Classifying coupled production units

Fact Sheet

This fact sheet explains how AEMO classifies coupled production units within an integrated resource system in the National Electricity Market (NEM). It looks at how the different classification types can be managed for coupled production units.

AEMO has taken all reasonable care in the preparation of this document, the information should not be construed as advice, and you should seek your own advice and if necessary, consult with AEMO regarding individual proposals.

If you intend to operate an integrated resource system within the NEM, you will need to read and understand the National Electricity Rules (NER) and associated procedures, guidelines and standards relevant to your connection, registration and ongoing operational requirements.

This fact sheet is an overview of registering and classifying coupled production units. You can get more information on registration from the AEMO website and registration fact sheets.

Legend for pictorials in this fact sheet are:

Production Unit Classification

Unless an exemption applies, anyone who owns, operates or controls a system connected to the NEM grid must register as an integrated resource provider or a generator and 'classify' each production unit in that system. Classification is required for both dispatch (scheduling) and energy market settlement.

Each NEM production unit must be classified as either bidirectional or generating and scheduled, semi-scheduled or non-scheduled based on its size and technical characteristics.

Each production unit must also be classified as market or non-market, depending on whether the participant registering the system is classifying the connection point as one of its market connection points or a third party participant is doing so. The third party, e.g., a Market Customer, will become the Financially Responsible Market Participant (FRMP) for the energy at the connection point.

Classification of Coupled Production Units

A coupled production unit has more than one technology behind the inverter, for example, battery and solar PV. These are typically bidirectional units (BDUs). Depending on the absolute and relative size of the technology components, and any other production units connected at the common connection point there are multiple ways in which these types of production units can be classified. The scenarios below illustrate a 2-technology coupled production unit aggregated under NER 3.8.3 for the purpose of dispatch. The approach is extensible to more than two technologies should this be required.

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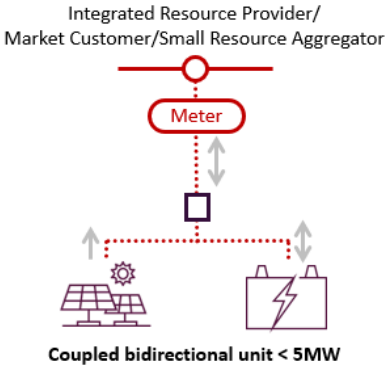
a) Scenario: Coupled Production Unit < 5MW

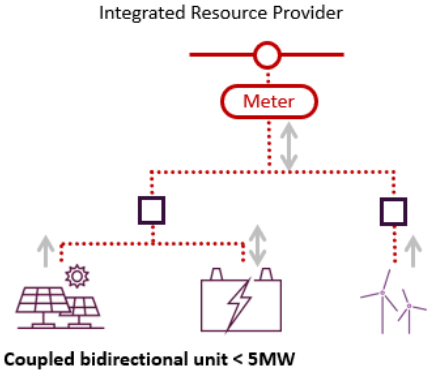


A standalone coupled production unit with a nameplate rating < 5MW would typically be exempt from registration.

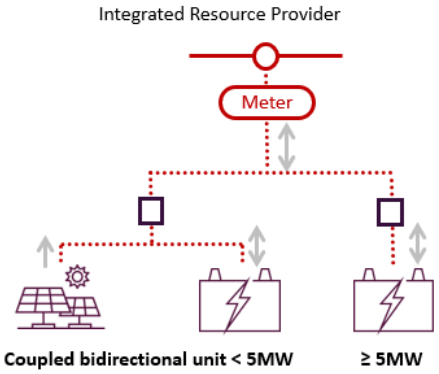
The connection point can be classified as a market connection point by an integrated resource provider or market customer or as a small resource connection point by an integrated resource provider, small resource aggregator without AEMO's approval. Compliance with NSP technical requirements in the connection agreement is required.

b) Scenario: Coupled Production Unit <5MW in an integrated resource system ≥5 MW

Only an integrated resource provider can register an integrated resource system.



An integrated resource system with a nameplate rating ≥ 5 MW will most likely require registration1. A coupled production unit with a nameplate rating <5MW in an integrated resource system will typically be classified as a non-scheduled BDU if there are no other BDU connected.



If there are other BDUs connected so that in aggregate the nameplate rating of BDUs at the connection point is ≥5 MW then the coupled BDU will be classified as scheduled.

1 Under certain circumstances a person may apply for exemption from registration where an integrated resource system is ≥5 MW with bidirectional units <5 MW.

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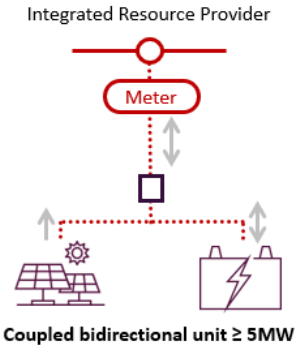
c) Scenario: Coupled Production Unit ≥5MW classified as scheduled BDU

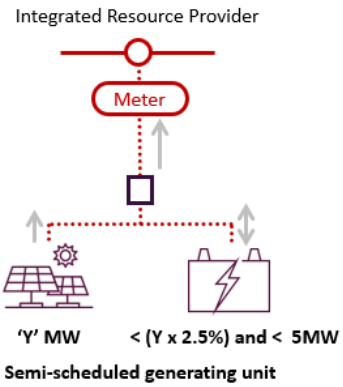


A standalone coupled BDU with a nameplate rating ≥

5 MW is not eligible for exemption and will be registered by an integrated resource provider and classified as a scheduled BDU unless AEMO approves its classification based on separate technologies (see scenario e)).

d) Scenario: Coupled Production Unit ≥5MW classified as semi-scheduled generating unit

Under certain circumstances AEMO will approve classification of the BDU as a semi-scheduled generating unit.



Non-intermittent capacity <5 MW

Non-intermittent capacity <2.5% intermittent capacity

No consumption at the connection point except auxiliary load (battery charging is not auxiliary load)

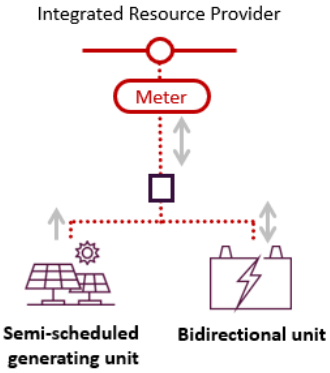
Maximum generation capacity = intermittent capacity

Various technical requirements including ECM, dispatch self-forecast and SCADA for intermittent and non-intermittent plant

Although not operationally bidirectional this system is still considered an integrated resource system and may only be registered by an integrated resource provider

e) Scenario: Coupled Production Unit ≥5MW classified as semi-scheduled generating unit and scheduled BDU

Under certain circumstances AEMO will approve classification of the BDU as two separately classified plant, i.e., as a semi-scheduled generating unit and a scheduled BDU.



In this case, the separate technologies will be dispatched as if they were independent production units. This may require constraints to be applied to apportion availability between units that share equipment to avoid unachievable dispatch instructions. A conformance cap

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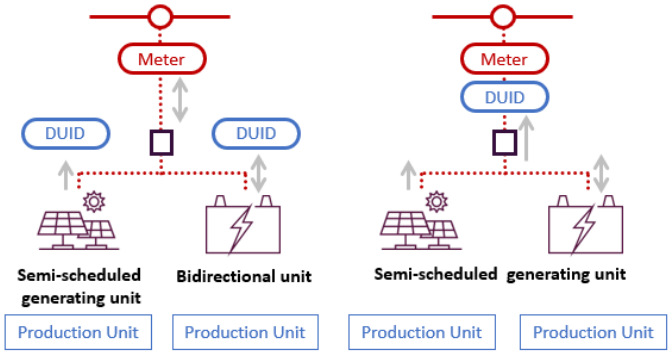
would be applicable to the solar PV and target to the battery unless aggregate conformance applies2.

Requirements for classification will mirror those of the non-coupled units, for example, an ECM will be required for the intermittent plant,

Coupled Production Units in Dispatch

The treatment of each production unit in AEMO's systems and dispatch align with its classification(s). Information for each technology is requested separately in AEMO's registration application forms.

More than one classification e.g., a semi-scheduled generating unit and a scheduled (or non-scheduled) bidirectional unit will require two DUIDs. A production unit set e.g., one solar and one battery, will be assigned to each DUID. Non-scheduled DUIDs are assigned for system set up purposes only and are not dispatched.



A single classification will have a single dispatchable unit (DUID). A production unit set e.g., solar and battery, will be identified for each technology, and assigned to the single DUID.

Registration Fees for Coupled Production Units

Registration fees for Integrated Resource Providers (IRP) will be considered through consultation on the NEM participant fee structure in 2025-2026. In the interim, IRP applicants will incur the registration fees relevant to the type of unit they are connecting to the NEM or role they are undertaking. This will be discussed with connecting applicants upon receipt of their application.

Please see the AEMO Budget and Fees.

In relation to coupled production units, when you apply to register as an IRP or a generator and 'classify' each production unit in that system, classification is required for both dispatch (scheduling) and energy market settlement. You will be charged registration fees in line with each classification. Where there are multiple classifications each one is charged. If there are multiple technologies with the same classification, the second technology within the classification is charged at half the classification fee.

For example:

A Coupled Production Unit ≥5MW classified as semi-scheduled generating unit and scheduled BDU.

2 https://aemo.com.au/-/media/files/initiatives/integrating-energy-storage-systems-project/aemo-factsheet-aggregate-dispatch-conformance.pdf

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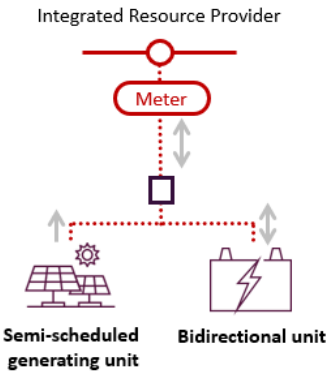

This production unit includes two classifications, semi scheduled generating unit and a scheduled bidirectional unit. You would be charged the market semi-scheduled generating unit fee and the scheduled generating unit fee.

An application is considered at a point in time. If a project needs to progress in stages, e.g. half of the units in the system are registered and then in the future the second half are registered, these are considered separate registration applications, as such each of those registration application will be charged a registration fee.

Applicants are advised to contact AEMO early in the design phase of their project to confirm the latest registration and technical requirements.

Where can I find more information?

See AEMO's website for further fact sheets, classification guides and other related information.

The NER are published on the AEMC's website.

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

supporthub@aemo.com.au or

call 1300 236 600