AUSTRALIAN ENERGY MARKET COMMISSION

RULE

## Draft rule determination

# National Electricity Amendment (Retailer reliability obligation exemption for scheduled bi-directional units) Rule 2024

Proponents

Neoen Australia
Tesla
Iberdrola Australia

**22 August 2024**

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## About the AEMC

The AEMC reports to the energy ministers. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the energy ministers.

## Acknowledgement of Country

The AEMC acknowledges and shows respect for the traditional custodians of the many different lands across Australia on which we all live and work. We pay respect to all Elders past and present and the continuing connection of Aboriginal and Torres Strait Islander peoples to Country. The AEMC office is located on the land traditionally owned by the Gadigal people of the Eora nation.

## Copyright



## Citation

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# Summary

1 The Australian Energy Market Commission (AEMC or Commission) has decided to make a more preferable draft rule that exempts most storage assets (e.g., batteries and pumped hydro assets) from being liable entities under the Retailer Reliability Obligation (RRO). In the Commission's view, exempting storage from being liable entities will improve the security of the national electricity market (NEM) during reliability-gap periods without compromising the policy intent of the RRO. This draft decision is in response to the rule change request submitted by Iberdrola, Neoen and Tesla (the proponents).

2 The RRO is a mechanism designed to support reliability across the NEM by preventing predicted future generation shortfall ('reliability gaps'). Storage assets with annual electricity consumption above 10GWh are currently liable entities under the RRO akin to a retailer or large user. The proponents have raised that the RRO deters batteries from providing grid-supporting services during reliability-gap periods. As a liable entity, when a battery operates as a load to provide frequency control ancillary services (FCAS) it risks being under-contracted relative to the qualifying contracts it entered the year before the gap period. As a result, providing FCAS could lead batteries to incur Procurer of Last Resort (PoLR) costs and penalties from breaching the RRO. In their rule change request, the proponents have raised that this also affects other storage assets, such as pumped hydro energy storage (PHES).

3 This trade-off between security services and compliance with the RRO represents a security risk to the NEM. Storage assets are key providers of grid-supporting services and, for some services such as very-fast FCAS, the sole provider.

4 The Commission considers that the exemption from the RRO proposed under the draft rule would be a cost-effective, practical solution to improving security in the NEM and not compromise the intent of the RRO.

5 We are seeking feedback on our draft determination and rule by **10 October 2024.**

## The draft rule would address security risks during reliability gap periods, saving potential market costs and benefiting consumers

6 We are aware that system security risks resulting from the RRO were identified in the last gap period in South Australia in early 2024 and were managed through a workaround between the Australian Energy Market Operator (AEMO) and the Australian Energy Regulator (AER). However, the workaround could not be considered an enduring solution to the problem.

7 Exempting all storage assets from liability under the RRO would be an enduring solution to address security risks during reliability gap periods and could save a number of market costs (e.g., higher FCAS costs, directions from AEMO) that would be incurred in order to manage those risks.

8 Whilst the rule change request sought an exemption for scheduled bi-directional units (batteries), the Commission has determined that exempting all storage assets from the RRO would produce additional market benefits without adding further implementation costs. Further, the Commission considers that the exemption would not negatively impact the remaining liable entities.

9 In making our draft decision, we considered stakeholder feedback to the consultation paper and analysed a range of options (including the proposed rule change) against our assessment criteria.

## The Commission has considered stakeholder feedback in making its decision

10 We received 19 submissions to the consultation paper. Notably, the vast majority of stakeholders supported the rule change.

11 Ten out of 19 stakeholders supported excluding PHES, in addition to batteries, from RRO liability, on the basis that these assets, like batteries, are critical providers of essential system services and are equally exposed to compliance/liability costs under the RRO when they provide those services.

12 However, some stakeholders expressed some concern about the rule change. The AER expressed in-principle support for the rule change but asked us to investigate alternative options. Origin feared the level of any liability/compliance costs for other liable entities would increase as a result of the exemption for batteries. They, together with the Energy Users Association of Australia (EUAA) and Stanwell, expressed a preference for keeping batteries liable under the RRO and proposed a procedural change (outside the Rules). We considered this in our assessment of the policy options.

## We assessed our draft rule against three assessment criteria using regulatory impact analysis and stakeholder feedback

13 The Commission has considered the national electricity objective (NEO) and stakeholder feedback in assessing the draft rule.

14 In the Commission's view, the more preferable draft rule would better contribute to achieving the NEO by:

- **Improving the security of the NEM during reliability gap periods** – Exempting storage assets from the RRO would remove the trade-off these assets bear between providing security services and incurring RRO penalties. A rule change exempting PHES assets, in addition to batteries, would unlock additional capacity for grid-supporting services during reliability-gap periods, with benefits for the whole power system.
- **Preventing risks of higher FCAS prices and market costs during gap periods** – With storage assets exempt from the RRO, risks of PoLR costs or, alternatively, the cost of contracts bought to hedge RRO penalty risks, would not flow through into bids to the FCAS markets or through other forms of market costs (e.g. directions that AEMO would need to issue if power-system security is at risk).
- **Providing a low-cost and easy-to-implement solution to solve the security problem** – the draft rule would not be difficult to implement and can be done by the next potential contract position day (1 December 2024), as requested by the proponents and many stakeholders who submitted feedback to the consultation paper. The alternative option for a nuanced exemption of FCAS load from the RRO would have been impractical to implement and would not adequately solve the problems raised by the proponents.

## The draft rule would exempt storage assets from liability under the RRO only in specific scenarios

15 The draft more preferable rule proposes to create a new defined term 'exempt market connection points' which lists a series of assets (identified through connection points to the grid) that would be exempted from liability under the RRO. Exempt market connection points are connection points:

- currently excluded from RRO liability, such as market generating units and in stand-alone power systems, and
- for storage assets captured by the proposed exemption, such as market bi-directional units and pumped hydro assets.

16 **The draft rules specify how storage assets should be registered or classified at their connection point for it to be an exempt market connection point.** Storage assets would need to be registered or classified as part of an 'Integrated Resource System' and fit the criteria established in new clause 4A.D.1A(b)-(d) of the draft rule. For example, a connection point of a stand-alone battery would be an exempt market connection point if it is classified as a market bi-directional unit with no other electricity consumption (besides that of the battery or its auxiliary load) measured at the connection point.

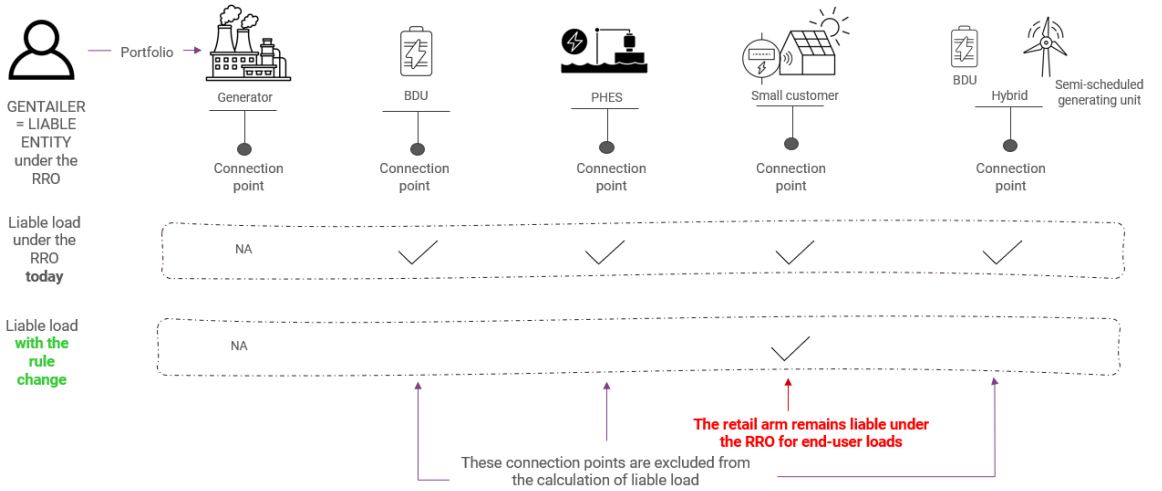
17 **Load from exempt market connection points does not contribute to an entity's liable threshold and is not subject to compliance processes if the entity breaches the RRO.** If storage assets are classified as indicated by the draft rule, load at their connection points would be excluded from:

- The calculation run to determine liability of an entity under the RRO at the end of the contract position day (clause 4A.D.2(b)(2) of the NER), and
- The liable load during the reliability-gap period. For example, if an entity breaches the RRO during the same interval when its battery — at an exempt market connection point — operates as a load, battery load would not contribute to the liable entity's share of PoLR costs.

18 **Entities continue to be liable under the RRO for all connection points that are not exempt market connection points.** Importantly, a liable entity will remain liable for all other connection points that are captured under the RRO (i.e., non exempt market connection points), for instance, connection points for end-user loads. Figure 1 illustrates this point and the difference between liability under the RRO consistent with the current Rules and liability resulting from the more preferable draft rule.

19 **The draft rules exempts storage in 'hybrid plants' only in specific scenarios**. The draft rules have considered storage assets as part of a 'hybrid plant', where the asset shares its connection point with another generator or load centre. For the first case, the draft rule provides that where a battery shares its connection point with another generating unit (such as a wind farm or a thermal generator), and there is no other load, the whole connection point is exempt from the RRO. Importantly, co-located storage with other load centres is exempt from the RRO depending on the total electricity consumption at the connection point. If the total annual consumption at the connection point is less than 10GWh per annum, the connection point is exempt from the RRO. If exceeds 10GWh per annum, the whole plant (including the co-located battery or storage asset) remains liable.

**Figure 1: An example of application of the draft rule to a vertically integrated retailer**




Source: AEMC.

## The draft rule would only require minor procedural changes and commence in mid-November 2024

20 Implementing the new rule would require minimal implementation costs, including minor updates to the AER's Contracts and Firmness Guidelines. Stakeholders did not identify any significant implementation costs and, in most cases, provided no information on this matter.

21 The draft rule, if implemented, would commence immediately once made final, with an intended commencement date of 15 November 2024. This would allow market participants to prepare appropriately in anticipation of the possible contract position day (1 December 2024) for the forecast reliability gap in New South Wales for December 2025 to February 2026.

22 Finally, the draft rule considers the ongoing implementation of the *Integrating energy storage systems into the NEM* rule change, which will require Market Customers to transition to the new categories of bi-directional units or Integrated Resource Providers by 3 December 2024.

# How to make a submission

## We encourage you to make a submission

Stakeholders can help shape the solution by participating in the rule change process. Engaging with stakeholders helps us understand the potential impacts of our decisions and contributes to well-informed, high quality rule changes.

## How to make a written submission

**Due date:** Written submissions responding to this draft determination and rule must be lodged with Commission by **10 October 2024.**

**How to make a submission:** Go to the Commission's website, www.aemc.gov.au, find the "lodge a submission" function under the "Contact Us" tab, and select the project reference code **ERC0389.**[1]

Tips for making submissions on rule change requests are available on our website.[2]

**Publication:** The Commission publishes submissions on its website. However, we will not publish parts of a submission that we agree are confidential, or that we consider inappropriate (for example offensive or defamatory content, or content that is likely to infringe intellectual property rights).[3]

## Next steps and opportunities for engagement

There are other opportunities for you to engage with us, such as one-on-one discussions or industry briefing sessions.

You can also request the Commission to hold a public hearing in relation to this draft rule determination.[4]

**Due date:** Requests for a hearing must be lodged with the Commission by **29 August 2024**.

**How to request a hearing:** Go to the Commission's website, www.aemc.gov.au, find the "lodge a submission" function under the "Contact Us" tab, and select the project reference code **ERC0389.** Specify in the comment field that you are requesting a hearing rather than making a submission.[5]

### For more information, you can contact us

Please contact the project leader with questions or feedback at any stage.

| | |
|---|---|
| Project leader: | Ilaria Barletta |
| Email: | ilaria.barletta@aemc.gov.au |
| Telephone: | +61 2 8296 0629 |

1 If you are not able to lodge a submission online, please contact us and we will provide instructions for alternative methods to lodge the submission

2 See: https://www.aemc.gov.au/our-work/changing-energy-rules-unique-process/making-rule-change-request/our-work-3

3 Further information about publication of submissions and our privacy policy can be found here: https://www.aemc.gov.au/contact-us/lodge-submission

4 Section 101(1a) of the NEL.

5 If you are not able to lodge a request online, please contact us and we will provide instructions for alternative methods to lodge the request.

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## Figures

# 1 The Commission has made a draft determination

The Australian Energy Market Commission (the Commission or AEMC) has decided to make a more preferable draft rule to exempt storage assets from being liable entities under the Retailer Reliability Obligation (RRO) to improve the security of the national electricity market (NEM) during reliability-gap periods.

The Commission is making the draft determination in response to a rule change request submitted by Iberdrola, Neoen and Tesla (the proponents) seeking to exempt 'bi-directional units' from being liable entities under the RRO.[6] Currently, the National Electricity Rules (NER) consider batteries and any other storage asset liable under the RRO if their annual consumption (i.e. load measured at the connection point) exceeds 10GWh in a region.[7] When the RRO is triggered, as liable entities, batteries and storage assets are required to enter into sufficient qualifying contracts to cover their share of system peak demand at the time of the reliability gap.[8]

In their rule change request, the proponents argued that RRO liability applied to batteries introduces security risks during reliability-gap periods. Batteries are key providers of system-security services such as frequency control ancillary services (FCAS), including very-fast FCAS, and inertia.[9] The proponents consider that when batteries operate as a load to provide these services during a reliability gap they may risk being under-contracted. This is because the load used for security services may not be covered by qualifying contracts entered the year before the gap period which only cover their forecast peak demand. This results in battery operators withholding load for those services to avoid risks of penalties[10] and Procurer of Last Resort (PoLR) costs. The proponents have requested that the Commission finalise this rule change by the next possible contract position day (1 December 2024) for the forecast reliability gap in NSW for December 2025 to February 2026.[11]

Whilst the rule change request focuses on bi-directional units, the proponents have also asked the AEMC to consider exempting pumped-hydro energy storage systems (PHES) from the RRO, given the similarity between the two technologies. We included more details on the rule change request in Appendix A.

We are seeking feedback on this draft rule, which is explained in detail in Chapter 3.

## 1.1 Our draft rule would exempt storage assets from the RRO depending on their registration category in the NEM and co-located assets

The draft rule exempts storage assets from the RRO if their connection point is an 'exempt market connection point', i.e., a connection point that should be exempt from liability under the RRO. It considers various configurations of storage assets, for example, battery energy storage systems (BESS) and PHES, and hybrid plants, i.e. batteries that share a connection point with renewable plant or an end-user's load centre. Regarding hybrid plants, the draft rule specifies how the load and generation components of these assets should be classified as well as what consumption at the connection point is admissible, in order for the plant to be considered exempt.

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6 The RRO is a mechanism designed to support reliability across the NEM by preventing predicted future generation shortfall ('reliability gaps'). More information on the RRO is available here.

7 Clause 4A.D.2 of the NER.

8 See sections 14C-14S of the NEL.

9 Iberdrola, Neoen and Tesla. Rule change request, p.5.

10 Up to an individual maximum of $100 million. See section 14T of the NEL.

11 At the time of publication there is a T-3 reliability instrument in place for this gap. AEMO's 2024 Electricity Statement of Opportunity will be published by 31 August 2024 and will confirm if the reliability gap remains, requiring AEMO to request a T-1 instrument.

Chapter 3 illustrates the draft rule in more detail.

## 1.2 Stakeholder feedback and our regulatory impact analysis shaped our determination

In making its decision, the Commission considered the options of making no rule, making the proposed rule change (exempting batteries under the RRO) or making a more preferable rule (exempting all storage assets under the RRO). Stakeholder feedback, input from the Australian Energy Market Operator (AEMO) and the regulatory impact analysis (see Appendix B) were instrumental in shaping our draft determination to make a more preferable draft rule.

The following key propositions and supporting data informed our decision:

- **Stakeholders agreed that there are risks to the security of the NEM during reliability gap periods.** In their submissions to the consultation paper, stakeholders considered RRO compliance and liability applied to batteries could contribute to security risks in the NEM.[12] Some stakeholders characterised the problem as an 'unintended consequence of the RRO'.[13]
- **Exempting all storage assets from the RRO would deliver additional benefits and come at no additional cost than exempting only batteries.** The more preferable draft rule removes the barriers so all storage assets can continue to provide security services for all storage assets instead of targeting only batteries (the intent of the proponents' rule change). As such, the more preferable draft rule meets the national electricity objective (NEO) and has potential to deliver bigger system benefits than the proposed rule change. For more detail on these considerations, please see Chapter 2 and the Regulatory Impact Analysis in Appendix B. This position was supported by stakeholders, with 10 out of 19 stakeholders supporting excluding PHES, in addition to batteries, from RRO liability.[14] Notably, the vast majority of stakeholders supported the rule change.[15]
- **Exempting batteries and PHES would not compromise the integrity of the RRO and would not make other liable entities worse off.** Exempting storage assets from the RRO would not produce unintended consequences for remaining liable entities and may even support those entities in reducing compliance costs. Removing storage load from liability under the RRO would put downward pressure on prices of qualifying contracts and, therefore, reduce RRO compliance costs for remaining liable entities.[16] Further, in response to a concern raised by Origin[17], we see no meaningful risk that batteries, if made not liable, would operate in a way that triggers breaches of the RRO during reliability-gap periods. AEMO dispatch data shows that batteries operate as net generators, not net loads, during high-price periods (which tend to occur when reliability is tight). The analysis is illustrated in Appendix C.
- **Procedural changes that attempt to solve the problem whilst keeping storage assets liable ('no rule' option) would not be practical.** The Australian Energy Regulator (AER), Origin, Stanwell and EUAA asked us to consider an alternative option to a rule change, including

12 Submissions to the consultation paper: AEMO, p.5, AER, p.3, AGL, p.1, Akaysha Energy, p.1, CEIG, p.1, CS Energy, p.2, EnergyAustralia, p.1, Engie, p.1, EUAA, p.2, Stanwell, p.1, Zen Energy, pp.3-4.

13 Submissions to the consultation paper: AEMO, p.5, Akaysha Energy, p.1, CEC, pp.1-2, CEIG, pp.2-3, Stanwell, pp.1-2.

14 Submissions to the consultation paper: AEMO, p.5, AGL, p.2, CEC, p.3, EUAA, p.3, CleanCo, p.1, CS Energy, p.3, Hydro Tasmania, p.1, Iberdrola, p.2, Snowy Hydro, pp.1-3, Zen Energy, p.5.

15 Submissions to the consultation paper: AEMO, p.5, AGL, p.1, Akaysha Energy, p.2, CEC, p.2, CEIG, p.2, CleanCo, p.1, CS Energy, p.2, EnergyAustralia, p.1, Engie, p.2, EUAA, p.3, Hydro Tasmania, p.1, Shell Energy, p.2, Snowy Hydro, p.1, Stanwell, p.2, Zen Energy, pp.4-5.

16 Submissions to the consultation paper: CS Energy, p.3, Iberdrola, p.1, Shell Energy, p.2, Stanwell, p.2.

17 Submission to the consultation paper: Origin, pp.1-2.

'carving out' load provided by batteries for FCAS from RRO compliance and allocation of PoLR costs.[18] The Commission does not consider this a viable option as it would be impractical and, if implemented, ineffective in solving the problem. See Chapter 2 for further detail.

18 Submissions to the consultation paper: Origin, p.2, EUAA, p.4, Stanwell, p.2.

# 2 The rule would contribute to the energy objectives

## 2.1 The Commission must act in the long-term interests of energy consumers

The Commission can only make a rule if it is satisfied that the rule will or is likely to contribute to the achievement of the relevant energy objectives.[19]

For this rule change, the relevant energy objective is the NEO:

The NEO is:[20]

> to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to—
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system; and
>
> (c) the achievement of targets set by a participating jurisdiction—
>
> (i) for reducing Australia's greenhouse gas emissions; or
>
> (ii) that are likely to contribute to reducing Australia's greenhouse gas emissions.

The targets statement, available on the AEMC website, lists the emissions reduction targets to be considered, as a minimum, in having regard to the NEO.[21]

## 2.2 We must also take these factors into account

### 2.2.1 We have considered whether to make a more preferable rule

The Commission may make a rule that is different, including materially different, to a proposed rule (a more preferable rule) if it is satisfied that, having regard to the issue or issues raised in the rule change request, the more preferable rule is likely to better contribute to the achievement of the NEO.[22]

For this rule change, the Commission has made a more preferable draft rule. The reasons are set out in section 2.3.

### 2.2.2 We have considered how the rule would apply in the Northern Territory

In developing the draft rule, the Commission has considered how it should apply to the Northern Territory according to the following questions:

- Should the NEO test include the Northern Territory electricity systems? For this rule change request, the Commission has determined that the reference to the "national electricity system" in the NEO includes the local electricity systems in the Northern Territory.
- Should the rule be different in the Northern Territory? The Commission has determined that a uniform rule should apply to the Northern Territory.

This draft rule relates to parts of the NER that currently apply in the Northern Territory (Chapter 4A and 11). See Appendix D for more detail on the legal requirements for our decision.

19 Section 88(1) of the NEL.
20 Section 7 of the NEL.
21 Section 32A(5) of the NEL.
22 Section 91A of the NEL.

## 2.3 How we have applied the legal framework to our decision

The Commission must consider how to address the security problem raised by the proponents against the legal framework.

The Commission considered three broad options:

- **The rule proposed in the rule change request** - excluding scheduled bi-directional units from the RRO.
- **A business-as-usual scenario where we do not make a rule** - which, in this case, could consist of a procedural change that some stakeholders suggested in their submissions to the consultation paper.[23] This change would see no amendment to the NER but would require the Australian Energy Regulator (AER) to exclude load provided for FCAS and other grid services from the calculation of the liable share of liable entities under the RRO.
- **A more preferable rule** - excluding all storage assets from the RRO. The more preferable rule encompasses batteries that are part of 'hybrid plants' (for example, batteries co-located with renewable plant). The Commission considers this to be within the scope of the rule change request as it was raised as a potential option by the proponents.

We identified the following criteria to assess whether the options are likely to better contribute to achieving the NEO:

- **Safety, security and reliability** - to test whether the draft rule would improve, or remove risks to, the security of the power system during reliability-gap periods.
- **Principles of market efficiency**- to test whether the draft rule would increase competition in the delivery of grid-security services (which could translate, for example, into lower FCAS prices).
- **Implementation considerations**- to test whether the draft rule can be implemented before the next possible T-1 reliability instrument for the forecast reliability gap in NSW from December 2025 to February 2026. This means the draft rule would need to be implemented by 1 December 2024.

Our reasons for choosing these criteria are set out in section 4.2 of the consultation paper. Stakeholder submissions to the consultation paper agreed on the appropriateness of these assessment criteria[24] or raised no comment on the proposed criteria.

The Commission considers a 'more preferable draft rule' that excludes storage assets from the RRO will better contribute to the achievement of the NEO.

The rest of this section explains why the draft rule best promotes the long-term interest of consumers when compared to other options and assessed against the criteria.

### 2.3.1 The more preferable draft rule would improve the security of the NEM during reliability gap periods

In evaluating the more preferable draft rule against the security criterion, the Commission has determined that:

1. exempting storage assets from the RRO would address the security risks raised by the proponents and unlock a higher number of providers of security services during reliability gap periods

23 Submissions to the consultation paper: Origin, p.2, EUAA, p.4, Stanwell, p.2.

24 Submissions to the consultation paper: AEMO, p.7, EUAA, p.4, Zen Energy, p.10.

2. the alternative option of a nuanced exemption of FCAS load from the RRO would be impractical to implement and not solve the security problem.

**Exempting storage assets from the RRO would solve the security problem raised by the proponents and unlock a higher number of providers of security services during reliability gap periods**

An exemption from the RRO would support storage assets providing FCAS and other grid-supporting services by removing the need for these assets to weigh up the risk of providing the services in real time but potentially being under-contracted in doing so and facing PoLR costs and RRO penalties.

Security risks from this trade-off have occurred in the past. In their submission to the consultation paper, AEMO raised that system security risks resulting from the RRO emerged in the lead up to the gap period of January and February 2024 in South Australia.[25] In that instance, AEMO and the AER had to develop a workaround to ensure batteries exposed to RRO liability could provide services during the reliability gap period. The workaround succeeded in managing the risk but could not have replaced an enduring solution to the problem.

With both batteries and PHES assets exempted from the RRO, a higher number of providers would be available to offer security services during gap periods. This would improve the security of the NEM during reliability-gap periods not only compared to the status quo but also compared to the proposed rule change (which would have exempted batteries but not PHES assets). Further, the Commission considers that extending the exemption to PHES would not cause additional implementation costs compared to exempting only batteries.

**The alternative option of a nuanced exemption of FCAS load from the RRO would be impractical to implement and not solve the security problem**

The AER expressed in-principle support for the rule change but asked us to investigate alternative options.[26]

Origin, EUAA and Stanwell expressed a preference for keeping batteries liable under the RRO (i.e., not making a rule) but changing market procedures in ways that would solve the trade-off batteries face between reliability and security. They suggested that if batteries charge to provide FCAS without adequate contract coverage (i.e., the RRO is breached), procedures should be changed such that these assets are not subject to any penalty for breaching the RRO nor charged PoLR costs.[27]

This approach would require AEMO or the AER to separate out whether the electricity consumed was for the purposes of energy or FCAS. We discussed this option with AEMO, who confirmed that executing such nuanced exemptions is impractical based on the following considerations:

- Batteries can provide a variety of frequency response/control services under very small intervals of time (in fact, they are the sole provider of very fast FCAS markets). This means, they can use their capacity to provide both FCAS and charge energy for wholesale-arbitrage purposes within the same dispatch interval.
- AEMO assesses compliance with the dispatch instruction at the end of every 5-minute dispatch interval, not within the dispatch interval. In other words, there is no way to separate load/charge for arbitrage purposes from load/charge for FCAS within any given dispatch interval unless resorting to assumptions on battery behaviour within the dispatch interval.

25 Submission to the consultation paper: AEMO, pp.1-2.
26 Submission to the consultation paper: AER, p.1.
27 Submissions to the consultation paper: Origin, p.2, EUAA, p.4, Stanwell, p.2.

- We, and AEMO, consider that batteries would not be certain whether the assumptions used to assess compliance with the dispatch target would result in them being liable or not. Therefore, batteries may err on the side of caution and not provide system services.

The Commission considers the above does not adequately solve the problem, as it would result in batteries facing the same choice between RRO compliance and providing system services as they do now.

### 2.3.2 The exemption from the RRO would allow storage assets to provide security services more cost-effectively and with no detriment to reliability

In evaluating the more preferable draft rule against the market-efficiency criterion, the Commission has considered that it would:

1. prevent risks of higher FCAS prices and market costs during gap periods
2. not compromise the integrity of the RRO.

**The more preferable draft rule would prevent risks of higher FCAS prices and market costs during gap periods.**

The Commission considers that removing storage assets from liability under the RRO would bring about benefits to the NEM in the form of a more efficient provision of security services during reliability gap periods, and, more broadly, avoidance of additional market costs compared to the status quo.

With storage assets exempt from the RRO, risks of PoLR costs or, alternatively, the cost of contracts bought to hedge RRO penalty risks, would not flow through into bids to FCAS markets or through other forms of market costs (e.g. directions).[28]

The exemption from the RRO would also contribute to removing a risk that, as the proponents indicated, is inherently hard for batteries to manage due to the incompatibility between the operations of a battery in the market and the contracting requirements imposed by the RRO.[29] Some stakeholders agreed with the proponents' view on this matter. For example:

- Zen Energy claimed that "we also do not believe that battery operators can manage risks from RRO compliance with solutions available today, or at least cannot do so efficiently and in a manner that is consistent with the NEO. Purchasing caps often involves purchasing from hydro units - which would not be an option when the cap is needed to manage risks that are also faced by hydro units. The alternative - purchasing caps from thermal plant - would add potentially significant costs without discernible benefits, and potentially delay the exit of thermal plants."[30]
- ENGIE commented on this issue and "agrees with the rule change proponents that there are likely to be timing impacts that mean RRO non-compliance risks will remain. It would not be viable for operators to procure financial contracts to hedge the outstanding load related to their units during RRO liability periods, as the charging that may occur during those periods is difficult to accurately forecast."[31]

28 It is important to clarify that the draft rule does not, in and of itself, directly put downward pressure on FCAS prices but instead removes the feedback loop between RRO compliance costs for storage assets and FCAS market prices.

29 Iberdrola, Neoen and Tesla. Rule change request, p.3 and p.6. Here, the proponents contested the option of using caps contracts to hedge operational risks induced by the RRO due to the uncertain demand for grid-supporting services and the difficulty of factoring that demand into qualifying contracts before the start of a reliability gap period.

30 Submission to the consultation paper: Zen Energy, p.9.

31 Submission to the consultation paper: ENGIE, p.1.

- Snowy Hydro argued that "lumping pumped hydro with an RRO obligation, as though it was akin to an unhedged load that needs to be supported by firm contracts, is illogical."[32]

**The more preferable draft rule would not compromise the integrity of the RRO**

In their submission to the consultation paper, Origin was concerned that the proposed change would distort incentives for storage providers "to manage their impact on reliability during such periods and increase the level of any liability / compliance costs for other entities."[33]

In making its decision, the Commission considered that de-risking storage assets from the RRO does not 'shift the risk burden' to other liable entities. In other words, liable entities would not suffer from higher compliance costs or risks as a result of the exemption granted to storage. This is because of three key reasons:

1. Liable entities that are financially responsible for storage assets will continue to be liable for connection points that are not captured by the proposed exemption (i.e., connection points for end user's load). Chapter 3 clarifies this aspect of the rule change.
2. As noted above, removing batteries and PHES's load from liability under the RRO would put downward pressure on prices of qualifying contracts and, therefore, reduce RRO compliance costs for remaining liable entities.[34]
3. The exemption would not increase the exposure of other liable entities to breaches of the RRO. This is because batteries and PHES assets tend to operate as net generators, not net loads, during high-price periods (which tend to feature reliability-gap periods). We have demonstrated this point with an analysis on historical data in Appendix C.

### 2.3.3 The draft rule has considered procedural changes and the IESS rule change's implementation horizon

If made final, the rule would have immediate effect from its commencement, planned for 15 November 2024. This will allow liable entities in NSW to contract the appropriate liable load in preparation for potential contract position day in December 2024.

Implementing the new rule would require minimal implementation costs, including minor updates to the AER's Contracts and Firmness Guidelines. Stakeholders did not identify any significant implementation costs, and, in most cases, provided no information on this matter.

Finally, the draft rule considers the ongoing implementation of the 'Integrating energy storage systems into the NEM' (IESS) rule change, which will require Market Customers to transition to the new categories of bi-directional units or integrated resource providers (see section 3.4).[35]

32 Submission to the consultation paper: Snowy Hydro, p.2.
33 Submission to the consultation paper: Origin, pp 1-2.
34 Submissions to the consultation paper: CS Energy, p.3, Iberdrola, p.1, Shell Energy, p.2, Stanwell, p.2.
35 AGL raised this point in their submission to the consultation paper, p.3.

# 3 How our rule would operate

The Commission's more preferable draft rule proposes to create a new defined term 'exempt market connection points' which lists assets (identified via their connection point with the grid) that would be exempted from liability under the RRO.[36] This new term encompasses connection points for market generating units and in stand-alone power systems (SAPS) (which are currently excluded from RRO liability) and, importantly, connection points for storage assets captured by the proposed exemption (e.g. market bi-directional units and pumped hydro assets).

Under the new rule, the consumption of storage assets at exempt market connection points would not be included when working out if a Market Customer or Integrated Resource Provider (IRP) is a liable entity for a region or when calculating liable load.

Section 3.1 provides an overview of the draft rule, and Section 3.2 lists and provides example, illustrative scenarios of plants that would be excluded from liability under the RRO.

## 3.1 Overview of market arrangements that exclude storage from the RRO

The draft arrangements for the exemption of storage assets are summarised as follows:

1. **The draft rules exempt storage assets in specific scenarios.** Storage assets that would be exempt from the RRO would need to be registered or classified as part of an 'Integrated Resource System' (IRS) and fit the criteria established in new clause 4A.D.1A(b)-(d) of the draft rule.[37] For example:
   - The connection point of a stand-alone battery would be an exempt market connection point (i.e. exempt from the RRO) if it is classified as a market bi-directional unit with no other electricity consumption (besides that of the battery or its auxiliary load) measured at the connection point.[38]
   - The connection points of a PHES asset would be an exempt market connection point if it is a bidirectional unit that has been classified as a scheduled generating unit and scheduled load in accordance with clauses 2.2.2(b)(2) and 2.3.4A(b) of the NER.
   - A battery classified as a bi-directional unit that provides power to a large load and shares the connection point with the plant would **not** be exempted from the RRO, nor would the large load be, if the total electricity consumption at the connection point exceeds 10GWh per annum.[39] [40]
2. **Storage assets at 'exempt market connection points' do not contribute to an entity's liability under the RRO at the end of the contract position day.** Connection points for storage assets would not be part of the aggregate consumption (liable load) that is used to determine a liable entity's[41] required net contract position at T-1.[42] In practice, this means that Qualifying Contracts purchased by a liable entity prior to the contract position day would not need to cover estimated consumption (load) from storage assets. A liable entity will remain liable for all other connection points that should be appropriately captured under the RRO, for instance, connection points for end-user loads. Figure 3.1 illustrates the difference between liability

36 New proposed clause 4A.D.1A of the NER.
37 See Section 3.2 for the full detail of the new clause.
38 New proposed clause 4A.D.1A(d)(1) of the NER.
39 As determined in accordance with the Contracts and Firmness Guidelines.
40 New proposed clause 4A.D.1A(d)(2) of the NER.
41 An entity financially responsible for those connection points.
42 Draft amended clause 4A.D.2(b)(2) of the NER.

under the RRO consistent with the current Rules and liability under the RRO resulting from the more preferable draft rule.

3. **Load from exempt storage assets is not subject to compliance processes if the RRO is breached.** As a consequence of point 2 above, load from exempt connection points would not be part of the liable load for a compliance TI of a given liable entity.[43] [44] This means that a battery at an exempt market connection point that operates as a load during an interval when the RRO is breached by a liable entity would not contribute to the liable entity's share of PoLR costs.
4. **New entrants' storage assets can equally benefit from the proposed exemption.** The same exemption used to calculate if a participant meets the liable entity threshold for the region (illustrated in points 1-3 above) would apply to storage assets of a new entrant in a region.[45]
5. **Transitional rules consider entities moving to the new 'Integrated Resource Providers' category between the effective date of this rule change and 3 December 2024.** The same exemption will be extended to connection points of 'transitioning generating systems' and 'transitioning scheduled loads'[46] of entities that transition to new category of IRP[47] and classify their plant between the effective date of this rule, being 15 November 2024, and 3 December 2024. This period is defined as the 'transition period' in the draft rule. We note that:
   - Connection points for transitioning generating systems and transitioning scheduled loads are excluded from a liable entity's calculation threshold only if, immediately after the end of the transition period, the connection point is categorised as an exempt market connection point.[48]
   - Storage assets of liable entities that are still registered as market customers between the possible contract position day of 1 December 2024 (T-1 date, if a T-1 reliability instrument is issued) and 3 December 2024 (registration completion deadline) remain liable under the RRO should AEMO confirm in the ESOO a reliability gap period in NSW for December 2025-February 2026.

Additionally, changes may be required to the AER's Contracts and Firmness Guidelines to take into account the rule, if made.

43 A compliance TI is a gap trading interval in which the peak demand in that gap trading interval published under clause 4A.A.4(c) exceeds the one-in-two year peak demand forecast.

44 Draft amended clause 4A.F.3(b)(1) of the NER.

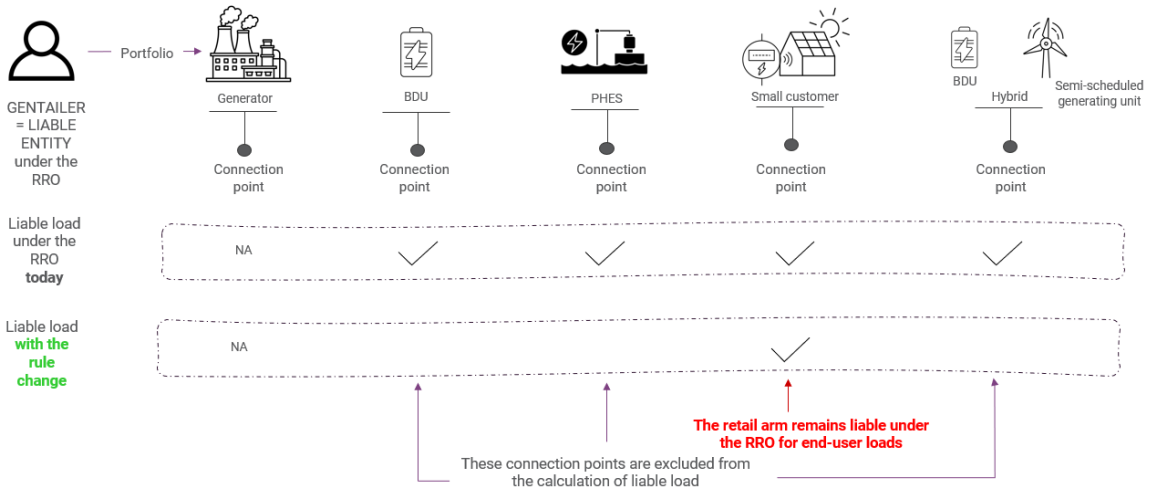
45 Draft amended clause 4A.D.3(c) of the NER.

46 These terms have meaning under the 11.[XXX].1 of the NER.

47 Clause 2.1B.2 of the NER.

48 New proposed clause 4A.D.1A(d)(1) of the NER.

**Figure 3.1: An example of application of the draft rule to a vertically integrated retailer**




Source: AEMC.

The rest of this chapter illustrates the list of plants that the draft rule exempts from the RRO.

## 3.2 Exempt connection points from the RRO

The new proposed clause 4A.D.1A lists all the categories of market connection point that would be exempt from liability under the RRO. Further, the draft rule intends to collect together in a single location the other excluded connection points that currently exist in Chapter 4A and that are to be retained. These include:

- Market generating units as part of a 'generating system' and market connection points in regulated SAPS.[49]
- Connection points for storage assets (and plant including storage assets) that are part of an IRS where the IRS fits the criteria established in new proposed clause 4A.D.1A(b)-(d).[50]

The Commission has considered the existing exclusions from the RRO. Its draft decision is that exempt market connection points would not include connection points for small generating units[51] because these will typically be co-located with load that is covered by the RRO. Similarly, small resource connection points would not be treated as exempt market connection points.[52] The draft rule will also clarify that a large load with a market generating unit at the same connection point with consumption over 10GWh would not be excluded.

### 3.2.1 Stand-alone batteries and PHES plants are exempt from the RRO irrespective of their consumption

This particular exemption reflects the Commission's draft decision discussed in Chapter 2. Batteries and PHES assets that provide services to the market and do not share their connection

49 A generating system is a concept defined in Chapter 10 of the NER and may represent a variety of configurations of generation assets; for instance, a system comprising one or more generating units other than an integrated resource system. For the full definition of a generating system, please see Chapter 10 of the NER.

50 An IRS is a concept defined in Chapter 10 of the NER and may represent a variety of configurations of storage assets; for instance, a system that comprises one or more bi-directional units (batteries) and may comprise one or more generating units and connected plant. For the full definition of IRS, please see Chapter 10 of the NER.

51 Currently mentioned in clauses 4A.D.2(b)(2) and 4A.F.2(b)(1) of the NER.

52 These are currently excluded when calculating the new entrant threshold under clause 4A.D.3(c).

point with any other resource (i.e., they are stand-alone plants) are always exempted from the RRO irrespective of their annual consumption.

Importantly, the exemption applies to the connection point that these assets have with the power grid, not the entity that is financially responsible for them. This ensures entities continue to be liable under the RRO for end-user's load, as illustrated in Figure 3.1.

Table 3.1 illustrates connection points for batteries and PHES assets exempt from the RRO. The market connection points for the assets classified as indicated by this table would be excluded when calculating whether the RRO liable entity threshold is met and also liable load.

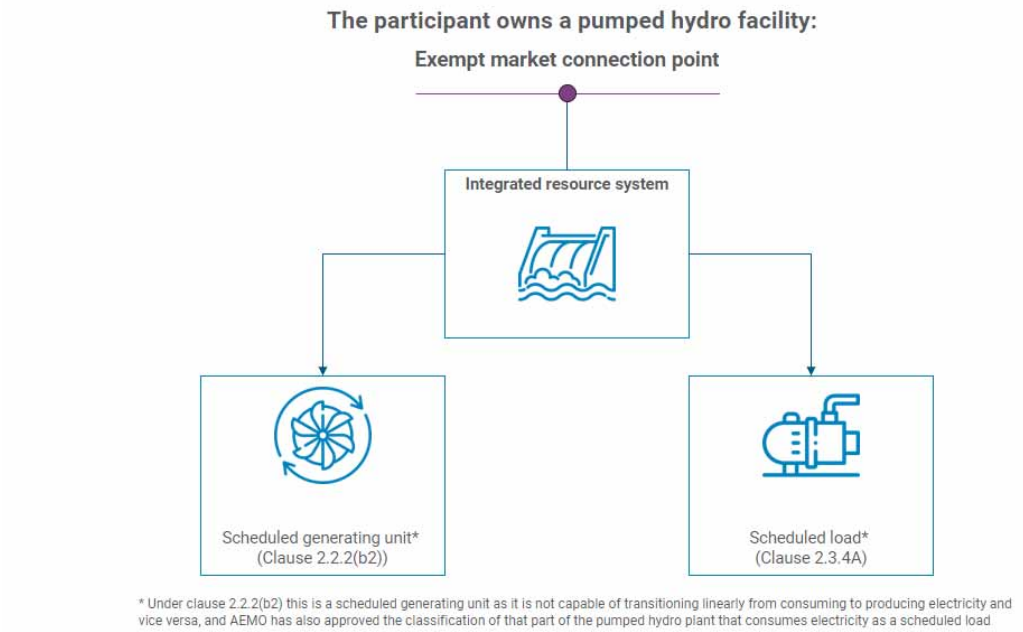
**Table 3.1: Stand-alone batteries and PHES (as IRS) that would be excluded from the RRO under the proposed draft rule**

| IRS Plant | Plant classification | Illustrative example | Corresponding clause in the draft rule that determines exemption |
|---|---|---|---|
| Battery | Unit classified as scheduled, market bidirectional unit | 100MW battery, which consumes **more than 10GWh** of energy per annum | 4A.D.1A(d)(1) |
| Battery | Unit classified as scheduled, market bidirectional unit | 20MW battery, which consumes **less than 10GWh** of energy per annum | 4A.D.1A(d)(1) |
| Battery | Unit classified as non-scheduled, market bidirectional unit | A small market-facing battery, with capacity <5MW (by definition, it would consume **less than 10GWh** of energy per annum) | 4A.D.1A(d)(1) |
| PHES | An IRS composed of two units:<br>1) Scheduled generating unit not capable of transitioning linearly from consuming to producing electricity and vice versa (Clause 2.2.2(b2))<br>2) Scheduled load (2.3.4A). | 1GW PHES asset with consumption **above 10GWh** of energy per annum.<br>The load is connected at a market connection point of the Market Participant that is the FRMP. | 4A.D.1A(c) |

Source: AEMC.

Figure 3.2 illustrates an example of a connection point for PHES that is exempt from the RRO.

**Figure 3.2: An example of an exempt market connection point for a PHES asset. This asset would be exempt from the RRO**




Source: AEMC
Note: Illustrative diagram.

### 3.2.2 Exemption from the RRO also applies to storage assets that are co-located with other forms of generation

The draft rule has considered a variety of storage-asset configurations. One of these entails batteries or PHES assets that are co-located with other types of generating units, i.e., a 'hybrid' plant that combines storage and generation assets.

The draft rule provides that where a battery shares its connection point with another generating unit (such as a wind farm or a thermal generator), and there is no other load, the whole connection point is exempt from the RRO. The exemption would also encompass the 'auxiliary load' that the generating unit, or the battery, would consume to perform their energy-conversion processes. Given that generating systems are already exempt under the RRO, this position is consistent with exempting stand-alone storage assets (see previous section).

Table 3.2 illustrates exempt connection points for hybrid plants combining generation and storage. The market connection points for the assets classified as indicated by this table would be excluded when calculating whether the RRO liable entity threshold is met and also liable load.

**Table 3.2: Hybrid connections of 'generation+storage' that would be excluded from the RRO under the proposed draft rule**

| IRS Plant | Plant classification | Illustrative example | Corresponding clause in the draft rule that determines exemption |
|---|---|---|---|
| Hybrid | Market, scheduled | 6MW Battery (trades in | |

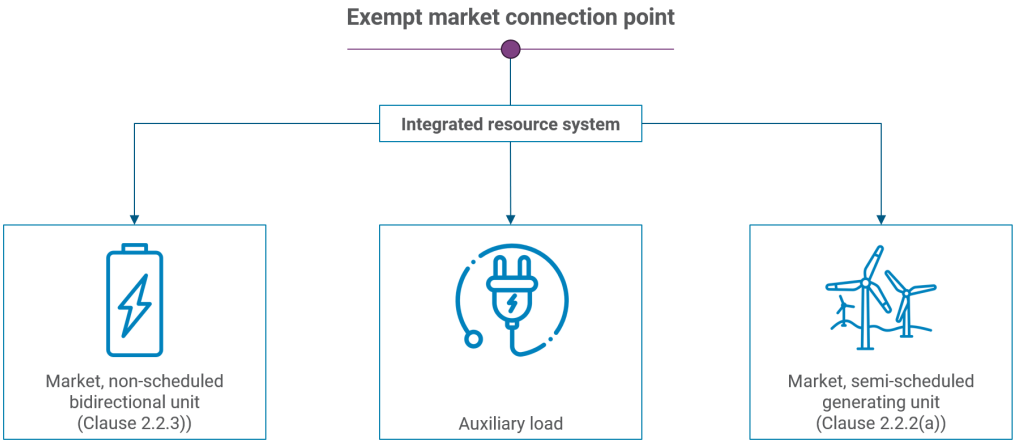
| IRS Plant | Plant classification | Illustrative example | Corresponding clause in the draft rule that determines exemption |
|---|---|---|---|
| (storage + generation units), no other load | bidirectional unit and generating units | the market) co-located with a 100MW thermal generator | 4A.D.1A(b) and (d)(1) |
| Hybrid (storage + generation units), no other load | Market, non-scheduled bidirectional unit and generating units | 4MW Battery (trades in the market) co-located with a 100MW wind farm | 4A.D.1A(b) and (d)(1) |
| Hybrid (storage + generation units), no other load | Non-market, non-scheduled bidirectional units with a scheduled market generating unit | 2MW Battery (off-market) co-located with a 100MW thermal generator | 4A.D.1A(b) |
| Hybrid (storage + generation units), no other load | Non-market, non-scheduled bidirectional units with a semi-scheduled market generating unit | 2MW Battery (off-market) co-located with a 100MW wind farm | 4A.D.1A(b) |

Source: AEMC

Figure 3.3 illustrates an example of a connection point for a hybrid plant that is exempt from the RRO.

**Figure 3.3: An example of an exempt market connection point for a hybrid plant (generation+storage). This asset would be exempt from the RRO**

**The participant owns a site with a 100MW wind farm which has auxiliary load and a 4MW battery:**




Source: AEMC
Note: Illustrative diagram.

### 3.2.3 Co-located storage with other load centres is exempt from the RRO depending on the total electricity consumption at the connection point

Another configuration we have considered involves batteries or PHES assets that are co-located with other types of load (e.g., a refinery), resulting in a hybrid plant that combines storage and load.

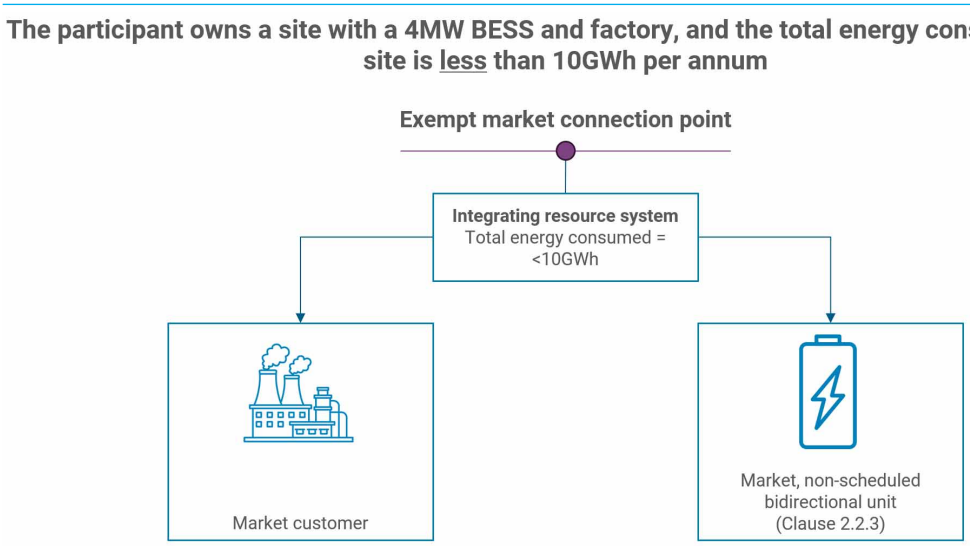
The draft rule provides that where a market-facing battery (market bi-directional unit) is part of an IRS with other types of customer load, then the aggregated consumption of electricity at the connection point determines whether the whole connection (including the battery) is exempt from the RRO or continues to be liable.

The draft rule establishes that if the total annual consumption at the connection point is less than 10GWh per annum, the connection point is exempt from the RRO. The Commission considers that the threshold of 10GWh is appropriate to distinguish connections that should be exempt from the RRO from connections that, given the size of their annual load and its impact on reliability, should remain liable.

This threshold applies to IRS composed of batteries, customer load and also generating units, including small generating units.

Figure 3.4 illustrates an example of an exempt market connection point for a hybrid plant that includes end-user's load and storage. The market connection points for the assets classified as indicated by this table would be excluded when calculating whether the RRO liable entity threshold is met and also liable load.

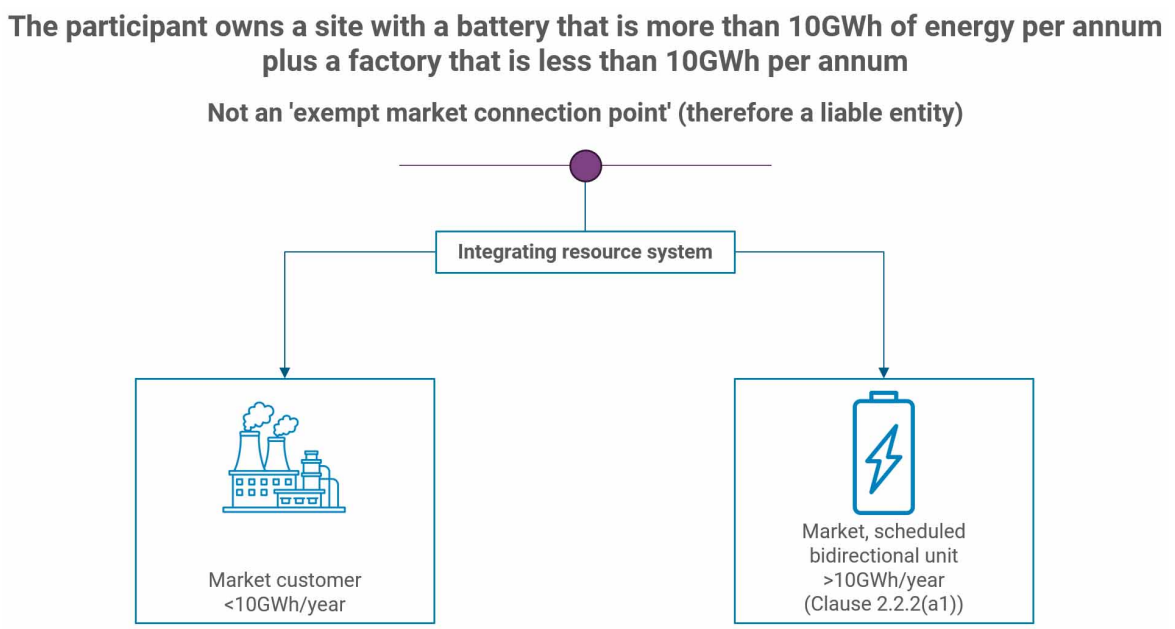
**Figure 3.4: An example of an exempt market connection point for a hybrid plant (storage + end-user's load). This asset would be exempt from the RRO**




Source: AEMC.
Note: Illustrative diagram.

For clarity, Figure 3.5 includes an example of a connection point for a hybrid plant that despite including a BDU remains liable under the RRO due to exceeding the annual consumption threshold of 10GWh.

**Figure 3.5: An example of a non-exempt connection point for a hybrid plant. This asset is a liable entity under the RRO**




Source: AEMC.
Note: Illustrative diagram.

## 3.3 Implementation

Changes may be required to Sections 2.1 and 5.3.4 of the AER's Contracts and Firmness Guidelines to account for the exempt market connection points, if the rule is made.

New transitional arrangements are proposed to address the interaction between this rule and the transitional arrangements for the 'Integrating Energy Storage Systems' rule (IESS).[53] The IESS rule allows for a 'registration grace period' for IRS (such as batteries and pumped hydro) that were first registered before the start of the new IESS classification and registration categories.[54] During the registration grace period, the participants responsible for these IRS are required to apply to AEMO to register in the new IRP category and reclassify their plant. The registration grace period ends on 3 December 2024. This is after the contract position day that would be used to calculate liable entities for the NSW region if a reliability gap is confirmed for December 2025 – February 2026.[55] There is a possibility that plant subject to the IESS transitional arrangements are only reclassified in the last few days of the registration grace period. The new transitional arrangements proposed in this draft rule clarify that the new exemptions from the RRO extend to the market connection points to this plant, if they satisfy the other conditions for being excluded.

53 National Electricity Amendment (Integrating energy storage systems into the NEM) Rule 2021.
54 Clause 11.145.2 of the NER.
55 AER, T-3 Reliability Instrument for New South Wales for 1 December 2025 to 28 February 2026.

# A Rule making process

A standard rule change request includes the following stages:

- a proponent submits a rule change request
- the Commission initiates the rule change process by publishing a consultation paper and seeking stakeholder feedback
- stakeholders lodge submissions on the consultation paper and engage through other channels to make their views known to the AEMC project team
- the Commission publishes a draft determination and draft rule (if relevant)
  - stakeholders lodge submissions on the draft determination and engage through other channels to make their views known to the AEMC project team
- the Commission publishes a final determination and final rule (if relevant).

You can find more information on the rule change process on our website.[56]

## A.1 The proponents proposed a rule to exempt bi-directional units (batteries) from the RRO

Retailers, large energy users and other persons that are financially responsible for connection points with annual electricity consumption above 10GWh are liable entities under the RRO. Today, the RRO considers consumption from scheduled bi-directional units (batteries) as contributing to the liable load of liable entities. This has the effect of subjecting battery operations in the market to RRO compliance.

Iberdrola, Neoen and Tesla (the proponents) have raised that the contracting requirements of the RRO deter batteries from providing grid-security services during reliability-gap periods. In other words, batteries would not operate as a load to provide FCAS and other ancillary services as a way of avoiding risks of penalties and PoLR costs as a result of potentially being under-contracted.

The proponents suggested amending clause 4A.D.2(b)(2) of the NER to include the term 'scheduled bi-directional units' to the list of exempted connection points contributing to liable load under the RRO. Further, the rule change request included a consideration on whether pumped-hydro storage should also be considered for an exemption from RRO liabilities.

## A.2 The proposal seeks to address system-security risks during reliability gap periods

The rule change proponents have claimed that the issue faced by batteries will produce adverse outcomes for the NEM in three key areas:

- **System security (and market price for those services, e.g. FCAS)**. If, as a result of RRO compliance, batteries are disincentivised to provide system-security services (or offer these services at a higher cost) the NEM would face risks such as: the erosion of supply for particular services (only batteries can provide very fast FCAS), insufficient supply of FCAS when coal capacity retires, and higher market costs as a result of batteries' higher bids for FCAS provision (as bids would incorporate the costs of caps bought as qualifying contracts).
- **Reliability - impact on battery-storage investments**. The inability to hedge risks from RRO non-compliance would eventually stymie investments in battery storage, aggravating the

56 See our website for more information on the rule change process: https://www.aemc.gov.au/our-work/changing-energy-rules

problem of insufficient supply to system-security services. To solve this problem, more government support would be needed, for instance, by the Capacity Investment Scheme (CIS), in order to incentivise more storage in the NEM.

- **Market distortion and higher market prices**. For batteries, costs to manage the RRO would need to be recovered through higher bid prices in generation services. This would make more expensive scheduled generators more competitive in the bid stack, ultimately leading to higher prices for consumers.[57]

## A.3 Excluding batteries from the RRO would unlock immediate market benefits

The proponents have argued that removing the RRO requirements from batteries would produce immediate market and system benefits (especially for grid security) consistent with the NEO.[58] The proponents also indicated that the exemption would incur minimal implementation costs. By de-risking batteries from RRO compliance, the rule change would also contribute to savings in government incentives (e.g. within the CIS) that would be needed to support storage buildout.[59]

## A.4 The process to date

On 30 May 2024, the Commission published a notice advising of the initiation of the rule making process and consultation in respect of the rule change request.[60] A consultation paper identifying specific issues for consultation was also published. Submissions closed on 4 July 2024. The Commission received 19 submissions as part of the first round of consultation. The Commission considered all issues raised by stakeholders in submissions. Issues raised in submissions are discussed and responded to throughout this draft rule determination. A summary of other issues raised in submissions and the Commission's response to each issue is contained in Appendix E.

57 AEMC. Consultation paper. National Electricity Amendment (Retailer Reliability Obligation Exemption for bi-directional units) Rule. p.5.

58 The rule change request stated that batteries currently provide around 40% of the market share of FCAS services in South Australia, and for the new 1-second very fast FCAS, the market share increases to 100%. Rule change request, p.5.

59 Rule change request, p.13.

60 This notice was published under section 95 of the NEL.

# B Regulatory impact analysis

The Commission has undertaken regulatory impact analysis to make its draft determination.

## B.1 Our regulatory impact analysis methodology

Our regulatory impact analysis was informed by stakeholder submissions to the consultation paper and in response to the Commission's *Review of the operations of the RRO*.[61]

The Commission has designed its draft rule to ensure that storage technologies are appropriately incentivised to provide critical system services in the operational timeframe without compromising the policy objective of the RRO.

**We considered a range of policy options**

The Commission compared and analysed three broad options:

- the rule proposed in the rule change request
- a business-as-usual scenario where we do not make a rule
- a more preferable rule featuring excluding storage assets and that also addresses hybrids.

These options are described in Chapter 2.

**We identified who would affected and assessed the benefits and costs of each policy option**

The Commission's regulatory impact analysis for this rule change used qualitative methodologies. It involved identifying the stakeholders impacted and assessing the benefits and costs of policy options. The depth of analysis was commensurate with the potential impacts. The Commission focused on the types of impacts within the scope of the NEO.

Table B.1 summarises the regulatory impact analysis the Commission carried for this rule change. Based on this regulatory impact analysis, the Commission evaluated the primary potential costs and benefits of policy options against the assessment criteria. The Commission's determination considered the benefits of the options minus the costs.

61 Final report found here.

**Table B.1: Regulatory impact analysis methodology**

| Assessment criteria | Primary costs Low, medium or high | Primary benefits Low, medium or high | Stakeholders affected | Methodology<br>QT = quantitative, QL = qualitative |
|---|---|---|---|---|
| Safety, security & reliability – services and outcomes for system security | Nil | Draft rule provides greater certainty around provision of system security services during reliability-gap periods (H) | • Storage owners and operators<br>• AEMO<br>• All electricity customers | • QL: Stakeholder feedback that removing risks caused by the obligations of the RRO may lead to a more cost-effective provision of system-security services (i.e., a greater pool of storage assets that can provide those services during reliability gaps). |
| Principle of market efficiency | Nil | Draft rule removes operational risks for storage assets, which may have flow-on effects into encouraging investment in energy storage (M-H) | • Storage owners and operators<br>• All electricity customers | • As above.<br>• QL: Stakeholder feedback that de-risking this particular technology class does not cause higher risks for other Market Customers liable to the RRO. |
| Implementation considerations -cost and complexity | Nil/Low | Nil | • Storage owners and operators<br>• AEMO<br>• AER | • QL: Minimal changes in the Rules and procedural guidelines, given that the change consists of an exemption instead of new market arrangements. |

# C Analysis on historical dispatch data of batteries and pumped hydro assets during high-price periods

The values in tables C.1 - C.4 below show the cumulative GWh across trading intervals where the price is greater than $5000/MWh for 2022 and 2023 and for each battery or PHES asset DUID.

This analysis of historical data shows that BESS and PHES assets are net generators, not net loads, during high-price periods. In the analysis we have used the wholesale price >$5,000/MWh to represent periods of tight supply and demand. In this way the analysis acts as a proxy for a reliability-gap periods.

The very nature of prices during reliability gap periods would make storage assets highly unlikely to charge in a way that increases the level of liability, or compliance costs, for other liable entities under the RRO.

**Table C.1: BESS analysis 2022**

| BESS name | DUID Load | DUID Generation | Load (GWh) | Generation (GWh) | Generation/Load |
|---|---|---|---|---|---|
| Gannawarra Energy Storage System | GANNBL1 | GANNBG1 | 0.000124436 | 0.013744681 | 11046% |
| Hornsdale Power Reserve Unit 1 | HPRL1 | HPRG1 | 0.014566667 | 0.614786762 | 4221% |
| Lake Bonney Battery Energy Storage | LBBL1 | LBBG1 | 0.019845842 | 0.197620833 | 996% |
| Victorian Big Battery | VBBL1 | VBBG1 | 0.0175 | 0.182711178 | 1044% |
| Wallgrove Grid Battery project | WALGRVL1 | WALGRVG1 | 0.005511126 | 0.121210922 | 2199% |
| Wandoan South BESS | WANDBL1 | WANDBG1 | 0.001976964 | 0.335944153 | 16993% |

Source: AEMO's Market Management System database from initial MW at the beginning of each dispatch interval. The analysis run on total MW cleared at the end of each dispatch interval produced the same conclusion.

**Table C.2: BESS analysis 2023**

| BESS name | DUID Load | DUID Generation | Load (GWh) | Generation (GWh) | Generation/Load |
|---|---|---|---|---|---|
| Bulgana Green Power Hub - BESS | BULBESL1 | BULBESG1 | 0 | 0.004695 | NA |
| Gannawarra Energy Storage System | GANNBL1 | GANNBG1 | 0.000158737 | 0.002920461 | 1840% |
| Hazelwood Battery Energy Storage System (HBESS) | HBESSL1 | HBESSG1 | 0 | 0.025033333 | NA |
| Hornsdale Power | HPRL1 | HPRG1 | 0.00495 | 0.266758788 | 5389% |

| BESS name | DUID Load | DUID Generation | Load (GWh) | Generation (GWh) | Generation/Load |
|---|---|---|---|---|---|
| Reserve Unit 1 | | | | | |
| Lake Bonney Battery Energy Storage | LBBL1 | LBBG1 | 0.012554167 | 0.096983333 | 773% |
| Riverina Energy Storage System 1 | RESS1L | RESS1G | 0.005005549 | 0.014217239 | 284% |
| Torrens Island BESS | TIBL1 | TIBG1 | 0.014230833 | 0.023406668 | 164% |
| Victorian Big Battery | VBBL1 | VBBG1 | 0 | 0.013841667 | NA |
| Wallgrove Grid Battery project | WALGRVL1 | WALGRVG1 | 3.31992E-05 | 0.062755643 | 189028% |
| Wandoan South BESS | WANDBL1 | WANDBG1 | 0.002567973 | 0.189661357 | 7386% |

Source: AEMO's Market Management System database from initial MW at the beginning of each dispatch interval. The analysis run on total MW cleared at the end of each dispatch interval produced the same conclusion.

**Table C.3: PHES analysis 2022**

| PHES name | DUID Load | DUID Generation | Load (GWh) | Generation (GWh) | Generation/Load |
|---|---|---|---|---|---|
| Wivenhoe 1 | PUMP1 | W/HOE#1 | 0.02052667 | 4.195603324 | 20440% |
| Wivenhoe 2 | PUMP2 | W/HOE#2 | 0 | 3.265151674 | NA |
| Shoalhaven | SHPUMP | SHGEN | 0 | 0.523213875 | NA |
| Tumut 3 | SNOWYP | TUMUT3 | 0 | 4.973701248 | NA |

Source: AEMO's Market Management System database from initial MW at the beginning of each dispatch interval. The analysis run on total MW cleared at the end of each dispatch interval produced the same conclusion.

**Table C.4: PHES analysis 2023**

| PHES name | DUID Load | DUID Generation | Load (GWh) | Generation (GWh) | Generation/Load |
|---|---|---|---|---|---|
| Wivenhoe 1 | PUMP1 | W/HOE#1 | 0 | 0.82127498 | NA |
| Wivenhoe 2 | PUMP2 | W/HOE#2 | 0 | 0.504619153 | NA |
| Shoalhaven | SHPUMP | SHGEN | 0 | 0.337094078 | NA |
| Tumut 3 | SNOWYP | TUMUT3 | 0 | 4.645866665 | NA |

Source: AEMO's Market Management System database from initial MW at the beginning of each dispatch interval. The analysis run on total MW cleared at the end of each dispatch interval produced the same conclusion.

# D Legal requirements to make a rule

This appendix sets out the relevant legal requirements under the NEL for the Commission to make a draft rule determination.

## D.1 Draft rule determination and draft rule

In accordance with section 99 of the NEL, the Commission has made this draft rule determination for a more preferable draft rule in relation to the rule proposed by Iberdrola, Neoen and Tesla.

The Commission's reasons for making this draft rule determination are set out in Chapter two.

A copy of the more preferable draft rule is attached to and published with this draft determination. Its key features are described in Chapter three.

## D.2 Power to make the rule

The Commission is satisfied that the more preferable draft rule falls within the subject matter about which the Commission may make rules.

The more preferable draft rule falls within section 34(1) of the NEL as it relates to regulating:

- the operation of the national electricity market;
- the operation of the national electricity system for the purposes of the safety, security and reliability of the system;
- the activities of persons, including Registered Participants; and
- any matter or thing related to, or necessary or expedient for, the purposes of the Retailer Reliability Obligation.

The more preferable draft rule also falls within the matters set out in Schedule 1 to the NEL as it relates to the compliance and reporting obligations of liable entities (item 6D).

## D.3 Commission's considerations

In assessing the rule change request the Commission considered:

- its powers under the NEL to make the draft rule, including a more preferable draft rule
- the rule change request
- submissions received during first round consultation
- the Commission's analysis as to the ways in which the draft rule will or is likely to better contribute to the achievement of the NEO
- the application of the draft rule to the Northern Territory
- input and advice from AEMO on the feasibility of an alternative option to a rule change.

There is no relevant Ministerial Council on Energy (MCE) statement of policy principles for this rule change request.[62]

62 Under s. 33 of the NEL and s. 73 of the NGL the AEMC must have regard to any relevant MCE statement of policy principles in making a rule. The MCE is referenced in the AEMC's governing legislation and is a legally enduring body comprising the Federal, State and Territory Ministers responsible for energy. On 1 July 2011, the MCE was amalgamated with the Ministerial Council on Mineral and Petroleum Resources. In December 2013, it became known as the Council of Australian Government (COAG) Energy Council. In May 2020, the Energy National Cabinet Reform Committee and the Energy Ministers' Meeting were established to replace the former COAG Energy Council.

## D.4 Making electricity rules in the Northern Territory

The NER, as amended from time to time, apply in the Northern Territory, subject to modifications set out in regulations made under the Northern Territory legislation adopting the NEL.[63] Under those regulations, only certain parts of the NER have been adopted in the Northern Territory.

As the more preferable draft rule relates to parts of the NER that apply in the Northern Territory, the Commission is required to assess Northern Territory application issues, described below.

**Test for scope of "national electricity system" in the NEO**

Under the NT Act, the Commission must regard the reference in the NEO to the "national electricity system" as a reference to whichever of the following the Commission considers appropriate in the circumstances having regard to the nature, scope or operation of the proposed rule:[64]

1. the national electricity system
2. one or more, or all, of the local electricity systems[65]
3. all of the electricity systems referred to above.

**Test for differential rule**

Under the NT Act, the Commission may make a differential rule if it is satisfied that, having regard to any relevant MCE statement of policy principles, a differential rule will, or is likely to, better contribute to the achievement of the NEO than a uniform rule.[66] A differential rule is a rule that:

- varies in its term as between:
  - the national electricity systems, and
  - one or more, or all, of the local electricity systems, or
- does not have effect with respect to one or more of those systems

but is not a jurisdictional derogation, participant derogation or rule that has effect with respect to an adoptive jurisdiction for the purpose of s. 91(8) of the NEL.

A uniform rule is a rule that does not vary in its terms between the national electricity system and one or more, or all, of the local electricity systems, and has effect with respect to all of those systems.[67]

The Commission's draft determinations in relation to the meaning of the "national electricity system" and whether to make a uniform or differential rule are set out in chapter 2.

## D.5 Civil penalty provisions and conduct provisions

The Commission cannot create new civil penalty provisions or conduct provisions. However, it may recommend to the Energy Ministers' Meeting that new or existing provisions of the NER be classified as civil penalty provisions or conduct provisions.

The more preferable draft rule does not amend any clauses that are currently classified as civil penalty provisions or conduct provisions under the National Electricity (South Australia) Regulations.

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63 These regulations under the NT Act are the National Electricity (Northern Territory) (National Uniform Legislation) (Modifications) Regulations 2016

64 Clause 14A of Schedule 1 to the NT Act, inserting section 88(2a) into the NEL as it applies in the Northern Territory.

65 These are specified Northern Territory systems, listed in schedule 2 of the NT Act.

66 Clause 14B of Schedule 1 to the NT Act, inserting section 88AA into the NEL as it applies in the Northern Territory.

67 Clause 14 of Schedule 1 to the NT Act, inserting the definitions of "differential Rule" and "uniform Rule" into section 87 of the NEL as it applies in the Northern Territory.

The Commission does not propose to recommend to the Energy Ministers' Meeting that any of the proposed amendments made by the more preferable draft rule be classified as civil penalty provisions or conduct provisions.

# E Summary of other issues raised in submissions

**Table E.1: Summary of other issues raised in submissions to the consultation paper**

| Stakeholder | Issue | Response |
|---|---|---|
| AGL | AGL recommended reducing the minimum size of market contract volumes under the Market Liquidity Obligation from 5MW to 2MW. The change would be 'an interim measure' to reduce the compliance burden that the RRO places on retailers and AEMO and reduce compliance costs that are passed on to consumers. (p.3 of AGL's submission to the consultation paper). | This is out of scope for this rule change. Any changes to the MLO would need to be considered as a separate rule change. |
| Clean Energy Investor Group | CEIG advocated storage assets to be exempted from network charges applied to charging operations from the grid, on the basis that network charges are also applied to the discharging of energy from the battery to the grid. CEIG claimed that a doubling of network charges creates uncertainty for investors. (p.3 of CEIG's submission to the consultation paper). | The Commission notes this is out of scope for this rule change and was addressed as part of the IESS rule change. |
| Clean Energy Investor Group | CEIG claimed that "new services required to support the clean power system are not being developed, hindering the creation of markets for inertia and reserves."<br>(pp. 3-4 of CEIG's submission to the consultation paper). | This issue is out of scope for this rule change. The Commission notes the opportunities for stakeholders to provide input to the rule change 'Efficient provision of inertia', noting that the Commission plans to publish a Directions Paper in November 2024. |
| Origin | Origin noted the importance of reviewing the 'policy efficiency' of the RRO and its fitness in supporting reliability in the NEM.<br>(p. 2 of Origin's submission to the consultation paper). | This issue is out of scope for this rule change. As noted in the Review of the Retailer Reliability Obligation, the Commission considers that the Commonwealth should take a holistic view of the policy mechanisms that support reliability, including the RRO, as part of its work on the future design of the market. |

# Abbreviations

| | |
|---|---|
| AEMC | Australian Energy Market Commission |
| AEMO | Australian Energy Market Operator |
| AER | Australian Energy Regulator |
| BDU | Bi-directional unit |
| BESS | Battery Energy Storage System |
| Commission | See AEMC |
| FCAS | Frequency Control Ancillary Services |
| IESS | Integrating energy storage systems into the NEM (rule change) |
| IRP | Integrated Resource Provider |
| IRS | Integrated Resource System |
| NEL | National Electricity Law |
| NEO | National Electricity Objective |
| NER | National Electricity Rules |
| PHES | Pumped Hydro Energy Storage |
| PoLR | Procurer of Last Resort |
| Proponents | The proponents of the rule change request to the Commission |
| RRO | Retailer Reliability Obligation |
| SAPS | Stand Alone Power System |