Small Generation Aggregators in the NEM

Fact Sheet

This fact sheet explains the Small Generation Aggregator (SGA) role, which is a registered participant role in the National Electricity Market (NEM), as at March 2023. An SGA supplies electricity from one or more small generating units to the NEM and is financially responsible for the electricity provided.

While the Australian Energy Market Operator (AEMO) has taken all reasonable care in the preparation of this document, the information should not be construed as advice.

While AEMO may have a relationship with the SGA, it is not involved or privy to the SGA's relationship with the owner of a small generating unit.

Frequently asked questions

What can a Small Generation Aggregator aggregate?

An SGA can only aggregate small generating units, which are connected to a distribution or transmission network. A small generating unit is owned, controlled and/or operated by a person who AEMO has exempted from the requirement to register as a Generator. AEMO's exemption policy allows:

- Automatic exemption (no application needed) – for generating systems that have a nameplate rating of less than 5 megawatts (MW) provided certain conditions are met.
- Application for exemption – for generating systems between 5 MW and 30 MW. AEMO considers applications for exemption where:
  - the operation of the generating system does not adversely impact power system security; and
  - the generating system is expected to export less than 20 gigawatt hours (GWh) over 12 months; or
  - extenuating circumstances apply.

When aggregating small generating units, an SGA must comply with all applicable State or Territory requirements.

An SGA must classify its small generating units as market generating units to be settled 'on market' by AEMO.

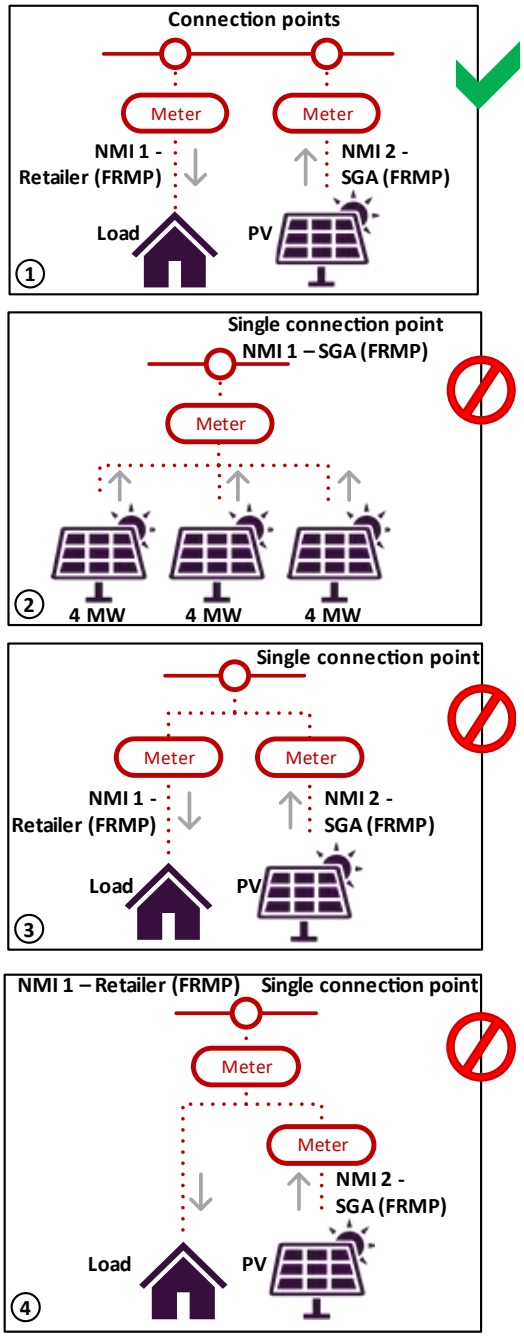
Each small generating unit must have its own connection point[1] and a NEM compliant metering installation, which needs to be a type 1 – 4 metering installation[2]. When an SGA provides electricity to the NEM from a small generating unit, AEMO settles all electricity generated through the connection point for that small generating unit.

Figure 1 below demonstrates configurations that meet and do not meet these requirements.

[1] Refer to the relevant jurisdictional Service & Installation Rules and consult with the network service provider (NSP).

[2] In addition to any other requirement under the National Electricity Rules and/or jurisdictional requirements for a metering installation, all meters installed in an exempt distribution network must be in an accessible location with safe, convenient access at no cost to the customer to facilitate meter reading by the network operator and the customer or their respective agents and, where relevant, to permit meter testing and maintenance.

Figure 1 SGA configurations



What services can a Small Generation Aggregator provide?

An SGA can provide energy services and market ancillary services to the NEM.

An SGA can provide contingency market ancillary services but not regulation market ancillary services[3].

How does the Small Generation Aggregator participate in the National Electricity Market?

After AEMO approves an SGA registration application, the SGA is given access to NEM market systems. The SGA classifies the small generating units it is financially responsible for as:

- Market generating units through AEMO's Market Settlement and Transfer Solution (MSATS) system.
- Ancillary Service Loads (ASLs) to provide market ancillary services through AEMO's Portfolio Management System.

AEMO pays the SGA:

- The electricity spot price for the electricity produced by its market generating units.
- The FCAS market price for the FCAS enabled on the ancillary service units, if the SGA also provides market ancillary services.

Why was the SGA framework established?

The SGA framework was established to allow the owners of small generating units to have the additional option of selling electricity from those units to an SGA instead of to a Market Customer. An SGA has access to the NEM spot price without each small generating unit owner having to register with AEMO. This change was designed to reduce the barriers to small generation being able to directly participate in the NEM.

[3] Regulation frequency controller ancillary services (FCAS) providers are centrally controlled by AEMO's Automatic Generation Control (AGC) system, whereas Contingency FCAS providers are required to monitor frequency locally and automatically trigger a response in line with the settings of the FCAS controller as agreed with AEMO. See the Market Ancillary Service Specification (MASS) for further information.

What is a Market SGA?

Under clause 2.3 of the National Electricity Rules (NER):

- The SGA is the Registered Participant.
- The Market Small Generator Aggregator (MSGA) is the Market Participant category.

Can an SGA aggregate generation from rooftop photovoltaic (PV) to sell into the NEM?

Clauses 2.3A.1(b) and (e) of the NER require each small generating unit to have a separate connection point to be classified as a market generating unit. This is consistent with the NER policy position which requires each connection point to have a single person as the financially responsible Market Participant[4]. Accordingly, an SGA can only aggregate rooftop PV if there is a separate connection point and NEM compliant metering installation for each rooftop PV. If the rooftop PV and household or commercial premise share the same connection point, the generation from the rooftop PV is sold to the retailer.

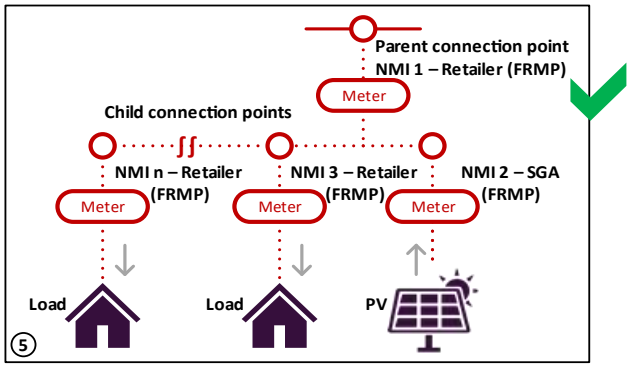
Can an SGA aggregate small generating units connect to an embedded network?

The Embedded Network framework was established to provide customers in embedded networks access to retail competition. This concept can also be applied to SGAs. Accordingly, under the NER, an SGA can sell electricity to the NEM from small generating units within an embedded network. Some conditions apply:

- The site must be established in the NEM as an embedded network, with a parent connection point and a child connection point.
- The embedded network must meet the AER's requirements and conditions to be an exempt network[5].
- An accredited Embedded Network Manager (ENM) must be appointed by an Exempt Embedded Network Service Provider[6].
- Each connection point must have a financially responsible Market Participant and NEM compliant metering installation.

AEMO's Guide to Embedded Networks provides further information on these arrangements. Figure 2 demonstrates a typical embedded network configuration for an SGA.

Figure 2 Embedded network



Does clause 7.8.13 of the NER (Joint Metering Installations) indicate that more than one Market Participant can share a single metering installation at one connection point, i.e., at a household or commercial premise?

Clause 7.8.13 of the NER deals with interconnectors.[7] In this circumstance, an interconnector is a single connection point that has two metering installations to account for the interconnector flow between the jurisdictions (e.g. for the NSW-Victorian interconnector there is a metering installation at the NSW and Victorian end).

This provision allows AEMO (on behalf of the market) to identify the Metering Coordinator for the data from

[4] The AEMC considered this policy as part of the Multiple Trading Relationships rule change and determined not to change it.

[5] Refer to the AER's Electricity Network Service Provider – Registration Exemption Guideline.

[6] Refer to the AER's Electricity Network Service Provider – Registration Exemption Guideline.

[7] Defined in the NER as "A transmission line or group of transmission lines that connects the transmission networks in adjacent regions."

that connection point, particularly if the Market Participants have not notified AEMO of the responsible Metering Coordinator.

As described previously, clause 2.3A.1(b) and (e) of the NER require each small generating unit that has been classified as a market generating unit to have a separate connection point. This is consistent with the NER policy that each connection point has a single financially responsible Market Participant.

Can a small generating unit provide market ancillary services if it is physically capable of doing so?

From 31 March 2023, transitional arrangements for the Integrating energy storage systems into the NEM Rule[8] will enable SGAs to provide market ancillary services from their small generating units. To do so, SGAs will be required to apply to AEMO for approval to classify the connection point for their small generating unit as an ancillary service load in accordance with clause 2.3.5 of the NER. SGAs may also apply to AEMO for approval to aggregate their ancillary service loads in accordance with clause 3.8.3(a1) of the NER.

Market ancillary services are a part of the central dispatch operated by AEMO. Participating in the central dispatch process requires certain telemetry and equipment.

Upon application, SGAs are required to demonstrate their ability to deliver ancillary services, in accordance with the Market Ancillary Service Specification[9].

If applying to provide contingency market ancillary services, an SGA must undergo a technical assessment. As part this technical assessment, an SGA will be required to complete a number of tests to determine the maximum ancillary service capability of the ASL, including frequency injections tests on site, as well as desktop simulations or laboratory testing of the FCAS controller.

In addition to being physically capable of providing ancillary services, appropriate metering and market IT systems must be in place to provide contingency market ancillary services.

What information does an SGA applicant need to provide on particular small generating units at registration?

AEMO does not require specific information on any particular small generating unit. However, AEMO does require an SGA applicant to provide evidence of how the small generating unit(s) would be connected. This information allows AEMO to form a view, as required by the NER, on whether the SGA applicant intends to classify a small generating unit within a reasonable amount of time. This information also helps AEMO understand whether the applicant will be able to comply with the NER, particularly regarding connection point and metering installation requirements.

How do I apply to be registered as a Small Generation Aggregator?

See AEMO's website for:

- The SGA Application Form.
- The SGA Registration Guide.

[8] See https://www.aemc.gov.au/rule-changes/integrating-energy-storage-systems-nem

[9] See https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/system-operations/ancillary-services/market-ancillary-services-specification-and-fcas-verification-tool.

Where can I find more information?

See AEMO's website for the Guide to Exemptions and Classification of Generating Units.

See the AEMC's website for a copy of Chapter 2 of the National Electricity Rules.

For any further enquiries, please contact AEMO's Information and Support Hub via

- supporthub@aemo.com.au or
- call 1300 236 600.

This fact sheet is only a summary of the SGA arrangements. Registration applicants are responsible for ensuring they understand the relevant provisions of the National Electricity Rules and other applicable instruments, which prevail in the case of any inconsistency.

For clarification on registration matters consult AEMO, for individual connection proposals consult the relevant Network Service Provider and Metering Coordinator.