



Generator registrations and connections – consultation paper: stakeholder feedback template

The template below has been developed to assist stakeholders in providing their feedback on the questions posed in this paper and any other issues that they would like to provide feedback on. The AEMC encourages stakeholders to use this template to assist it to consider the views expressed by stakeholders on each issue. Stakeholders should not feel obliged to answer each question, but rather address those issues of particular interest or concern. Further context for the questions can be found in the consultation paper.

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Questions		Feedback
Chapter 1 – Introduction		
Question 1: Proposed assessment framework (p. 5)		
1	Do you agree with the proposed assessment framework or are there any additional assessment criteria the Commission should use when assessing identified issues and possible solutions?	Regarding the third criterium: <i>promote efficient investment</i> . This should assess not only whether the proposed rules will increase efficient investment in new generation assets, but whether they will encourage the utilisation of <i>existing</i> generation assets. Rules that establish too many barriers to bringing existing generation, particularly behind-the-meter generation, into the wholesale market will disincentivise market participation and compromise the delivery of a truly two-sided market.
Chapter 2 – Participation of smaller-scale generation in central dispatch		
Question 2: Issue identified by AEC – increase in non-scheduled generation in the NEM (p. 15)		
1	Do you agree with the AEC that transition in the NEM's generation mix is trending towards having a greater proportion of non-scheduled generation?	This will almost entirely depend on the ability for generation proponents to participate in the NEM as non-scheduled generation. For many small generators, the costs and complexity of being scheduled outweigh the potential benefits. This is particularly the case for generators that were not built with the sole purpose of participating in the NEM, for example those co-located

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2	Do you expect the capacity of non-scheduled generation as a proportion of total generation capacity to maintain the same growth trend into the future? If not, how do you expect this trend to change over time?	with load. Smaller generators will therefore seek to be either be exempt from registration or classified as non-scheduled.
Question 3: Issue identified by AEC – the forecasting and dispatch process (p. 16)		
1	Do you consider that the current penetration of non-scheduled generation in the NEM is causing difficulties or inefficiencies in the forecasting and market scheduling process?	This issue would benefit from further examination and input from AEMO, using the analysis from the 2017 rule change as a starting point.
Question 4: Assessment of the proposed solution (p. 18)		
1	Do you consider that lowering the threshold for classifying new generators as non-scheduled would help to address the issues the AEC has identified for the efficient management of the power system? Why or why not?	<p>The AEC’s rule change request does not clearly state the problem that it seeks to address. Instead, it refers to an AEMO decision in 2018 to re-classify “two generating systems with a combined nameplate capacity of 277MW and the technical capacity to follow dispatch processes” from scheduled to non-scheduled. The AEC “suspects that this reclassification was not justified and may have consequential market impacts” and thus proposes to limit AEMO’s discretion with respect to decisions about generator classification.</p> <p>It is a big jump from the AEC’s suspicions about the impact of an AEMO reclassification decision to lowering the automatic scheduling threshold to 5MW and effectively closing out the non-scheduled classification to new participants and reducing competition in the NEM. In Enel X’s view, a rule should not be made on this matter without first properly defining the problem, seeking input from AEMO, and identifying the range of potential solutions. For example, if forecast accuracy is the problem, AEMO and the AEMC should determine scale of the problem and explore all potential options to address it, if it is found to be material.</p> <p>Lowering the scheduling threshold is unlikely to have the effect the AEC foresees. Rather, Enel X expects that the rule will result in an increased administrative burden on AEMO as it processes more applications for exemption from registration or exemption from the scheduling</p>

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	<p>classifications. If such applications are rejected, many small generator proponents will choose not to offer their capacity to the market, which would result in a lack of competition in the NEM and higher prices for consumers. This outcome does not contribute to the achievement of the NEO or the ESB's vision of a two-sided market.</p> <p>In the final determination on the <i>Non-scheduled load and generation in central dispatch</i> rule change requests in 2017, the AEMC concluded that:</p> <ul style="list-style-type: none"> - AEMO's demand forecasts are generally accurate at dispatch, and its price forecasts provide signals to the market to enable participants to plan and adjust their generation or consumption. - The actions of non-scheduled generators and large price responsive loads were clearly not the only or necessarily the primary cause of forecast error and not all non-scheduled generators or load contribute to forecast inaccuracy, in particular price error. - AEMO has a range of powers to address forecasting issues and maintain system security, including security issues arising from market participation. - Requiring non-scheduled generators to be scheduled would impose costs, change investment incentives, and change business models for these participants, but it would not necessarily improve demand and price forecasts materially. - Given most of the non-scheduled generation is either intermittent or the by-product of an industrial process, the benefits that may accrue from scheduling these participants would also be limited. - Changes in generation and consumption technologies may result in new system security challenges, but a broad mechanism in respect of all generating units of a particular size may not be the appropriate answer in the absence of knowing what the specific system security issues are. - AEMO has existing powers to deal with system security issues, including the ability to impose terms and conditions on non-scheduled participants, or to require participation in central dispatch. <p>Enel X agrees with these conclusions and believes that they still stand. To make a rule, the AEMC would need to demonstrate that the above conclusions have changed.</p>

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2	How much of an improvement to the accuracy of AEMO's forecasts would scheduling new generators above 5 MW nameplate capacity have, compared with requiring this of all new and existing generators above this size?	<p>This is an important question and one that the AEMC and AEMO should seek to answer quantitatively before making a draft determination.</p> <p>Table 2.3 of the consultation paper shows that the proportion of non-scheduled generation to total generation has increased by 1.1 per cent between 2010 and 2020, and only 0.1 per cent since 2017 when the AEMC decided to not make a rule. It's therefore unlikely that the proposed rule would materially improve forecast accuracy or AEMO's ability to deliver system security, whether it applied retrospectively or not.</p>
3	Do you think the costs associated with the AEC's proposal to reduce the thresholds have been adequately captured? How would these costs vary depending on whether the generator was scheduled or semi-scheduled?	<p>The AEC only recognises the hardware costs of being scheduled. Not accounted for are the organisational costs of:</p> <ul style="list-style-type: none"> - participating in the central dispatch process, which can be significant for proponents of smaller generating facilities - ensuring compliance with dispatch instructions, which may not be appropriate for units that do not have the technical capability to participate in the central dispatch process - ensuring compliance with the other rules that apply to scheduled generators, for example mandatory primary frequency control, which again may not be appropriate for units that don't have the capability to provide this service. <p>These costs are likely to be significant for many small generators. This is particularly the case for those that don't seek to participate in the NEM very often, e.g. those that are co-located with commercial or industrial load and normally serve another purpose.</p> <p>We also expect that AEMO's workload would increase, as generator proponents who would otherwise be classified as non-scheduled seek to be exempt from the scheduling requirement or exempt from registration altogether. The existing generator exemption process is complex and time consuming, particularly for proponents with multiple generators at the one site or unique business models. The overall impact of the proposed rule might therefore be that small generators are deterred from participating in the NEM at all if they cannot see a clear path to exemption from registration or exemption from scheduling. This outcome does not contribute to the achievement of the NEO or the ESB's vision of a two-sided market.</p>

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4	Do you agree with the AEC that the costs of participating in central dispatch have fallen to the extent where the market benefits of increasing the proportion of scheduled generation outweighs the costs to participants? Why or why not?	<p>As above, the AEC only refers to the cost of installing generation control systems. There are a range of other costs that need to be considered in assessing this rule change request.</p> <p>The AEMC concluded in 2017 that “the costs and requirements of scheduling would represent a significant impost” for small generators. Enel X agrees with this conclusion and believes that it still stands. To make a rule, the AEMC would need to demonstrate that this conclusion has changed, along with those set out in response to question 4.1.</p>
5	Do you agree with the AEC that its proposed scheduling threshold does not need to be made consistent with the thresholds that apply to system security management and technical connection requirements? Why or why not?	No comment.
6	If made, should the AEC's rule change only apply to new generating units at the time of their registration and AEMO's existing practise of grandfathering the changes apply to existing generators registered inconsistently with the new provision?	No comment.
Question 5: Timing of the proposed solution (p. 19)		
1	Do you consider that the penetration of unscheduled generation has reached a level where a decision needs to be taken to lower the thresholds to require this generation to participate in central dispatch? Why or why not?	<p>We do not agree that scheduling obligations should be linked to the level of penetration of unscheduled generation. Further, we do not agree that lowering the scheduling threshold is the only option to address the AEC’s concerns about power system security and forecast accuracy. If these matters are a problem, it would be sensible to explore the full range of options available to address them.</p>
2	If not, what level of penetration would need to be reached before it is warranted to place	

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	more scheduling obligations on this category of generator?	
Question 6: Is the proposed threshold of 5 MW nameplate capacity appropriate? (p. 21)		
1	Do you believe AEMO's 5 MW generator registration exemption threshold would serve as a reasonable threshold for participation in central dispatch? If not, what do you think this threshold should be?	<p>The AEC chose the 5MW threshold based on AEMO's current practice of granting registration exemptions for generators <5MW. The consultation paper notes that there is no technical or economic basis behind this number. We agree that the threshold for inclusion in central dispatch is not associated with the registration exemption criteria and should be separately determined. We support the AEMC conducting further analysis, in consultation with AEMO and other stakeholders, to determine what the threshold should be if 30MW is no longer appropriate.</p> <p>Regarding Table 2.4: If the rule change request is seeking to address matters of system security and forecast accuracy, surely it is the capacity of those generators as a proportion of total capacity, not the number, that is relevant. While it might be true that half of all registered non-scheduled generators in the NEM are 5-30MW in terms of number, that represents only 25 per cent in terms of capacity. Most of the non-scheduled capacity (72 per cent) comes from generators >30MW. Thus the benefits of the AEC's proposal are unclear given the rule is to apply to new generators, and would probably not capture the majority of the unscheduled generation capacity anyway if AEMO continues to have the ability to grant exemptions for practical or technical reasons.</p>
2	Do you think that factors other than the size of a generator should factor into whether a generator is required to participate in central dispatch? If so, what should these other factors be?	<p>Yes. Other important factors include:</p> <ul style="list-style-type: none"> - The primary purpose of the generator. Was the generator built to participate in the NEM, or does it primarily serve another business purpose, e.g. backup supply to a commercial or industrial facility? - How often the generator is expected to participate in the NEM. This is linked to the above consideration. If the generator has another primary purpose, it is likely to be participating in the NEM infrequently, e.g. to capture high spot prices or to provide wholesale demand

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		<p>response. The costs of scheduling would outweigh the benefits of this level of participation.</p> <ul style="list-style-type: none"> - Whether the generator, and its owner/operator/controller, has the technical capability to participate in the central dispatch process and comply with the various obligations on scheduled generators, including mandatory primary frequency response. - The costs and benefits to both the customer and to AEMO of the generator being scheduled. <p>The AEMC and AEMO should explore what it is about non-scheduled generation that is of concern, and present options to address those concerns. For example, if the concern relates to a lack of predictability about when non-scheduled generation will run, there are options to consider that involve non-scheduled generators providing more transparency about that. Scheduling is an unrealistic expectation for many small generators, both technically and commercially, and should not be the default requirement.</p> <p>It's also important to note that DRSPs will be scheduled participants, and that wholesale demand response can be provided by way of net export from a site where generation is co-located with load. It would not make sense to require generators >5MW that are co-located with load to be scheduled where there is already a DRSP registered, scheduled and participating in the market in relation to that site.</p>
Question 7: Alternative solutions (p. 23)		
1	Do you have any suggestions for information which would satisfy these criteria to make the existing scheduling framework more accessible for small generators?	<p>We support the first principles the AEMC has proposed on p22. The information provided should reflect the need.</p> <p>We note that the NER already require registered participants, including non-scheduled Generators, to provide demand side participation information to AEMO.¹ This includes contracted demand side participation and the curtailment of non-scheduled load or the provision of unscheduled generation in respect of the demand for, or price of, electricity. The NER also</p>

¹ See rule 3.7D of the NER.

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		<p>require AEMO to take into account the information received under this obligation when developing load forecasts, and to publish details at least annually about how it has done so.</p> <p>It would make sense to review whether there are any gaps in the information provided under the above obligation before considering whether to impose any additional information sharing requirements on non-scheduled generation.</p>
2	Would AEMO's forecasting and market scheduling process benefit from partial visibility of non-scheduled generators?	This question would benefit from further analysis, and input from AEMO.
3	Can you suggest ways that participants could provide this information without becoming bound to the obligations of the existing dispatch process? Would the New Zealand approach, or the approach taken in relation to wholesale demand response in the NEM, be appropriate?	<p>The NZ dispatchable demand framework has not seen a meaningful level of participation. Since implementation in 2014, only one business is registered as a dispatch-capable load station.² In a post-implementation review conducted in 2018, the NZ Electricity Authority concluded that “the scheme so far is unlikely to have accrued benefits over and above its implementation costs” and that “one reason for this is low participation”.³</p> <p>And, while the wholesale demand response mechanism has changed some of the scheduling obligations that will apply to DRSPs, in large part DRSPs will be treated like scheduled generation. As a result, and due to other design decisions, the WDR mechanism will not be suitable for many loads.</p> <p>We therefore support further consideration of whether the scheduling obligations could be relaxed to provide AEMO and the market the transparency they need in a way that is technically and commercially viable for small generators. Such an approach is more likely to be consistent with the objectives of a two-sided market. Subjecting DER proponents to the existing scheduling obligations is unlikely to result in any meaningful level of participation by the demand side.</p>
4	Do you consider the benefits of implementing these alternative arrangements would outweigh the prospective additional system	Without further detail on the alternative arrangements, it's difficult to say. But we agree that the approach should not be burdensome for AEMO to implement. If the rule is to only apply to new generators, the scale of generation captured is unlikely to be large.

² See: <https://www.ea.govt.nz/assets/dms-assets/18/18690DCLS-Approved-applications-05.11.2014.pdf>

³ See: <https://www.ea.govt.nz/assets/dms-assets/23/23705DD-post-implementation-review.pdf>

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	costs they might impose on the market by increasing the complexity of AEMO's operations?	
Chapter 3 – Exemptions in the registration process		
Question 8: Exemption issues – AEC (p. 31)		
1	Do you share the AEC's concern about the impacts of generator exemptions and non-scheduled classifications on the number of generators (and proportion of total generation) subject to scheduling obligations? Why or why not?	No comment.
2	Do you agree there is an issue with AEMO classifying generators as non-scheduled where it is satisfied that: <ul style="list-style-type: none"> a) the primary purpose of the generator is local use and it would rarely, if ever, send out generation above 30 MW? b) the individual generating units do not have the physical attributes to participate in central dispatch (regardless of whether they are part of a bigger system)? 	No comment.
3	Do you share the AEC's concern about a lack of transparency surrounding AEMO's decisions to provide generators with registration exemptions or classify their	No comment.

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	generating units as non-scheduled? Why or why not?	
Question 9: Exemptions issues – Mr Vermeer (p. 31)		
1	What are your views on Mr Vermeer's concerns with the connection process for embedded generation owned, operated or controlled by entities that intend to be exempt from the requirement to register as a generator?	<p>We agree that the requirements for generators in the 5-30MW range seeking AEMO exemption are unclear, particularly where there are multiple generators co-located with load whose individual nameplate capacities are <5MW but collectively is >5MW. In these circumstances, it is not clear what rules the proponent should be assessed under and therefore what information is to be provided to support that assessment. In Enel X's experience, AEMO's assessment of these sorts of generators can be excessive given the size of the generator or the way in which it is intended to operate.</p> <p>We also agree with Mr Vermeer that there is considerable uncertainty surrounding AEMO's exemption decisions and that this presents a significant commercial risk for generation proponents.</p> <p>We strongly support a closer examination of the registration exemption framework to make sure it is transparent, reasonable and fit for purpose for the business models that are emerging in this space.</p>
Question 10: Exemption solutions – AEC (p. 32)		
1	What are your views about the relative costs and benefits of the AEC's proposal to narrow the circumstances set out in the NER for exempting generators from the requirement to register or classifying generating units as non-scheduled?	No comment.
2	Besides the nameplate capacity, what would you consider to be appropriate reasons to provide an exemption or classify a generating	See response to question 6.2.

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	unit as non-scheduled, such that they are not required to participate in central dispatch?	
3	Are you in favour of the NER requiring AEMO to publish its reasons for making these exemption and classification decisions? Why or why not?	The AEMO registration and exemptions list already sets out the generators that have been granted an exemption from registration and from central dispatch, and a brief explanation of AEMO's reasoning for those decisions. Transparency of AEMO decision making is valuable, so we are not opposed to further information being published. However, it's not clear what the benefit of this is, and whether confidential information would be protected.
Question 11: Exemption solutions – Mr Vermeer (p. 33)		
1	Do you consider that Mr Vermeer's proposed solution appropriately addresses the connection issues for embedded generators between 5 and 30 MW? Why or why not?	No comment.
2	Do you agree that there are potential inconsistencies with the solutions proposed by the AEC and Mr Vermeer? If so, do you have any recommendations for how they could both be accommodated?	No comment.
3	Do you consider that the issue would be more appropriately addressed outside of the NER through changes to AEMO's procedures and processes?	No comment.