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Electricity Authority | Te Mana Hiko

By email to:

OperationsConsult@ea.govt.nz.



Tēnā koutou,

RESPONSE TO SUBMISSION ON CODE AMENDMENT CONSULTATION – BESS MARKET ARRANGEMENTS

Unison Networks Limited (Unison) and Centralines Limited (Centralines) are consumer-owned electricity distribution businesses serving communities in Hawke's Bay, Taupō, Rotorua, and Central Hawke's Bay. Thank you for the opportunity to provide feedback on the Electricity Authority's consultation paper, Wholesale Market Arrangements for Battery Energy Storage Systems (BESS).

As consumer-owned entities, we operate in the best interests of the communities we serve. Guided by our vision, and values, we strive to deliver economic benefits to both our customers and community shareholders, while championing a sustainable energy future. We are committed to maintaining the right balance between keeping electricity affordable and making strategic investments that secure the long-term reliability and resilience of our network. In all aspects of our operations, we place strong emphasis on meeting industry compliance requirements, ensuring we uphold all relevant standards. This approach not only supports New Zealand's transition to new energy solutions but also enables our communities to access cleaner, smarter, and more flexible energy options, now and for generations to come.

Executive Summary

Unison and Centralines are broadly supportive of the Authority's proposed amendments to enable more effective participation of BESS in the wholesale market. This package is directionally sound and should improve dispatch efficiency, price discovery, and overall system flexibility as BESS penetration increases.

Our support is conditional on the arrangements, remaining operationally practical, proportionate, and aligned with the broader direction of market reform. In particular, the effectiveness of the package will depend on how well it integrates with related workstreams, including 5-minute settlement, hybrid participation models, and emerging flexibility markets.

A key risk is that elements of the package, particularly in relation to gate closure, could introduce unintended competitive distortions if applied on a technology-specific basis. Differentiated treatment of BESS has the potential to advantage certain participants and

create opportunities for strategic behavior without delivering system-wide efficiency gains. Any such changes should be approached cautiously, framed as transitional, and subject to a broader review of wholesale trading arrangements across all participants.

More broadly, the Authority should continue to prioritise:

- Technology-neutral design, focusing on capabilities rather than asset type
- Coordinated reform, ensuring alignment across interdependent workstreams
- Proportionate implementation, avoiding unnecessary compliance burden while BESS participation remains relatively limited
- System-level efficiency, ensuring reforms deliver net benefits rather than shifting advantages between participants

Getting these settings right is essential. Poorly calibrated arrangements risk constraining efficient utilisation of BESS, weakening price signals, and increasing overall system costs. Conversely, a coherent and coordinated framework will enable BESS to deliver value across both wholesale and distribution contexts, supporting an efficient and resilient electricity system over time.

1. Preferred Option - 1

We support requiring BESS to be dispatchable while consuming, as this will improve dispatch efficiency and enable more effective participation in the wholesale market. This is particularly important as BESS penetration increases and their role in system balancing becomes more significant.

However, this support is contingent on sufficient flexibility being retained to reflect real-time operational constraints, including state of charge management and broader system conditions. Overly rigid requirements risk constraining efficient operation and limiting the ability of BESS to respond dynamically to market signals

As BESS penetration increases, charging behaviour will become a material driver of wholesale market outcomes and real-time system operation. Unconstrained or non-dispatchable charging risks undermining price signals, reducing dispatch efficiency, and limiting the system operator's ability to manage increasingly dynamic supply-demand conditions. Requiring dispatchable charging is a necessary step to ensure that market arrangements keep pace with the operational value of battery storage.

Utility-scale batteries are inherently flexible and highly controllable assets, capable of rapidly adjusting both load and generation in response to dispatch instructions. This proposal appropriately aligns market settings with those physical capabilities and brings charging behaviour within the same control framework as other dispatchable resources.

We consider this a proportionate evolution of the market as BESS transitions from a price-taker at the margins to an active and system-relevant participant.

Implementation detail will be critical. The Authority should ensure that compliance obligations are grounded in the operational realities of BESS and do not create unnecessary rigidity or enforcement risk.

In practice, battery operation is dynamic. Factors such as reserve activation, network constraints, state-of-charge limits, and rapid changes in market conditions may affect a participant's ability to always follow dispatch instructions. A strict or mechanistic compliance approach risks penalising behaviour that is both efficient and system supportive.

Getting this balance right will be key to ensure the dispatchability requirement delivers its intended benefits without undermining the flexibility it is designed to unlock.

2. Single Bid and Offer Framework

We support the intent of the proposed bidding and offer arrangements, as they aim to better integrate BESS into the existing market framework and improve price formation. Ensuring that BESS can participate effectively through appropriate bid and offer structures is an important step in enabling efficient market outcomes.

This support is contingent on the requirements remaining practical to implement and avoiding unnecessary complexity. Overly complex or burdensome arrangements may increase compliance costs and create barriers to participation, particularly as the market continues to evolve.

Battery storage is a single physical asset capable of both consuming and supplying electricity, often switching states rapidly in response to system conditions and price signals. Maintaining separate bidding constructs does not reflect this operational reality and introduces unnecessary complexity and friction.

A unified bidding framework is a necessary and pragmatic step. It should improve transparency, reduce administrative burden, and enable more efficient price discovery by allowing BESS to participate in a way that reflects its continuous and dynamic operating capability.

Importantly, this proposal cannot be considered in isolation. It interacts directly with the Authority's related workstreams on 5-minute settlement and BESS and BESS-hybrid market arrangements. Together, these reforms are reshaping how fast-response and multi-mode assets participate in the wholesale market. A single, integrated bidding framework is a foundational component of that broader evolution, particularly as shorter settlement periods and hybrid configurations increase the complexity and responsiveness of these assets.

The Authority should ensure that the framework is sufficiently flexible and forward-compatible with these related reforms.

As battery deployment evolves toward hybrid configurations and dynamic participation across multiple services, there is a risk that a static or narrowly defined bidding construct will quickly become misaligned with actual operating models. This risk is amplified by the shift toward finer-grained settlement (e.g. 5-minute) and the integration of co-located assets, both of which depend on coherent, unified participation frameworks.

Taking a coordinated, future-focused approach across these interdependent reforms will be critical to avoid unnecessary complexity, reduce implementation costs, and ensure the market framework remains durable as BESS becomes a system-critical resource.

3. Full-Capacity Trading Using State-of-Charge Constraints

We support the proposed approach to state of charge management, as it recognises the importance of aligning BESS operation with market and system needs. Appropriate treatment of state of charge is critical to ensuring efficient dispatch outcomes and maintaining system reliability.

This support is subject to participants retaining appropriate flexibility to manage state of charge in response to both commercial drivers and real-time system conditions. Prescriptive requirements that do not reflect operational variability may reduce efficiency and lead to suboptimal utilisation of BESS.

At higher levels of BESS penetration, restricting offers to conservative or static limits would materially underutilise available capability and weaken price signals. Enabling full-capacity trading, subject to SoC constraints, is critical to ensuring that batteries can participate in a way that reflects their true capability while maintaining physically feasible dispatch outcomes.

This appropriately balances maximising participation with maintaining system integrity. It recognises that SoC, rather than nameplate capacity alone, is the relevant operational constraint for battery dispatch.

This is particularly important in the context of the Authority's broader reforms. As dispatch becomes more granular and assets increasingly operate across multiple services, SoC profiles will become more volatile and complex. Compliance settings will need to reflect this environment.

Striking the right balance will be vital, ensuring dispatch outcomes remain credible and enforceable, without undermining the flexibility and responsiveness that this reform is intended to unlock.

4. Retaining Existing Constrained-Off Compensation Arrangements

We support the preferred option to retain existing constrained-off compensation arrangements at this stage.

The proposed package introduces several material changes to BESS participation in the wholesale market. In this context, it is appropriate to prioritise the implementation and bedding-in of these reforms before undertaking more fundamental changes to compensation settings.

This sequencing reduces implementation risk and complexity, while allowing the Authority and participants to develop operational experience under the revised framework.

Any future review of constrained-off compensation arrangements should be evidence-based, targeted, and aligned with observed market outcomes.

At present, there is limited evidence that existing arrangements are creating material inefficiencies specific to BESS participation. Premature reform risks introducing complexity or unintended consequences without a clear problem definition.

However, as BESS penetration increases and participation becomes more system-relevant, this position may need to be revisited. A future review may be warranted where there is unambiguous evidence of:

- inefficient dispatch outcomes arising from constrained-off treatment;
- misalignment between compensation settings and BESS operating characteristics;
- distorted investment or participation signals.

Taking a staged, evidence-led approach will help ensure that any future changes are both necessary and well-targeted, while maintaining stability during the current transition phase.

5. Future Gate Closure Arrangements

While shorter gate closure could, in principle, improve the utilisation of fast-response resources such as BESS, we do not consider that there is currently sufficient evidence that these benefits would outweigh the associated system and implementation costs in the New Zealand context. Any increase in responsiveness must be assessed against the additional complexity introduced for participant systems, market processes, and System Operator functions.

BESS can respond rapidly to changing system conditions and price signals. However, to the extent that additional flexibility is required to support these capabilities, this should be enabled through system-wide, capability-based market design settings, rather than technology-specific adjustments to gate closure. Isolated changes to gate closure risk introducing complexity without delivering durable system benefits.

We therefore support a disciplined, staged approach. Priority should be given to implementing the current package of reforms and allowing sufficient time to observe how BESS participates under the revised framework. This will provide a more robust evidence base to assess whether further changes, including shorter gate closure, deliver incremental net benefits in practice.

Any progression should be contingent on demonstrated:

- improvements in dispatch efficiency and price formation;
- effective integration of fast-response technologies such as BESS; and
- clear net system benefits after accounting for implementation and operational costs.

This assessment should also be undertaken in the context of related reforms, including 5-minute settlement, given the strong interaction between settlement granularity, dispatch responsiveness, and market timing. Moving to shorter gate closure in isolation, without complementary system-wide changes, risks increasing complexity without delivering equivalent system benefits.

System-level constraint and efficiency considerations

Conceptually, wholesale market outcomes are often constrained by the tightest binding parameter rather than the most flexible participant. Improving flexibility for a single participant class does not necessarily increase overall market efficiency where other constraints remain binding.

Reducing gate closure for BESS alone would therefore be unlikely to deliver proportional system benefits if other participant classes remain subject to tighter constraints. Instead, these risks shifting relative advantage between participants without improving overall dispatch efficiency or price formation outcomes.

Competitive neutrality and gaming risk

Introducing differentiated gate closure arrangements for BESS only risks creating unintended competitive distortions between technologies providing similar services. Shorter gate closure could advantage BESS relative to other fast-response resources (including hydro and demand response), potentially enabling strategic bidding behaviour, as identified by the Authority.

To mitigate this risk, any move to shorter gate closure for BESS should be clearly framed as a transitional measure, subject to a time-bound review of wholesale trading arrangements. That review should explicitly consider whether gate closure settings remain appropriate across all participant types, with a view to maintaining competitive neutrality and aligning arrangements with a capability-based, rather than technology-specific, framework over time.

Enduring changes to gate closure should be considered holistically across the market, rather than on a technology-specific basis, to avoid embedding structural advantages or distortions as participation models evolve.

International Context

International experience supports improving responsiveness through system-wide reforms, including shorter dispatch and settlement intervals, rather than technology-specific gate closure arrangements.

This suggests that flexibility is most effective when implemented consistently across asset classes, and that gate closure settings should be considered alongside broader market design, including dispatch intervals, settlement granularity, and ancillary services.

However, not all elements are directly transferable. New Zealand's hydro-dominated system and existing dispatch framework mean the costs and benefits of shorter gate closure may differ, particularly while BESS participation remains relatively limited.

Any assessment should be coordinated with related reforms, including 5-minute settlement, given the strong interaction between settlement granularity, dispatch responsiveness, and market timing.

6. Interaction with Distribution-Level Flexibility Markets

While the consultation appropriately focuses on wholesale market arrangements, we encourage the Authority to recognise the growing interaction between these reforms and emerging distribution-level flexibility markets.

The proposed changes will enable BESS to respond more efficiently to wholesale market signals and dispatch outcomes. As deployment increases, batteries will not operate in a single market context, they will increasingly optimise across multiple, concurrent value streams, including wholesale energy, reserves, network support services, local flexibility markets, non-network solutions, and future distributed energy resource (DER) markets.

This creates a structural need for coordination. Wholesale market signals alone will not always align with distribution network conditions or local system needs. For example, a battery responding efficiently to wholesale price signal may exacerbate local network constraints, while a battery providing network support or local flexibility may need to operate in a manner that diverges from wholesale dispatch outcomes.

As these markets develop, participants will be required to actively manage competing or overlapping signals. Without clear design consideration, there is a risk of:

- conflicting operational incentives;
- inefficient dispatch across system layers; and
- underutilisation of flexible resources.

This interface is no longer peripheral; it is becoming a core feature of the evolving electricity system and warrants recognition within the Authority's broader market design programme.

Future market design should therefore:

- support efficient coordination between wholesale and distribution-level services;
- minimise conflicting incentives across market layers;
- preserve optionality for emerging flexibility markets and non-network solutions;
- enable coherent participation across multiple services; and
- support batteries delivering value to both wholesale and distribution system needs where this is efficient.

7. Technology – Neutral Market Design

While batteries have characteristics that may justify targeted arrangements in the near term, it will be important for the Authority to maintain a technology-neutral design philosophy wherever practicable.

Over time, market arrangements should transition toward recognising the services and capabilities provided by an asset, rather than prescribing rules based on specific technologies. This approach will support innovation, reduce barriers to entry for emerging technologies, and avoid embedding assumptions that may quickly become outdated.

A capability-based framework will also reduce the need for iterative Code amendments as innovative technologies and hybrid configurations develop. Designing with this principle in

mind will help ensure that market arrangements remain adaptable, proportionate, and durable as the system evolves.

Conclusion

The package represents a sensible and necessary transformation of the wholesale market framework. It appropriately recognises the operating characteristics of BESS and should improve dispatch efficiency, support more effective participation, and enable a more flexible and resilient electricity system.

While we support the proposed amendments, the effectiveness of these reforms will ultimately depend on how well they integrate with the Authority's broader programme of market development. Continued focus will be necessary to ensure that the framework remains coherent, proportionate, and adaptable as battery participation increases and operating models evolve.

Future work should:

- support efficient coordination between wholesale and distribution-level flexibility markets;
- ensure implementation requirements remain proportionate and scalable as participation grows;
- maintain practical, operable compliance settings that reflect real-world battery operation; and
- preserve flexibility for future market and technology developments, including hybrid configurations.

These considerations are key to ensuring that the benefits of the current reforms are realised in practice and sustained over time as batteries increasingly operate across multiple services and system layers.

A coordinated approach across these workstreams will be essential. Without it, there is a risk of fragmented design, duplicative compliance requirements, and inefficient investment signals. Conversely, a coherent and integrated framework will better enable batteries to deliver system value across both wholesale and distribution contexts.

In our view, the key priority is not further incremental change but ensuring that the current package is implemented in a way that is proportionate, aligned across reforms, and capable of scaling with the role batteries will play in the future system.

Ngā mihi nui,

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Appendix A Code Amendment Comment (Feedback)

A1. Overview and framing.

The proposed amendments represent a substantial step forward in recognising BESS within the wholesale market framework. In particular, the introduction of state-of-charge (SoC) constructs, revised dispatch arrangements, and enhanced visibility provisions reflects the increasing operational significance of BESS.

However, while the amendments introduce BESS-specific provisions, much of the drafting continues to reflect legacy assumptions based on uni-directional generation and load. In our view, this creates three underlying structural risks:

- continued treatment of BESS as separate generation and consumption components, rather than a single bi-directional asset;
- compliance and dispatch settings that do not fully reflect the dynamic and continuously evolving nature of SoC; and
- incentives for conservative behaviour, potentially reducing the efficient utilisation of BESS capability.

These issues are not isolated drafting matters; they reflect a broader tension between the existing Code structure and the operational reality of modern, flexible assets.

This will become increasingly important as BESS deployment grows and as related reforms progress, including the Authority's work on 5-minute settlement and BESS-hybrid market arrangements.

A2. Overarching drafting principle

While some transitional arrangements are appropriate, the Code should progressively move toward:

- recognising BESS as a single, bi-directional system;
- focusing on net behaviour at the connection point; and
- reflecting continuous, state-dependent operation.

A3. Part 1 – Definitions and Core Concepts

Clause	Issue	Implication	Submission comment / recommended change
Clause 1.1 – Definitions	Retains generation/load constructs	Splits BESS conceptually	Reinforce BESS as single bi-directional system
Clause 1.1 – bona fide reason	SoC exclusions	Limits dynamic response	Clarify boundary for SoC-driven change

A4. Part 8 – Common Quality Requirements

Clause	Issue	Implication	Submission comment / recommended change
Clause 8.25(5)	Separate consumption/output	Reinforces separation	Reframe around net behaviour
Clause 8.25(5) (aa)	Dual bids/offers	Structural separation	Align with integrated dispatch approach

A5.1 Dispatch and participation

Clause	Issue	Implication	Submission comment / recommended change
Clause 13.6A	Dual offers/bids	Dual asset framing	Transitional approach only
Clause 13.25A	≤10MW exception	Fragmented obligations	Ensure proportional scaling

A5.2 Trading formulation

Clause	Issue	Implication	Submission comment / recommended change
Clause 13.9AA	Split capability	Dual classification	Move to unified capability envelope
Clause 13.10(ab)	Station level	System view	Strongly support
Clause 13.12(2)	10 bands	Static	Ensure dynamic support

A5.3 SoC and dynamic operation

Clause	Issue	Implication	Submission comment / recommended change
Clause 13.9(e)(ii)	Loss factors	Static modelling	Allow state-dependent losses
Clause 13.58A	SoC telemetry	Improves modelling	Strongly support
Clause 13.69B	SoC inputs	Period based	Recognise continuous evolution

A5.4 Gate closure

Clause	Issue	Implication	Submission comment / recommended change
Clause 13.18B	Pre-alignment	Conservative behaviour	Avoid under-utilisation bias
Clause 13.19AAA	Revision limits	Inflexibility	Allow unavoidable SoC changes
Clause 13.19AB	Process rigid	Distortion risk	Ensure efficient dispatch

A5.5 Dispatch logic

Clause	Issue	Implication	Submission comment / recommended change
Clause 13.57	BESS dispatch	Positive	Optimise full range
Clause 13.40A	Reserve linkage	Directional bias	Enable all states

A5.6 Reserve services

Clause	Issue	Implication	Submission comment / recommended change
Clause 13.38(2A)	Separate reserve	Split structure	Acknowledge single asset
Clause 13.44(1A)	No SoC alignment	Mismatch risk	Align with SoC

A5.7 Classification removal

Clause	Issue	Implication	Submission comment / recommended change
Clause 13.3A	Remove load classification	Positive	Support
Clause 13.3E/F	Remove pathways	Clarity	Ensure consistency

Format for submissions

Wholesale market arrangements for battery energy storage systems – Code amendment consultation

Submitter	Unison Limited and Centralines	
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Questions	Comments
<i>Issue 1: Dispatch requirements for BESS when charging</i>	
Q1. Do you agree with our proposal to require BESSs to be dispatchable while consuming?	Yes. We support requiring BESS to be dispatchable while consuming. As BESS penetration increases, charging behaviour will become increasingly material to wholesale market outcomes and system operation. Dispatchable charging better reflects the physical characteristics of utility-scale batteries, improves system operator visibility and dispatch efficiency, and supports more efficient market outcomes. Compliance arrangements should, however, remain practical and recognise the dynamic nature of battery operation, including reserve activation, state-of-charge limitations, and network events.
Q2. Do you have any comments on our proposed Code drafting for issue 1?	We support the intent of the proposed drafting. The drafting should, however, make clear that compliance obligations are to be applied in a way that recognises reasonable operational variability and good faith efforts to follow dispatch instructions. In particular, the Code should avoid a mechanistic compliance outcome where temporary deviations arise from reserve activation, rapid state-of-charge changes, or network-related constraints.
<i>Issue 2: bids and offer forms for BESS</i>	
Q3. Do you agree with our proposal to have separate offers and dispatch for interruptible load and generation reserve?	Yes. We agree with separate offers and dispatch for interruptible load and generation reserve where this better reflects the distinct operational characteristics of charging and discharging services. This should support clearer market signals and more efficient reserve scheduling, provided the arrangements remain workable for participants and consistent with the physical operation of a single BESS asset.
Q4. Do you agree with our proposal that BESS owners have 10 price bands for their bids and 10 price bands for their offers. If not, how many price bands do you think they should have?	Yes. We agree that 10 price bands for bids and 10 price bands for offers are appropriate. This appears sufficient to support meaningful price differentiation for BESS participation without introducing unnecessary complexity. The Authority should keep this under review as

	participation models evolve, particularly if hybrid arrangements or more dynamic market settings create a stronger case for additional granularity.
Q5. Do you agree with our proposal that BESS owners not be required to submit maximum up and down ramp rates?	Yes. We agree BESS owners should not be required to submit maximum up and down ramp rates at this stage. Batteries are fast-response assets, and the proposed arrangements should avoid imposing unnecessary requirements where the practical benefit is limited. If future operational experience indicates that ramp-rate information becomes necessary for system operation or dispatch efficiency, the Authority could revisit this in a later review.
Q6. Do you agree with our proposal to address issue 2?	Yes. Overall, we support the Authority's proposal to address issue 2. A single bid and offer framework better reflect that battery storage is a single physical asset capable of both consuming and supplying electricity. This should reduce administrative complexity, improve transparency, and support more efficient participation.
Q7. Do you have any comments on our proposed Code drafting for issue 2?	We support the overall drafting direction for issue 2. The drafting should remain sufficiently flexible to accommodate future BESS-hybrid configurations and other emerging technologies. The Authority should avoid embedding assumptions that would require repeated redesign as battery participation models evolve or as related reforms, including 5-minute settlement and hybrid arrangements, progress.
<i>Issue 3: gate closure arrangements for BESS</i>	
Q8. Should BESS owners be able to withhold energy if requested to do so in a grid emergency?	Yes, in limited and clearly defined circumstances. BESS owners should be able to withhold energy if requested to do so in a genuine grid emergency where this is necessary to maintain system security or support emergency management actions. Any such provision should be narrowly framed, transparent, and supported by clear operational criteria to avoid uncertainty or unintended market impacts.
Q9. Should BESS bid and offer arrangements be aligned?	Yes. In principle, BESS bid and offer arrangements should be aligned wherever practicable. Alignment will reduce complexity, better reflect the physical reality of batteries operating as a single asset, and support more coherent participation. This is particularly

	important as the Authority considers the interaction with 5-minute settlement and future BESS-hybrid arrangements.
Q10. Do you think greater clarity is needed around the circumstances which allow trade revisions after gate closure?	Yes. Greater clarity would be helpful. Clearer parameters around the circumstances in which trade revisions are permitted after gate closure would improve certainty for participants, support consistent administration, and reduce the risk of disputes. Any exceptions should be tightly defined and linked to circumstances where revisions are clearly necessary and operationally justified.
Q11. Do you agree that, to align with forecast schedules, the SoC constraint that applies in the dispatch schedule should be based on energy availability over a half hour period? If not, do you think it should be based on energy availability over a 5-minute period, or the energy availability over the time remaining before the end of the trading period?	On balance, we support using energy availability over a half-hour period to align with forecast schedules at this stage. This appears to be a pragmatic approach within the current market design. However, the Authority should keep this under review considering its related 5-minute settlement work, as shorter settlement and more granular dispatch settings may strengthen the case for a shorter assessment period over time.
Q12. Should state of charge constraints account for round trip losses? If not, why not?	Yes. State-of-charge constraints should account for round-trip losses to improve the physical accuracy of dispatch and avoid overstating available capability. The treatment of losses should, however, be practical, transparent, and not so complex that it introduces undue compliance burden or reduces participant confidence in the framework.
Q13. Do you agree that the WITS manager and clearing manager require SoC constrained bid and offer information to perform their functions?	Yes. We agree that the WITS manager and clearing manager require SoC-constrained bid and offer information to perform their functions effectively. Access to this information should improve transparency, settlement accuracy, and the administration of the arrangements, provided information requirements remain proportionate and targeted to operational need.
<i>Issue 3: final proposal</i>	
Q14. Do you agree with our proposal to make gate closure arrangements the same between operational states and between grid-connected and embedded BESSs?	Yes. We support making gate closure arrangements the same between operational states and between grid-connected and embedded BESSs. A consistent framework should reduce complexity, improve transparency, and avoid creating unnecessary distortions between asset configurations. Consistency will become increasingly important as battery participation grows and operating models become more diverse.

Q15. If we decided to make gate closure one hour for embedded BESSs, do you consider a legacy clause may be warranted? If so, what do you consider the details of that clause should be?	If the Authority were to adopt a one-hour gate closure for embedded BESSs, a legacy clause may be warranted where material system, contractual, or metering changes would otherwise be required in the short term. Any such clause should be tightly targeted, time-limited, and subject to clear transition criteria so that it does not entrench long-term inconsistency.
Q16. Do you agree with how we propose to incorporate round-trip losses in calculating state of charge constraints? If not, is there a better alternative to ensure state of charge constraint accuracy?	We generally agree with incorporating round-trip losses in calculating SoC constraints, provided the method is practical and accurately reflects physical battery behaviour. The Authority should ensure the methodology can be implemented consistently and does not create unnecessary complexity or compliance risk. If a simpler approach can deliver materially similar accuracy, that may be preferable from a proportionality perspective.
Q17. Are there any other factors that need to be taken into account in adjusted capacities and limits?	Potentially relevant factors may include minimum state-of-charge requirements for reserve provision, degradation management settings, network-related operating constraints, and any operational limits associated with hybrid configurations. The Authority should ensure the framework can accommodate such factors where they are material to physically achievable dispatch outcomes.
Q18. Are there any other reasons why a BESS owner should be able to, or need to, revise their trades after gate closure? If so, what?	In addition to the circumstances identified by the Authority, revisions after gate closure may be justified where necessary to reflect genuine operational changes such as unexpected state-of-charge movements, reserve activation, network constraints, or system operator instructions. Any ability to revise should remain tightly controlled and limited to circumstances where revisions are clearly necessary, verifiable, and consistent with maintaining market integrity.
Q19. Do you agree with our proposal to address issue 3?	Yes. On balance, we support the Authority's final proposal to address issue 3. The proposal strikes a reasonable balance between enabling fuller BESS participation and maintaining practical, administrable market settings. We encourage the Authority to continue monitoring operation in practice, particularly as BESS penetration increases and related reforms progress.
Q20. Do you have any comments on our proposed Code drafting to address issue 3?	We support the overall drafting approach for issue 3. The drafting should clearly distinguish between normal operational variability and

	circumstances that warrant trade revision or compliance concern. As with the dispatchability and SoC arrangements more generally, the Code should recognise that battery operation is inherently dynamic and should not create unnecessary rigidity or conservative operating incentives.
<i>Issue 3: Interim proposal</i>	
Q21. Are there any other factors that need to be taken into account in adjusted capabilities under our interim proposal??	Under the interim proposal, the Authority should also consider factors such as reserve activation, losses, minimum SoC requirements, network constraints, and hybrid plant operating interactions where these materially affect adjusted capabilities. The framework should be capable of recognising relevant physical constraints without becoming unnecessarily complex.
Q22. Are there any other reasons why a BESS owner should be able to, or need to, revise their trades after gate closure under our interim proposal? If so, what are these reasons?	Under the interim proposal, other reasons for revising trades after gate closure may include material and unforeseen changes in SoC, reserve activation, network events, or system operator instructions. As with the final proposal, any such exceptions should be carefully limited and supported by clear criteria.
Q23. Do you agree with our interim proposal to address issue 3?	We support the interim proposal as a workable transitional option if the Authority determines it is needed. However, our preference is for arrangements that are durable, proportionate, and aligned with the broader direction of reform, including 5-minute settlement and future BESS-hybrid participation.
Q24. Do you have any comments on our proposed Code drafting for our interim proposal to address issue 3?	The proposed drafting for the interim proposal should be as simple and transitional as possible. If adopted, the drafting should avoid embedding arrangements that would require unnecessary future redesign or create inconsistency with the final framework. Any interim provisions should be clearly identified and supported by a pathway to longer-term arrangements.
<i>Issue 4: constrained off payments</i>	
Q.25. Do you agree with the Authority's decision not to propose removing constrained off payments for BESSs while charging at this stage? If not, why not?	We support the Authority's decision not to propose removing constrained-off payments for BESSs while charging at this stage. The current package already introduces several material changes to BESS participation. It is appropriate to prioritise implementation and bedding-in of those reforms before considering more fundamental changes to compensation

	arrangements. Any future review should be evidence-based and triggered by demonstrated inefficiencies.
<i>BESS owners' existing obligations</i>	
Q26. Do you consider our proposed Code amendment accurately captures BESS owners' obligations in Parts 13, 14, and 15 of the Code?	In general, yes. We consider the proposed amendment appears to appropriately capture existing BESS owners' obligations in Parts 13, 14, and 15 of the Code. We encourage the Authority to continue assessing the drafting against real operating scenarios to ensure obligations are clear, practical, and consistent across different BESS configurations, including future hybrid arrangements.
<i>Regulatory Statement for the proposed Code amendment</i>	
Q27. Do you agree with the objectives of the proposed amendment? If not, why not?	Yes. We agree with the objectives of the proposed amendment. The package supports the Authority's objective of ensuring wholesale market arrangements remain fit for purpose as BESS becomes a more key component of New Zealand's electricity system. The reforms should improve dispatch efficiency, enhance participation, and better align market arrangements with battery operating characteristics.
Q28. Do you agree the benefits of the proposed amendment outweigh its costs?	Yes. On balance, we agree the benefits of the proposed amendment are likely to outweigh its costs. However, implementation requirements should continue to be monitored to ensure systems changes, compliance obligations, and operational requirements remain proportionate to the benefits delivered, particularly while BESS participation remains relatively limited.
Q29. Can you provide any evidence or further information about potential benefits or costs?	Potential benefits include improved dispatch efficiency, better system operator visibility, more accurate reflection of BESS physical capability, improved reserve market participation, and reduced administrative friction from more coherent bidding arrangements. Potential costs include participant system changes, market system updates, implementation complexity, and ongoing compliance costs. The Authority should continue to assess whether those costs remain proportionate as deployment scales.
Q30. Do you agree the proposed amendment is preferable to the other options? If you disagree, please explain	Yes. We consider the proposed amendment is preferable to the other options identified by the Authority. It provides a pragmatic and

your preferred option in terms consistent with the Authority's statutory objective in section 15 of the Act.	proportionate response that better aligns market arrangements with the characteristics of BESS while avoiding unnecessary complexity or premature reform. In our view, this best supports the Authority's statutory objective by promoting efficient market participation and supporting reliable, resilient system outcomes over time.
Q31. Do you agree the Authority's proposed amendment complies with section 32(1) of the Act?	Yes. Based on the information provided, we agree the proposed amendment appears to comply with section 32(1) of the Act. The proposal is broadly consistent with the Authority's statutory objective, is supported by a rationale for why the amendments are needed and reflects a proportionate approach to identified issues.
<i>Code drafting</i>	
Q32. Do you have any comments on the drafting of the proposed amendment?	Overall, we support the drafting direction. Across the amendment package, we encourage the Authority to keep drafting as technology-neutral as practicable; ensure obligations remain workable for real-time battery operation; avoid creating unnecessary compliance rigidity; and maintain consistency with related work on 5-minute settlement and BESS-hybrid arrangements. This will help reduce the risk of duplicated compliance requirements or future redesign as market arrangements evolve.