



## 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
<b>Chapter 1 – Introduction</b>		
<b>Question 1: Proposed assessment framework (p. 5)</b>		
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?	SMC supports the AEMC’s proposed assessment criteria and believes the issues embodied in the criteria will enable an assessment of the proposed rule change that materially aligns with the intent of the NEO. It is important that the criteria – particularly the “promote efficient investment” - are not interpreted narrowly. SMC suggests that the “promote efficient investment” criteria needs to accommodate the “behind the meter” integration of generation and demand – particularly when it is a single entity at the connection point. Therefore AEMC should consider to what extent will the proposed rule changes impact value-adding activity where electricity generation is integrated into an industrial process and the likely regional economic and employment implications. It is important that AEMC, in its recommendations, accounts for the value adding regional economic activity and the supports the reduction in market power and greater generation / supply side diversity.
<b>Chapter 2 – Participation of smaller-scale generation in central dispatch</b>		
<b>Question 2: Issue identified by AEC – increase in non-scheduled generation in the NEM (p. 15)</b>		
1	Do you agree with the AEC that transition in the NEM's generation mix is trending towards	From the AEMO information provided, the growth in non-scheduled generation by small non-scheduled generators has not materially changed from 2010-2020 (5.4% - 6.5%). In SMC’s opinion the relative level of

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	having a greater proportion of non-scheduled generation?	<p>generation of any particular classification is a secondary issue compared to the operation of the power system in the interests of consumers and in accordance with the NEO.</p> <p>In assessing the volume of generation that is connected, it is important to differentiate between generation whose purpose is to supply the NEM and generation that is integrated into other industrial processes. For the purposes of this Rules change the level of export into the NEM is important, not the size of the generator. If a generator does not export or exports very little energy into the NEM and its output is captured by the load it supplies behind the NEM connection point then it should be non-scheduled because its impact on the NEM does not warrant the additional capital and operating impacts of being scheduled.</p>
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?	<p>From the AEMO information provided, the growth in non-scheduled generation by small non-scheduled generators has not materially changed from 2010-2020 (5.4% - 6.5%). In SMC's opinion the relative level of generation of any particular classification is a secondary issue compared to the operation of the power system in the interests of consumers and in accordance with the NEO.</p> <p>In assessing the volume of generation that is connected, it is important to differentiate between generation whose purpose is to supply the NEM and generation that is integrated into other industrial processes. For the purposes of this Rules change the level of export into the NEM is important, not the size of the generator. If a generator does not export or exports very little energy into the NEM and its output is captured by the load it supplies behind the NEM connection point then it should be non-scheduled because its impact on the NEM does not warrant the additional capital and operating impacts of being scheduled.</p>
<b>Question 3: Issue identified by AEC – the forecasting and dispatch process (p. 16)</b>		
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?	<p>AEMO has published quite a bit of information recently about growth of renewable generation and AEMO's ability to forecast and dispatch (see <a href="https://aemo.com.au/en/energy-systems/major-publications/renewable-integration-study-ris">https://aemo.com.au/en/energy-systems/major-publications/renewable-integration-study-ris</a>). The bulk of non-scheduled generation currently is roof-top solar, which tends to be the lowest capacity generators. The solar pattern of generation is dominated by the daily irradiance pattern, moderated by weather. As solar non-scheduled generation is geographically spread the weather effects tend to even out, so statistically, the effect is small. Large semi-scheduled and schedule plant can have a much bigger impact on forecasting error than the non-scheduled generation fleet.</p>

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		<p>Even so, this Rule change proposal would not affect the many thousands of megawatts of roof-top solar. If the impact of these plant on forecast error is taken out of consideration, the residual impact of other non-schedule plant in the NEM on AEMO's forecast error is likely to be negligible</p> <p>SMC participates in the energy market at relatively stable and predictable levels of generation from their behind-the-meter solar farm. SMC is not aware of difficulties or inefficiencies in forecasting and market scheduling. The predictability of the SMC operation, in addition to the relatively small volume of sent-out energy due to the net-load position of the refinery and solar farm, means the status of the SMC generator as either semi-scheduled or non-scheduled should not cause difficulties or inefficiencies in the forecasting or the market scheduling process.</p> <p>The measure for being captured by the scheduled / semi-scheduled status should be the exported generation not the size of the generation itself. A generator that does not export at its NEM connection point more than 30MW should not be captured as scheduled or semi-scheduled.</p>
<b>Question 4: Assessment of the proposed solution (p. 18)</b>		
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>Lowering the threshold: SMC does not believe that reducing the threshold for classification of non-scheduled generation will have a material impact on efficient management of the power system as it pertains to the NEO and NERO. Further, the costs of making the changes contemplated in the questions above are likely to be far larger than is quantifiable, as a significant proportion of cost will manifest in disruption to well established operational and business processes, outside of the electricity supply system. Ultimately these costs will result in trade-offs to employment and economic activity. SMC does not believe the AEC has adequately considered these factors in the justification for their rule change.</p> <p>Co-generators and industrial consumers with self-generation are among the parties most heavily impacted by these proposed changes. These parties provide an efficient supply of generation, minimising the losses on the power system by generating and consuming at the one location, and reducing the required capital cost of the transmission system, and because they require less infrastructure to be built, also reduce the cost of operation of maintenance, which is a function of the size of the power system. This Rule change provides a disincentive to the development of co-located generation. Because large industrial plants tend use large amounts of energy they tend to be price sensitive. The outcome of this Rule change as proposed would be to penalise these users by imposing unnecessary costs on their operation and reducing their capacity to offset their energy costs by self-generation.</p>
2	How much of an improvement to the accuracy of AEMO's forecasts would scheduling new	Accuracy of AEMO's forecasts: As noted above, the impact on forecasting from this Rule change is likely to be small. The largest number of non-scheduled plant are likely to be less than 5 MW. A plant that is currently eligible to be considered as non-scheduled will have a nett output of less than 30 MW. The SMC solar

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	generators above 5 MW nameplate capacity have, compared with requiring this of all new and existing generators above this size?	generator output is netted off against the zinc refinery load, and as such is generally not visible and/or significant in the supply side of the market. SMC cannot comment on the impact of accuracy on system forecasts compiled by AEMO.
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?	Costs to reduce the thresholds: SMC believes that the indicative costs described in the paper that are attributed to SA Water and the AEMC 2017 industry workshop may represent those costs attributable to a NEM participant whose main purpose is participation in the NEM. It should be considered by AEMC in approaching any rule change that those participants whose primary purpose is something other than NEM participation carry a much higher burden of plant complexity and investment economics.
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?	Costs for participating in central dispatch: The major, long-term costs of participation in market dispatch include the cost of being constrained, for constraints that are related to line loading, even when the plant is not contributing to line loading. The generation is participating on the left-hand side of the constraint equation and the load on the right. This unreasonably penalises the generator co-located with a load and creates a perverse situation where plant that is not contributing to congestion is affected by it. Therefore SMC does not agree with the assertion by the AEC that the costs of participating in central dispatch are reasonable, and affordable, for small generators and also do not agree that the market benefits have been proven by the arguments put forward by the AEC.
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?	Consistency of scheduling threshold: SMC acknowledges that stability limits and system strength impacts are affected by the online generation rather than the nett generation sent out at a connection point. Stability limits and system strength limits tend to be more affected by larger plants than smaller ones, although the location of the plant in the power system can also be an influence. Small generating systems in a strong network are unlikely to impact either system strength or stability. Perhaps it would be reasonable to have different arrangements for larger non-scheduled plant compared with small non-scheduled plant for any system strength conditions. A larger non-scheduled plant could be subject to a runback scheme for any outage conditions that lead to a potential impact on security. These should be quite rare in future, provided the current problems with the system strength framework are addressed in the Rule change process currently underway. A runback scheme would be less costly than participation in dispatch. This is also consistent with the separation of the technical requirements of the system from dispatch / market requirements. This will help address the perverse outcomes of reducing generation that is not flowing into the NEM, because it is being used by directly connected load, to control flow on remote parts of the network.

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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?	Grandfathering of changes: Due to the significant cost implications of changing fundamental operational processes which were established based on long standing regulatory arrangements, SMC generally supports grandfathering provisions for existing participants. The benefit of this proposed change is low, and it is not urgent. There is no argument for it to be implemented without grandfathering provisions.
<b>Question 5: Timing of the proposed solution (p. 19)</b>		
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?	SMC does not believe the current rule change proposal provides sufficient evidence that action is required to lower the thresholds
2	If not, what level of penetration would need to be reached before it is warranted to place more scheduling obligations on this category of generator?	SMC believes that it is important to not pre-empt the current strategic review of the market which is likely to provide for a significant change to the market arrangements including potentially a 2 sided market arrangement. This will cause significant change to both the supply and demand side and hence the AEMC should be cautious of pre-empting any changes that will add additional costs to participants
<b>Question 6: Is the proposed threshold of 5 MW nameplate capacity appropriate? (p. 21)</b>		
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?	A generic 5 MW threshold may be reasonable for some new installations but does not seem justifiable as an immediate change. The existing AEMO threshold for participation in central dispatch should remain until there is clarity on the nature of market development from the current strategic review. It is critical that the threshold – whatever it is – relates to capacity that is exported into the NEM and does not inadvertently capture generation that is integrated into industrial processes behind a single meter / connection point.
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	Yes. A principal consideration should be the level of export of generation into the market. The physical size of the generator should not be considered for dispatch purposes even though it is required to be considered for some aspects of the technical and connection assessment. For dispatch purposes the critical factor is the export level into the NEM not the size of the generator.

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	dispatch? If so, what should these other factors be?	
<b>Question 7: Alternative solutions (p. 23)</b>		
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>SMC is not convinced that the AEC's rule change is necessary or appropriate in the current market review process. SMC does not have a position on alternatives other than to reiterate that any rule changes need to ensure that both electricity system costs and costs to other operational elements, as well as broad economic and employment implications, need to be considered in relation to rule changes that disproportionately impact energy intensive value adding businesses.</p> <p>AEMO already has the power to require new generation to provide SCADA values regardless of whether they are scheduled or non-scheduled.</p> <p>SMC is conscious of the increasing complexity of the electricity supply system and the importance of AEMO in managing that complexity. The complexity is principally a technical and security issue which all market participants are conscious of. SMC recognises the importance of providing information to AEMO for efficient operation of the wider system. However the simplification of the process by bringing more and more generation into the scheduled status as suggested by AEC is contrary to the growing recognition of different supply models that are appropriate across the NEM and the wider economic implications of a "one-size-fits-all" model as proposed by AEC.</p>
2	Would AEMO's forecasting and market scheduling process benefit from partial visibility of non-scheduled generators?	<p>SMC is not convinced that the AEC's rule change is necessary or appropriate in the current market review process. SMC does not have a position on alternatives other than to reiterate that any rule changes need to ensure that both electricity system costs and costs to other operational elements, as well as broad economic and employment implications, need to be considered in relation to rule changes that disproportionately impact energy intensive value adding businesses.</p> <p>AEMO already has the power to require new generation to provide SCADA values regardless of whether they are scheduled or non-scheduled.</p> <p>SMC is conscious of the increasing complexity of the electricity supply system and the importance of AEMO in managing that complexity. The complexity is principally a technical and security issue which all market participants are conscious of. SMC recognises the importance of providing information to AEMO for efficient operation of the wider system. However the simplification of the process by bringing more and more generation into the scheduled status as suggested by AEC is contrary to the growing recognition of</p>

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		different supply models that are appropriate across the NEM and the wider economic implications of a “one-size-fits-all” model as proposed by AEC.
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>SMC is not convinced that the AEC’s rule change is necessary or appropriate in the current market review process. SMC does not have a position on alternatives other than to reiterate that any rule changes need to ensure that both electricity system costs and costs to other operational elements, as well as broad economic and employment implications, need to be considered in relation to rule changes that disproportionately impact energy intensive value adding businesses.</p> <p>AEMO already has the power to require new generation to provide SCADA values regardless of whether they are scheduled or non-scheduled.</p> <p>SMC is conscious of the increasing complexity of the electricity supply system and the importance of AEMO in managing that complexity. The complexity is principally a technical and security issue which all market participants are conscious of. SMC recognises the importance of providing information to AEMO for efficient operation of the wider system. However the simplification of the process by bringing more and more generation into the scheduled status as suggested by AEC is contrary to the growing recognition of different supply models that are appropriate across the NEM and the wider economic implications of a “one-size-fits-all” model as proposed by AEC.</p>
4	Do you consider the benefits of implementing these alternative arrangements would outweigh the prospective additional system costs they might impose on the market by increasing the complexity of AEMO's operations?	<p>SMC is not convinced that the AEC’s rule change is necessary or appropriate in the current market review process. SMC does not have a position on alternatives other than to reiterate that any rule changes need to ensure that both electricity system costs and costs to other operational elements, as well as broad economic and employment implications, need to be considered in relation to rule changes that disproportionately impact energy intensive value adding businesses.</p> <p>AEMO already has the power to require new generation to provide SCADA values regardless of whether they are scheduled or non-scheduled.</p> <p>SMC is conscious of the increasing complexity of the electricity supply system and the importance of AEMO in managing that complexity. The complexity is principally a technical and security issue which all market participants are conscious of. SMC recognises the importance of providing information to AEMO for efficient operation of the wider system. However the simplification of the process by bringing more and more generation into the scheduled status as suggested by AEC is contrary to the growing recognition of different supply models that are appropriate across the NEM and the wider economic implications of a “one-size-fits-all” model as proposed by AEC.</p>

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<b>Chapter 3 – Exemptions in the registration process</b>		
<b>Question 8: Exemption issues – AEC (p. 31)</b>		
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?	The impacts of generator exemptions: SMC does not share the AEC's concerns in relation to the impact of generator exemptions and non-scheduled classifications as SMC believes the priority objective for any rule change should be the interests of energy consumers as per the NEO and NERO.
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"> <li>a) the primary purpose of the generator is local use and it would rarely, if ever, send out generation above 30 MW?</li> <li>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)?</li> </ul>	Is there an issue with AEMO classifying generators: SMC recognises that the definition of "local use" may be inappropriate in the changing nature of the supply system. The traditional role of distribution as almost exclusively delivering electricity to users has changed with the development of more small local generation. SMC does acknowledge that it may be reasonable to modify the application of "local use" to export into the NEM or local distribution system. This will encourage mini-grid developments. Again it would be prudent to not make changes until the current strategic review is completed. SMC believes that it is the impact at the connection point that is important. In some ways the discretion shown to DSNP connected generation to be treated differently may be similarly inappropriate.
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 generating units as non-scheduled? Why or why not?	Transparency of AEMO's decisions: No. AEMO acts as an independent system operator and should be empowered with sufficient discretion to make judgements about the appropriate classification of generating units on a case by case basis without an added burden to publish unnecessary detail surrounding its decisions. Further, ensuring there is adequate confidentiality provisions in place for generator registration processes will encourage participants to work most openly and effectively with AEMO in their application processes.

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<b>Question 9: Exemptions issues – Mr Vermeer (p. 31)</b>		
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?	No Response
<b>Question 10: Exemption solutions – AEC (p. 32)</b>		
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?	<p>SMC is supportive of the original principles of the NER to be permissive and allow various options for supply and market interaction. The future should encourage that philosophy of different requirements for different circumstances. The Rules should guide AEMO on the overall objectives and should ensure the recognition that the supply industry is there for the wider objectives of society, the economy and the communities involved.</p> <p>As above, SMC considers there to be a high risk of unintended consequences for a narrowing of the circumstances that would facilitate the registration of non-scheduled generation. This is particularly true where generation is incorporated into other value-adding industrial processes for the purpose of making those processes more efficient and sustainable. On principle the narrowing of these circumstances will limit the opportunities for new generation investment to support value-adding processes that ultimately contribute to economic benefit and employment in industries beyond the electricity market. If this outcome was to materialise, it would be a significant cost to the many industries and consumers whose interests are prioritised under the NEO. The focus of the rules in relation to market operation / dispatch should be the export into the NEM at the connection point.</p>
2	Besides the nameplate capacity, what would you consider to be appropriate reasons to provide an exemption or classify a generating unit as non-scheduled, such that they are not required to participate in central dispatch?	In the experience of SMC, the volume and capacity of sent-out generation, as well as the role of generation in other core business processes are of greater relevance than name plate capacity in determining qualification for exemption to central dispatch.
3	Are you in favour of the NER requiring AEMO to publish its reasons for making these	SMC believes there is limited value in publishing the reasons for classification of generation. The guidelines should provide sufficient confidence for participants and there is the potential for considerable administrative burden in dealing with over emphasis on publication. The classification of generation will be published and

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	exemption and classification decisions? Why or why not?	participants can assess those circumstances without requiring AEMO to engage in public discussion that is not likely to add value to the process.
<b>Question 11: Exemption solutions – Mr Vermeer (p. 33)</b>		
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. For the reasons listed above
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 Response
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 Response