CLIMATE CAPITAL
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23 December 2020

Mr Ben Barr
Chief Executive Officer
Australian Energy Market Commission
Level 15, 60 Castlereagh Street
Sydney NSW 2000

Dear Mr Barr

**Generator registration thresholds (ERC 2056)**

I am writing to note Climate Capital's serious concerns with the Generator Registration and Connections rule change process.

The Australian Energy Council has proposed rule changes to:

- reduce the threshold for classifying generators as non-scheduled from 30MW nameplate capacity to 5 MW;
- making the default classifications for generators above 5 MW scheduled or semi-scheduled;
- narrow the grounds upon which generators can be exempt from scheduling obligations; and
- require AEMO to publish its reasons for exempting a person from the requirement to register as a generator, or for classifying a generating unit as non-scheduled.

Climate Capital is a developer and investor focusing on projects in the 2MW to 10MW range across the NEM, and also in Western Australia's SWIS. Our originated projects and investment opportunities are mostly solar farms, although we have opportunities in relatively small wind and hydro projects. Our pipeline includes some projects that are likely to exceed 5MW in nameplate capacity, which could reflect opportunities for embedded generation or multi-stage projects to meet local loads. All of our projects are connected to local distribution networks at varying voltages. At present, we do not envisage developing or investing in projects exceeding 30MW.

We anticipate seeking exemptions from the NER's requirement to be a registered participant.

Clause 2.2.3 of the *National Electricity Rules* requires a generating unit with a nameplate rating of less than 30MW to be classified as a non-scheduled generating unit — so that it does not participate in central dispatch — unless AEMO approves a different classification.

We note that AEMO is required by clause 2.2.3(b) of the NER to approve the classification of a generating unit as a non-scheduled generating unit if AEMO is satisfied that:

- the primary purpose for which the generating unit operates is local use and the aggregate sent out generation at its connection point rarely, if ever, exceeds 30MW; or
- the physical and technical attributes of the generating unit are such that it is not practicable for it to participate in central dispatch.

It is appropriate that AEMO has discretion to apply these conditions in considering an application to be classified as a non-scheduled generator.

AEMO's *Guide to Generator Exemptions and Classification of Generating Units* addresses the local use test, whereby

> "no more than 25% of the annual electricity supplied from the generating unit (gross generation less auxiliary load) can be exported to the network. In addition, for this requirement to be met, the sent out generation must rarely, if ever, exceed 30MW."

This is an issue that we would consider in the detailed design phase and commercial negotiations for our larger projects.

The AEC's proposed rule changes are intended to classify all project above 5MW as scheduled or semi-scheduled generators — requiring them to participate in central dispatch — and limiting AEMO's discretion.

The obligations of a semi-scheduled generator under Chapters 3 and 4 of the NER include:

- submitting plant availability and dispatch offers;
- receiving and acting on dispatch instructions;
- notifying AEMO of protection and control system settings (with the potential liability where these settings are unknowingly incorrect on assets that are managed remotely);
- ensuring that appropriate staff are available at all times; and
- ensuring that all instructions from AEMO can be complied with.

These are onerous, but necessary, obligations for large-scale assets. Smaller scale developers and asset-owners do not have the necessary resources to manage these obligations, and smaller-scale assets — even if they exceed 5MW — are designed for remote operation.

Therefore, these assets are not suitable for participating in central dispatch. As a result, these assets currently meet the second condition for classification as a non-scheduled generator under clause 2.2.3(b) of the NER.

If the default classification is changed to semi-scheduled with less discretion for AEMO, as proposed by the AEC, there is a much greater likelihood that generators exceeding 5MW in nameplate capacity would be subject to the same obligations as much larger generators.

This would result in either development projects being terminating or arbitrary limits on the scale and design of projects, even though these projects are extremely unlikely to impact on AEMO's dispatch process or system management obligations (particularly at an individual asset level).

I would also like to highlight a number of flaws in the AEC's arguments, as outlined in the following table.

| AEC argument | Climate Capital response |
|---|---|
| The rule changes increase the accuracy of the forecasting and market scheduling process by increasing the amount of information available to the relevant forecasting and dispatch systems | Projects closer to 5MW are less likely to have a material impact on the forecasting and scheduling process. In particular, when these projects are developed for embedded applications, the associated loads are variable, meaning that both the asset owner/intermediary and AEMO may have little insight into the energy to be dispatched to the network even if the generator is semi-scheduled.<br>While the AEC's argument may be more relevant for grid-connected projects closer to 30MW, factors such as the cost of capital, economies of scale, distribution network capacity constraints and NSPs' connection requirements might suggest that the trend in project sizes would be towards projects well above 30MW, and thus classification as semi-scheduled generators regardless of the proposed rule change. |

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| The rule changes reduce the scope of network congestion by capturing more generators with known locations in the dispatch process | Assuming that this is a reference to transmission networks, the scope for network congestion arising from relatively small generators (say 5MW to 10MW) is negligible. Further, any impacts on distribution network capacity are already addressed by the relevant DNSPs during the connection application process. |
| Smaller generating units will be required to install generation control systems, the costs of which the AEC suggests are not appreciable due to continuously declining costs of these technologies. | This is incorrect and implies that only hardware costs have been considered. If so, it ignores material costs incurred during the development process and operations that would otherwise not be required. We have been advised that capital costs could increase by 5% for generator performance standards and control systems, as well as the operating costs of external dispatch solutions and permanent staff availability (up to $0.5m per annum).<br>Further, new market exposures need to be considered, including marginal loss factors, curtailment (when clearly a 5MW project connected to a distribution network is not materially impacting on the transmission network conditions that lead to such actions by AEMO) and causer pays ancillary services costs.<br>Also, there may be material costs for AEMO, with new inputs incorporated in the real time dispatch process and non-real time calculations such as marginal loss factors. |

It is also important for the AEMC to consider the impact that the proposed rule changes would have on development of both the wholesale and retail markets. Renewable energy — either embedded or grid-connected — increases the options for large SME and smaller C&I customers to reduce costs and price volatility by contracting for longer-terms with smaller retailers, compared to the inflexible model traditionally offered and still favoured by the incumbent retailers. Reducing the scale of projects or terminating projects sets back this important aspect of market development.

Further, the proposed rule change cannot be considered in isolation. It is likely that, over time, new obligations will be imposed on semi-scheduled generators that would have the effect of adding even higher costs or unnecessarily constraining operations for small projects. For instance, National Electricity Rule Change ERC0313: Semi-scheduled Generator Dispatch Obligations would require all semi-scheduled to meet their dispatch targets or caps, subject to variations in resource availability.

In principle, this would have the same impact on a semi-scheduled 5.1MW solar farm (if the threshold for a semi-scheduled plant was reduced to 5MW) as a 500MW solar farm. The cost per MWh of energy sent to the grid for managing these obligations would be material for the smaller asset, even though its impact on AEMO's dispatch management is immaterial.

Similarly, it is plausible that new markets are established (e.g. ancillary services, fast frequency response, inertia and capacity) that impose new obligations and costs on generators and therefore impact on smaller assets that have less flexibility to adapt.

A broader interpretation of the local use test is also relevant for projects of this scale. All of Climate Capital's projects are focused on delivering the benefits of renewable energy to mid-sized corporate customers and the communities in which they operate. Our projects are delivered, and then managed, by local contractors to the extent possible. Rule changes should not be imposed that prevent regional businesses and communities from accessing the benefits of renewable generation without a high hurdle for justification.

In conclusion, our strong view is that the AEC's proposed rule change would discourage efficient investment and impede market development. Accordingly, the AEC's rule change proposal does not promote — and instead detracts from — the National Electricity Objective.

If the AEMC finds that the NEM and its institutions would benefit from increased transparency on non-scheduled projects above 5MW, it might consider whether this could be achieved by relatively straightforward rule changes. For instance, one option might be mandatory notification to AEMO by DNSPs of project locations, nameplate capacity and high-level design details (e.g. tracking v fixed, bifacial v monofacial) to allow solar and wind forecasting models to capture the aggregate impact of non-scheduled generators.

Climate Capital is yet to commission an asset in the NEM with a nameplate capacity between 5MW and 30MW. Accordingly, we are not in a position to comment on Mr Damien Vermeer's proposed rule changes that focus on the challenges for a generator seeking registration prior to an exemption from AEMO. However, in principle, we would welcome a pathway that provides certainty in the regulatory system as early as possible.

Please contact me at p.bayley@climatecapital.com.au or on 0418 967 377 if you require clarification or additional detail on any issues raised in this submission.

Yours sincerely

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**Climate Capital**