
November 17th 2022

AEMC

Submitted via Website

Iberdrola submission to 2022 Review of the Frequency Operating Standard

Iberdrola Australia welcomes the opportunity to make a submission. Iberdrola Australia delivers reliable energy to customers through a portfolio of wind capacity across New South Wales, South Australia, Victoria, and Western Australia, including both vertical integrated assets and PPAs. Iberdrola Australia also owns and operates a portfolio of firming capacity, including open cycle gas turbines, dual fuel peaking capacity, and battery storage. Our development pipeline has projects at differing stages of development covering wind, solar and batteries. This broad portfolio of assets has allowed us to retail electricity to over 400 metered sites to some of Australia's most iconic large energy users.

Iberdrola Australia is part of the global Iberdrola group. With more than 120 years of history, Iberdrola is a global energy leader, the world's number-one producer of wind power, an operator of large-scale transmission and distribution assets in three continents making it one of the world's biggest electricity utilities by market capitalisation. The group supplies energy to almost 100 million people in dozens of countries, has a workforce of more than 37,000 employees and operates energy assets worth more than €123 billion.

Background to the Operational Security Mechanism (OSM)

Ensuring a reliable, secure, and affordable system is critical. The Draft Determination presents a mechanism for providing AEMO with short-term tools for managing system security requirements that they have not yet identified, as well as scheduling the system strength resources procured through the system strength framework rule change.

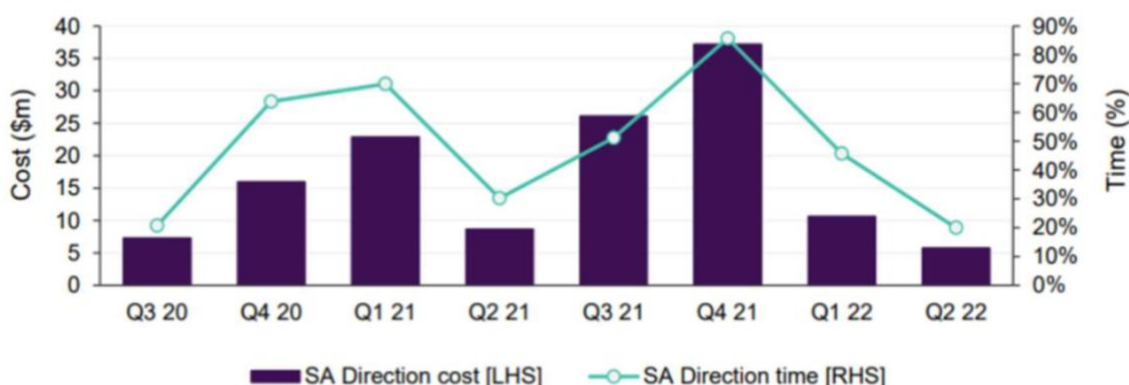
Iberdrola understands that AEMO's advice is that current modelling capabilities allow for identifying combinations of units that deliver a secure system, but not necessarily what specific attributes of those units deliver it. As such, AEMO has recommended that the OSM allow for the procurement of specific combinations of (typically synchronous) units if required for system security.

Under the proposal, AEMO will develop a new tool to run regular cooptimisations of non-market and market services. This will particularly include “binary” services like system strength and possibly inertia, but could also include other services that are not already covered by spot markets or incentive arrangements. System services will be procured as close to real-time as possible, rather than the “day ahead” market previously proposed by the ESB.

AEMO has highlighted the OSM as an essential alternative to directions, which is the only way to currently activate non-market services. However, we do note that most directions to date have been due to system strength limits in South Australia which have been addressed by the System Strength Rule Change. Based on the RIT-T for the SA synchronous condensers and the development EnergyConnect, we expect directions will not be required longer term for system strength. Future services to be procured have not been defined by AEMO, but may again be combinations of synchronous units in one or more regions.

Figure 1: Reducing directions in South Australia¹

Figure 56 South Australian direction costs continue to decline
Time and cost of system security directions (energy only) in South Australia



Note: direction costs are preliminary costs which are subject to revision

Overview of our submission

The technical aspects of the OSM design are well considered, and it avoids the significant challenges of a “day ahead” market by using close to real time decisions supported by pre-dispatch information. We consider that the Reliability Panel would be well suited to determining appropriate gate closure times.

However, as currently presented, the Draft Determination does not provide sufficient transparency to ensure that sufficient resources will be developed and delivered in a

¹ AEMO, SA minimum synchronous generator requirements Stakeholder update package, September 2022, slide 3.

timely fashion. In particular, in sufficient time to manage the expected and unexpected closures of existing synchronous units. This could mean:

- Costly and protracted disruptions, as has occurred in South Australia following the closure of the last SA coal power station, if appropriate replacement resources are not identified and developed in advance;
- Incumbent coal power stations may be constrained on for longer, risking the success of jurisdictional emissions reduction targets; and
- Material and costly risks of market power, if only a small number of units are eligible to participate in a constraint.

We further note there is an “information asymmetry” where AEMO and TNSPs are the only parties able to model emerging constraints. It is challenging for investors (and existing participants) to identify when or where value could be delivered. The greatest risk to system security (and costs to consumers) would be if the OSM leads to “complacency” in the market (e.g., an overreliance on existing units) and a lack of signals for delivering the required services long-term.

However, if additional Rules-based obligations (as described below) are implemented to provide clarity to investors and market participants, the OSM could provide a framework for AEMO to schedule resources while i) AEMO undertakes further modelling of the required services in the future and ii) investors develop replacement resources. The AEMC’s approach seems broadly to be fit for purpose for managing *short-term* scheduling decisions, and includes several thoughtful elements. Some specific comments and suggestions are provided below.

Iberdrola Australia’s preference is to rapidly move to unbundled services, and we recommend that AEMO focus its resources on the technical engineering requirements for operating the grid. We note that directions in South Australia have continued to fall.

To date, AEMO has not identified specific constraints or unit combinations (and their underlying motivations) that would be activated under OSM outside of South Australia, which makes it difficult to critically assess the proposed scheme. However, we consider that the interests of consumers would be best served by unbundling services where possible (for example, inertia) and then procuring additional services through either an explicit market or an expansion of the system strength framework. That framework has already been rigorously consulted on, and was developed specifically to avoid the challenges of a thin spot market. This ensures that prices reflect the lower of short-run and long-run delivery costs, and can help deliver new resources.

Key recommendations

Our key recommendations (which do not necessarily conflict with the AEMC’s Draft Determination) are:

- Iberdrola Australia can only support the proposed OSM (in an operating timeframe) if it is coupled with Rules based obligations to facilitate transparency and investment on investment timeframes.
- The OSM must include an obligation on AEMO and TNSPs to publish what *new* resources could participate in constraints. This will help guide co-optimised investments (including location, technology, and timing) and ensure that the system is resilient to unexpected closures or unit failures.
 - The natural place for this is in the Electricity Statement of Opportunity publication, as investors seek to co-optimize the delivery of energy and other services
 - It should apply to each unit combination/constraint, be specific (i.e., provide enough information to investors to guide technology and locational decisions) and include at least one zero emissions investment option (or an explanation of why such options cannot work).
 - Frameworks should also incentivise AEMO to identify constraints in advance of them being required/binding.
- Any new system security constraints implemented by AEMO should be followed by publishing open and detailed reporting on the modelling, reasoning for the constraints, and identifying how those constraints could be relieved.
- AEMC, AEMO, and the TNSPs should move quickly to identify and unbundle essential services, and procuring them through efficient spot markets (where appropriate) or through expanding the remit of the system strength framework (providing planning signals and investment certainty for non-fungible services (e.g., unit combinations).
- Unpredictable and unhedgeable non-energy costs to market customers must be minimised. For market customers to have certainty over forward costs, all or most of the cost of emerging system services (including system strength) should be procured through contracts not OSM.
 - The proposed approach is consistent with these principles, as it avoids the OSM paying for what would have happened anyway.
- OSM services should be procured as close to real-time as possible, which is consistent with how participants currently manage risks. This avoids the material risks and costs of ahead procurement.
 - Given that gate closures in particular address a cost and risk question, it would be appropriate for the Reliability Panel to have responsibility for this setting.
- The Rules should explicitly exclude activating the OSM for *reliability* purposes. For example, unit commitment decisions, ramping constraints, or the reservation of fuel as it impacts on unserved energy are all signalled through the energy market (e.g., through pre-dispatch and PASA) and should remain participant decisions. Directions provide a framework for intervention if deemed necessary, and we are not aware of any instances under normal market operation where centralised dispatch would have resulted in improved reliability outcomes.

- Similarly, the Rules should exclude any service for which a spot market already exists, or which would otherwise substitute for the existing energy or FCAS markets, or PFR incentive arrangements (for example, AEMO should not be permitted to procure headroom on assets to provide PFR or FCAS, as this will distort market investment signals). This must be made explicit in the Rules if participants are to invest on the basis of market signals.
- Further detailed design work should be done on modelling an appropriate objective function and trigger to avoid unintended consequences (e.g., central dispatch by accident). AEMC should work with AEMO to publish the indicative constraints/unit combinations that would be implemented in 2025 and consult with the Technical Working Group before a Final Determination.
- The terms of reference for AEMO's Integrated System Plan should be updated to also include system security services, so that investment in transmission and other resources are conducted consistent with AEMO's expected operation of the grid.
- We also support the recommendations and issues raised in the Clean Energy Council's submission.

We look forward to continuing to engage with the AEMC on this project, and developing future frameworks to deliver efficient system services. Further comments supporting our submission are provided below. Please don't hesitate to contact me on 0411 267 044 or joel.gilmore@iberdrola.com.au to discuss our submission.

Sincerely,

Joel Gilmore
GM Policy & Regional Energy

Supporting and more detailed comments

Need for formal obligations on forward planning

AEMO must have a clear plan for transitioning away from any units that are at risk of closing (i.e., incumbent coal) *before* such closures are announced:

- While many units are currently modelled as operating for the next decade, it is highly likely that they will close faster than anticipated – either due to technical failure or in growing recognition of climate change constraints.
- In practice closure dates are not known in advance, and lead time is required for modelling, development, financial close, construction, and commissioning.

- The South Australian experience has demonstrated has shown how expensive, disruptive, and time consuming it can be if a clear plan for replacement system services is not in place.

If OSM is implemented, it must be accompanied by an obligation in the Rules for AEMO to publish the how new entrants could participate in or relieve any OSM constraint that is used on more than an ad hoc basis (e.g., more than a certain number of hours or total dollar value per year) or is projected to be used so in the future.

For investors, this cannot be at a high level discussion plan; rather, it needs to be a technical specification where AEMO identifies specific resources (e.g., specifications for grid forming batteries, synchronous condensers, etc.) that could provide the same services (e.g., participate in the unit combination or constraint).

Iberdrola Australia therefore can only support the proposed OSM (in an operating timeframe) if it is coupled with a Rules based obligation to deliver the above reporting (to allow for investment over the investment timeframe). These obligations cannot be left to subsequent Procedures, or to AEMO's discretion. Ensuring a smooth transition of system services will be critical for delivering jurisdictional renewable schemes.

Transparency on constraints

Critically, no market participant has visibility of the details of AEMO and TNSP's modelling, and very limited ability to replicate, anticipate, or review new constraints. This can result in material costs that impact on current and future investment decisions. For successful business cases, participants must have at least moderate confidence in what resources, and in what locations, will be able to participate in the unit combinations.

While AEMO should always use the best information available to deliver system security, AEMO also needs to have a framework that incentivises forward planning and identifying system security concerns well in advance, and sharing information progressively and continuously with market participants. If constraints are implemented without warning, this should be followed within a prescribed period by detailed modelling, including how that constraint should be relieved. This should apply to all system security constraints, not just in the OSM framework.

Technology neutrality

All jurisdictions have committed to rapid decarbonisation, and Energy Ministers have committed to including decarbonisation in the NEO. It is therefore appropriate for the AEMC to specifically require AEMO to consider how system services can be delivered from zero- or low-emissions delivery of system services (without AEMO itself mandating those options). This will help ensure that zero emissions targets can be met.

The level of flexibility in commitment, the block size, and gate closures should all be considered through the lens of transitioning to zero emissions resources.

Cost recovery

Currently, participants have no visibility of the costs likely or possibly incurred under the OSM framework. AEMO and AEMC have not been able to provide advice as to what services are likely to be procured, the volumes required, or the frequency needed. Like directions, these costs are still “out of market” – that is, separate from the energy price, and therefore an additional and difficult to hedge cost faced by market customers. Such costs cannot be allowed to be added to bills without significant oversight.

To the extent that the OSM is only used infrequently, with minimal costs incurred, the OSM framework may be acceptable as an alternative to directions. However, the system strength framework determined that short-term markets were not appropriate for procuring non-fungible but critical system services. If AEMO has identified material additional technical requirements for unit combinations beyond system strength, the system strength framework should be the primary mechanism.

We therefore recommend that the majority (if not all) of costs for system strength be allocated through long-term contracts (with predictable costs to participants) rather than volatile OSM pricing (where costs can vary significantly over time, and may not be hedged).

Cost recovery for non-delivery requires careful consideration, as the financial impact on other participants and on customers could be larger than the participant bid. For contracted system strength providers, this requires consideration of both their contracted and OSM spot obligations.

Market power

Iberdrola Australia supports the AEMC’s proposed flexible approach to addressing market power. Market power risks can be reduced if participants have visibility of what new entrants are required, as described above. As with the energy market, this can help ensure market power is transient.

Clear articulation by AEMO and TNSPs of the potential replacement resources will also help the AER in determining if provision by incumbents is still least cost, and therefore intervention is not required.

Market design and real-time approach

In the context of real-time activation of services, Iberdrola Australia supports the approach taken by AEMC to procure OSM services as close to real time as possible. This is consistent with the approach currently undertaken by all market participants in making operational decisions (e.g., unit commitment and fuel sourcing): participants take a forward looking view of when resources will be required for their portfolio or would otherwise be profitable to operate on a risk adjusted basis. For example,

Iberdrola Australia has previously charged its battery at ~\$10,000/MWh in order to have stored energy to protect against a future higher price spike.

The Draft Determination provides a clever alternative to the “day ahead” contracting market previously advocated for by AEMO/ESB and some incumbents. It avoids the significant risk to market customers of AEMO locking in costs (for example, day ahead commitment payments) which are then passed on to customers. Under the AEMC’s approach, provided AEMO provides sufficient information to the market, it is market participants who generally bear the operational risk.

Sufficient data should be recorded and maintained to ensure the AER, and subsequent reviews by the AEMC (or Reliability Panel) can assess whether units have made good faith bids. For example, a unit bidding an enablement price that is not selected in the final OSM run but still ultimately operates must be an indication of unrealistic bidding.

We note that there are many edge cases to be considered. For example, if a unit (that would not have otherwise committed into the market) receives an enablement payment under the OSM, can that unit then elect to start operation before the OSM block, to deliver revenue that is profitable in the short-run?

Contracting approaches

If market participants participate in the OSM, under the Draft Determination they are effectively contracting their minimum load (if any) to AEMO at a fixed price. This effectively creates an incentive for participants to prefer to make their capacity available if they consider, on a risk-adjusted basis, that their capacity may be required in the market; if so, they would not receive any benefit under the OSM and consumers would not pay for a service that would have been delivered anyway.

The AEMC’s approach helps ensure that out of market payments are minimised, reducing risk of unhedged costs to customers.

There could be an alternative approach where OSM payments are bid as a “top up” to energy revenues. This might result in all participants in a constraint receiving some payment, and hence stronger signals for investment in new resources (if coupled with the Rules-based obligations noted above). This could also help reduce the risk of a “death spiral” where committing an additional participant causes other participants to decommit.

Iberdrola Australia does not support the position advocated for by some participants where the OSM payment would effectively become a floor payment that derisks unit operation and commitment decisions. This would become a “free option” for participants, and risk muting market signals and increasing the life of coal generators, and favours participants that also produce energy (i.e., fossil fuel generators) rather than incentivising new, zero emissions resources.

Objective function

Iberdrola Australia supports the intent of the objective function. It is critical that system strength services, that have been procured and paid for by renewable

generators under the Incentivising System Strength framework, are dispatched to maximise renewable generation when it is in consumers' interests. We note there will need to be close feedback between the procurement and contracting of those services and the operation of the OSM to ensure both schemes are successful. As noted above, costs under the OSM must be minimised to avoid unhedged costs to customers.

However, as we have previously commented, how this would be implemented practically remains a challenge. There may be situations where committing a unit reduces energy prices not due to system security constraints, such that the OSM could lead to central commitment. Alternatively, it might create inefficient incentives in participant bidding to "overstate" the actual market benefits of activating system services (for example, by bidding an asset to the floor). It seems likely that any OSM operation would need to be triggered by system security constraints, and reviewed regularly.

We recommend that AEMO develop and consult on a draft objective function *before* the AEMC's final determination, to ensure that a workable solution exists.

All OSM bids should be made public as with other market data.

Subsequent design decisions

Once the Rule has been made, many subsequent design decisions (e.g., gate closure) trade off cost and risk. Therefore, we consider this responsibility should sit with the Reliability Panel rather than with AEMO to determine.

We note that there are key questions around how provisional and binding OSM schedules in pre-dispatch information are communicated and actioned by participants (e.g., is it a constraint applied to participants, must participants adjust their bidding to deliver the service, etc.), and when and how participants can adjust their bidding (which may depend on how frequently the OSM solver is run). AEMO has held productive discussions on these topics, which we consider can continue outside of the Rules framework.