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To: The Electricity Authority
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Genesis Energy submission on Wholesale Market Arrangements for Battery Energy Storage Systems

Genesis Energy Limited **(Genesis)** welcomes the opportunity to comment on the Electricity Authority's **(the Authority)** *BESS Wholesale market arrangements for battery energy storage systems Code amendment consultation paper*. We agree that unlocking the value of BESSs will be important to optimising a highly renewable system and that fit for purpose regulations are key to enabling this. Under our Gen35 Strategy, Genesis aims to achieve around 1,370 MW in flexible capacity at Huntly Power Station, including through BESS. Our first 100 MW / 200 MWh BESS is under construction with commercial operations on target for Q4 FY26. The second 100 MW reached FID in April and is expected to be operational in FY28.

We welcome the Authority's prioritisation of this work to ensure the Code is fit for purpose for enabling BESS. We also strongly support the Authority's plan to investigate shorter gate closure times as we think this could better unlock the potential system benefits of BESS. We welcome the Authority's decision to retain constrained off payments for BESS while charging. We have included below detailed responses to the Authority's questions, including areas where we think further work is needed.

Gate closure and the Authority's proposal for State of Charge constraints are the most material issues. State of Charge constraints, which are impacted by contractual warranty conditions, materially impact a BESS's deliverable energy within a given trading period. For example, warranties may impose average throughput constraints across a defined period of time (for example, a maximum MW average across a defined time period in hours) which could mean deliverable energy is less than that reflected in SOC at a given point in time. BESS owners may not be able to exceed these limits without breaching contractual or warranty conditions or accelerating BESS degradation. We therefore believe "usable" State of Charge is more important than headline SOC, and that reporting to the System Operator should accordingly focus on usable energy. See our detailed comments in the table below for more detail.

Another general comment we make is that the Code should achieve a level playing field for BESS across different configurations. BESS assets configured differently with

other plant should be subject to consistent requirements where they provide the same service. Requirements should not unintentionally advantage or disadvantage one configuration over another. Similarly, dispatch tolerance for BESS should align with other generation.

Yours sincerely,

Mitchell Trezona-Lecomte

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

Questions	Comments
Issue 1:Dispatch requirements for BESS when charging	
Q1. Do you agree with our proposal to require BESSs to be dispatchable while consuming?	Yes, consistent with the treatment of other controllable assets.
Q2. Do you have any comments on our proposed Code drafting for issue 1?	No comment.
Issue 2: bids and offer forms for BESS	
Q3. Do you agree with our proposal to have separate offers and dispatch for interruptible load and generation reserve?	Yes. We support the proposal for a single bi-directional offer form and retention of separate interruptible load and generation components within a single reserve offer form. We agree with a solution to recognise that bids and offers for a BESS are from the same entity and to avoid physically impossible dispatch. Treatment of net free reserves requires greater clarity. There is concern about how NFR is taken by the system and how this applies to BESS. The interaction between BESS operations, reserves, and other system requirements should be clearly defined.
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?	In our view, a requirement for 10 price bands is likely to be excessive and unnecessarily complex. We would suggest the Authority test the operational value of that level of granularity against the cost and complexity of implementation before the Authority progresses this.
Q5. Do you agree with our proposal that BESS owners not be required to submit maximum up and down ramp rates?	Yes, we agree.
Q6. Do you agree with our proposal to address issue 2?	Yes, we agree.
Q7. Do you have any comments on our proposed Code drafting for issue 2?	We ask that the forms and dispatch interfaces be co-designed with BESS owners, the System Operator and the WITS manager to minimise integration cost and rework.
Issue 3: gate closure arrangements for BESS	
Q8. Should BESS owners be able to withhold energy if requested to do so in a grid emergency?	Yes. The ability to maintain SOC should be a priority as how SOC defined is a critical issue with BESS systems. Warranty limitations may not be visible in SoC telemetry indications.

	Note SOC during outages, switching events or abnormal system conditions may differ from planned or forecast SOC. Requirements should accordingly account for the practical difference between planned availability and real-time capability. Grid emergency expectations need to be defined. Expectations for BESS during grid emergencies should be clearly stated. This includes what the BESS is expected to do, how long it must respond, and how SOC or warranty constraints are treated in emergency conditions.
Q9. Should BESS bid and offer arrangements be aligned?	Yes.
Q10. Do you think greater clarity is needed around the circumstances which allow trade revisions after gate closure?	Yes. Specifically, around ability to maintain warranty conditions for throughput and SOC limitations, when additional requirements while on idle impact.
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?	Yes. We support aligning the dispatch-schedule SoC constraint with the forecast-schedule formulation on a half-hour basis, which improves forecast accuracy and the System Operator's ability to assess risk. We think availability over a 5-minute period would be optimal for maximising the value of BESS. The Authority may wish to monitor trading and then revisit the issue once it has new data to support a solution.
Q12. Should state of charge constraints account for round trip losses? If not, why not?	There are multiple variables that may impact round-trip losses. These can be site-specific and offered and bid volumes should take this into account. We note this impacts the Authority's proposal in its companion paper regarding usable State of Charge across trading periods. All considerations impacting SOC and round-trip efficiency should be at the GIP / GXP. We agree round-trip efficiency is important, but operational treatment should focus more directly on consumption from and injection into the grid i.e. the key system impact is how much the BESS imports and exports at the grid connection point.
Q13. Do you agree that the WITS manager and clearing manager require SoC	Our view is that the information is required after the fact for WITS and clearing manager however utilisation of constraints on SoC

constrained bid and offer information to perform their functions?	could have unintended consequences when the limitations of Soc are not fully understood.
Issue 3: final proposal	
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 agree that gate closure arrangements for BESS should be the same between grid-connected and embedded BESSs and between different operational states. As noted in the Paper, having different gate closure rules for embedded and grid-connected BESS would create inefficient incentives and unnecessary complexity. Note that, consistent with our submission on the Authority's Issues and Options paper from 2025, Genesis supports the Authority's plan to investigate the system risks, costs and benefits of reducing gate closure, including the potential trialling of shorter gate closure periods. While we acknowledge the valid security considerations raised by the System Operator, these appear to be mostly functions of its current tools and systems, rather than a permanent feature of the market, and should therefore be addressable.
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?	We do not believe this is necessary. While we think the impact is likely limited, our preference is for a level playing field. BESS assets configured differently with other plant should be subject to consistent requirements where they provide the same service. Requirements should not unintentionally advantage or disadvantage one configuration over another.
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?	An important limitation and complicating factor will be warranty conditions, which can impose operational constraints. Without an understanding of these, round-trip energy and State of Charge constraints may be inaccurate or less useful. We also note round-trip losses should already be reflected in bids / offers; the more important factor would seem to be "usable SOC", however this is specific to each plant and factors such as warranty conditions.
Q17. Are there any other factors that need to be taken into account in adjusted capacities and limits?	Idle state requirements exceed expectations on all other plant types
Q18. Are there are any other reasons why a BESS owner should be able to, or need to, revise their trades after gate closure? If so, what?	A number of hard and soft warranty constraint limits and throughput limits impacting on Battery health and life expectancy.

Q19. Do you agree with our proposal to address issue 3?	Subject to our comments in this section, particularly regarding warranty and contractual conditions that may result in deliverable energy differing from point-in-time SOC. As we noted, State of Charge limitations are a hard constraint. SOC limits, MWh capacity, throughput limits, and warranty conditions materially affect what a BESS can provide. For example, throughput limits over a defined time period may constrain operation. Note these figures are examples only and actual figures would be commercially sensitive. Exceeding these limits could accelerate degradation or breach warranty conditions. Usable State of Charge is more important than headline SOC. Reporting should focus on the usable energy available to support the grid. Headline SOC may not accurately represent real operational capability, especially once reserve margins, warranty limits, and operating constraints are considered. An additional point we would make is that integrated BESS configurations need appropriate treatment. SOC reporting for a standalone BESS may not be suitable for an integrated BESS connected with other plant. Requirements should account for BESS that are co-located or integrated with other generation assets. Given the Authority plans to implement an interim option, it may wish to monitor trading during the interim period and refine its final proposal based on this.
Q20. Do you have any comments on our proposed Code drafting to address issue 3?	Telemetered SoC is a small subset of the data required to understand the capability of the BESS plant to deliver / consume energy current information is overly simplistic and will not provide the system operator with the level of detail to make an informed decision.
Issue 3: Interim proposal	
Q21. Are there any other factors that need to be taken into account in adjusted capabilities under our interim proposal??	As noted, another factor to consider will be warranty contractual considerations that will be specific to each BESS.
Q22. Are there any other reasons why a BESS owner should be able to, or need to, revise their trades after gate	See response to question 19. As Genesis moves through the commissioning phase, additional information will become available with more practical market experience.

closure under our interim proposal? If so, what are these reasons?	
Q23. Do you agree with our interim proposal to address issue 3?	Yes, but we note the potential rework that may be required from existing sites to achieve compliance.
Q24. Do you have any comments on our proposed Code drafting for our interim proposal to address issue 3?	No comment.
Issue 4: constrained off payments	
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?	Yes, as noted in our submission on the Authority's paper last year. We support the Authority's proposal on this point.
BESS owners' existing obligations	
Q26. Do you consider our proposed Code amendment accurately captures BESS owners' obligations in Parts 13, 14, and 15 of the Code?	We agree with BESS no longer being a dispatch-capable load station, dispatchable purchaser or dispatch notification purchaser. It will be important for Code drafting to enable compliance certainty for BESS owners, to give firms certainty when investing in / commissioning BESS design.
Regulatory Statement for the proposed Code amendment	
Q27. Do you agree with the objectives of the proposed amendment? If not, why not?	Yes.
Q28. Do you agree the benefits of the proposed amendment outweigh its costs?	We agree the benefits are likely to outweigh the costs. However, we note the System Operator's $1.9m figure is a rough estimate with reserve-offer changes not yet costed.
Q29. Can you provide any evidence or further information about potential benefits or costs?	We are unable to at this stage, but if the Authority has specific questions. we are open to further discussion.
Q30. Do you agree the proposed amendment is preferable to the other options? If you disagree, please explain your preferred option in terms consistent with the Authority's statutory objective in section 15 of the Act.	Yes.
Q31. Do you agree the Authority's proposed amendment complies with section 32(1) of the Act?	Yes.
Code drafting	
Q32. Do you have any comments on the drafting of the proposed amendment?	