeated use of 'could' and 'may' throughout this sentence demonstrates the ineffectiveness of the AEMC's current position. These outcomes are too important to rely on best wishes.

The AEMC must therefore develop formal obligations on AEMO and NSPs to account for the outworking of the OSM in the planning processes. This requires an entire new section of drafting to be developed, in Chapters 5 and 3, and should include introduction of a formal NER obligation for:

- more detailed reporting obligations on AEMO through the OSM annual report to assess exactly what system configurations (which underpin the *system configuration services*) were activated, and how this influenced customer costs. This should include more granular reporting obligations in draft NER clause 3.7G.12(b)(2).
- in addition to the above, integrate the outcomes of the OSM into AEMO's annual constraint report, to identify all of the specific constraints relieved by the use of *system configuration services,* including the shadow price of each of those individual constraints. This reporting must be in addition to the OSM annual report, given its increased granularity.
- AEMO to be required to clearly identify opportunities for new investment to address the key *system configuration services* and related constraints identified in the OSM annual report and the constraint report, through the Electricity Statement of Opportunities. AEMO must be required to identify these opportunities through the ESOO, on the basis that generation and storage investment will likely contribute to providing system stability services at the lowest cost.
- formal requirements for NSPs to assess the out workings of the OSM in their APRs. This must include rigorous obligations for NSPs to assess each of the key combinations identified by AEMO through the OSM annual report and constraint report, and to demonstrate why they have or have not addressed each of those combinations through application of the RIT-T
- Introduce a formal obligation for AEMO Planning to consider the out workings of the OSM in the development of the Integrated System Plan (ISP), as well as any projects to manage the OSM as identified by TNSPs through their APR processes.

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[9] AEMC, p.89

Further suggestions on application and design of the OSM

In addition to the points raised above, the CEC considers the following changes are required to the application and design of the OSM.

More work is required on describing use cases: The CEC considers the AEMC may better make its case for the OSM if it was able to illustrate some use cases of the mechanism.

For example, could the OSM be used to maintain system stability during planned outages? The CEC understands that last minute cancellations of planned outages have imposed costs on generators and impacted NSPs' ability to undertake necessary works. Could the OSM be used to manage outage related stability constraints and therefore allow the original outage schedule to be met?

Similarly, could the OSM be used to increase system resilience during periods of increased risk, such as during extreme weather or bushfires? Working in with the expanded AEMO protected events and indistinct events / reclassification processes, the OSM may form a useful tool to reduce system risk.

Describing these use cases would help illustrate how and why the OSM could increase consumer and industry value.

Formal requirements on AEMO to move gate closure and cut off closer to real time and structure of OSM blocks. The CEC agrees with the AEMC's general position that gate closure and cut off should be brought closer to real time, and that OSM blocks and horizons ought to be shorter. More generally we agree with the AEMC's general policy design in terms of consistent cut off times for all technology types.

However, we again stress that these general policy directions must be codified in the NER, to ensure there is a formal obligation on AEMO to bring gate closure and cut off closer to real time and shorten OSM blocks, to reflect changing technological realities. This element of the OSM's design is critical to ensuring operational efficiency and delivering lowest cost for customers, as well as recognising and valuing the capabilities of new, more faster acting technologies such as battery storage.

Noting AEMO's likely tendency to continue to rely on synchronous thermal generation combinations, which are naturally benefitted by a longer gate closure/cut-off and less granular blocks, it is imperative that AEMO be formally obligated to transition towards shorter gate closure / cut-offs and shorter blocks.

The CEC does not consider specific values for these should be defined in the NER, on the basis that operational realities will change over time. However, we consider the NER should be amended so that:

- An additional sub clause in draft NER clause 3.7G.11(b)(8), formally requiring AEMO to move the *OSM gate closure* and cut-off as close to real time as possible
- An additional sub clause in 3.7G.12 requiring AEMO to report on measures it has taken to move the *OSM gate closure* closer to real time in the preceding year
- Related new clauses to shorten load block structures

Further consideration given to fixed and enablement costs: The CEC understands that some stakeholders have raised query with the effect of locking in enablement costs at the time of gate closure, and how this fixed revenue will be 'zeroed out' against energy market revenue. While the AEMC notes that these opportunity costs may be accounted for in OSM bids, further work is needed to assess the relative benefits to customers.

Specifically, the AEMC should undertake some quantitative analysis to assess whether consumers will face lower overall OSM and energy costs if:

- enablement costs are fixed at gate closure and include a risk premium to account for the opportunity costs of foregone energy revenue associated with any 'fixed' volume of capacity in the enablement offer; or
- enablement costs are defined as a floor offer and can be readjusted post gate closure to reflect changed energy market conditions

The CEC does not have a view on this choice at this time, however we consider it warrants further analysis and quantification by the AEMC.

Further work is required to assess the OSM in action. The CEC notes the high-level qualitative description of the OSM function contained in Chapter 4, including the P/Q charts that describe the economic function of the OSM. This not an entirely new concept, having been defined in the original minimum inertia and fault current rule changes, and then again in the FTI analysis underpinning the ESB's ESS work.[10]

The complexity underpinning such qualitative descriptions lies in firstly determining the exact angle of the sloping component of the demand curve and secondly (and even more importantly), deciding who gets to define it. These two decisions have significant implications for consumer costs and benefits.

To inform the sloping component of the demand curve, the CEC suggests that further work is required to define what type and how many constraint sets are likely to be captured under the OSM, once it is engaged to maximise value of trade. This means the AEMC and AEMO must explain exactly what constraint types will be captured under the general description of system security. Colloquially – what's the size of the pie?

For example, does the OSM relieve all thermal, voltage and oscillatory constraints? Does it account for FCAS constraints as well? How are outage constraints treated? If an outage constraint then results in a security constraint binding, is this captured under the OSM as well?

Further work is also required to determine how and whether AEMO would have the ability select these constraints, and whether and how they could be shifted in and out of the OSM. This is critical to answering the question of 'who decides'.[11]

Oversight and governance: The CEC considers the oversight and governance frameworks of the OSM require strengthening to ensure the mechanism delivers value for consumers. We have set out a number of recommendations in the sections above on how this might be done, primarily around increasing AEMO transparency around moving to unbundled and decarbonised sources of system stability and improving the investment signalling frameworks.

We also have recommended that the Reliability Panel be tasked with developing guidelines as to how AEMO should interpret and operationalise the OSM Objective. This approach would be consistent with other guidelines and standards developed by the Reliability Panel, such as the Reliability and Reserve Trader, Reviewable Incident and Intervention and Reserve guidelines. The Panel is well placed to provide this guidance to AEMO, as it has extensive experience in making the kinds of techno-economic trade offs that are relevant to the OSM function.

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[10] The CEC welcomes queries from AEMC staff as to the extensive thinking that has preceded this rule change, on the description and valuation of system services.

[11] Or as Karl Popper might frame it "how do we put in place mechanisms to reduce the risk the deciders make poor decisions".

Similarly, we do not consider the AEMC to be the appropriate party to undertake a four yearly review of the OSM. Instead, this should be a 2 yearly process undertaken by the Reliability Panel. A shorter time period is critical for this review, on the basis that the OSM has significant potential to change outcomes in operational and investment markets. These impacts must be assessed on a more regular basis, to prevent unforeseen consequences becoming more severe. The Reliability Panel is better placed than the AEMC to undertake this analysis as through its industry and consumer representative members it will have direct experience and understanding of the application of the OSM, as well as the requisite knowledge to propose changes to address any identified issues.

As always, the CEC welcomes further engagement from the AEMC and AEMO on this reform. Further queries can be directed to Christiaan Zuur at the CEC on czuur@cleanenergycouncil.org.au

Kind regards

Christiaan Zuur
Director, Energy Transformation