



Australian Government

Department of Climate Change, Energy,
the Environment and Water

Aggregated Resources in the Capacity Investment Scheme

Consultation Paper



© Commonwealth of Australia 2025

Ownership of intellectual property rights

Unless otherwise noted, copyright (and any other intellectual property rights) in this publication is owned by the Commonwealth of Australia (referred to as the Commonwealth).

Creative Commons licence

All material in this publication is licensed under a [Creative Commons Attribution 4.0 International Licence](https://creativecommons.org/licenses/by/4.0/) except content supplied by third parties, logos and the Commonwealth Coat of Arms.

Inquiries about the licence and any use of this document should be emailed to copyright@dcceew.gov.au.



Cataloguing data

This publication (and any material sourced from it) should be attributed as: *Aggregated Resources in the Capacity Investment Scheme Consultation Paper*, Department of Climate Change, Energy, the Environment and Water, Canberra, July 2025. CC BY 4.0.

This publication is available at <https://consult.dcceew.gov.au/aggregated-resources-in-the-capacity-investment-scheme-consultation>

Department of Climate Change, Energy, the Environment and Water

GPO Box 3090 Canberra ACT 2601

Telephone 1800 920 528

Web dcceew.gov.au

Disclaimer

The Australian Government acting through the Department of Climate Change, Energy, the Environment and Water has exercised due care and skill in preparing and compiling the information and data in this publication. Notwithstanding, the Department of Climate Change, Energy, the Environment and Water, its employees and advisers disclaim all liability, including liability for negligence and for any loss, damage, injury, expense or cost incurred by any person as a result of accessing, using or relying on any of the information or data in this publication to the maximum extent permitted by law.

Acknowledgement of Country

We acknowledge the Traditional Owners of Country throughout Australia and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past and present.

Contents

1 Introduction	4
1.1 Background	4
1.2 Have your say.....	6
1.4 Aggregated Resources	6
2 CIS Product Design.....	9
2.1 Key product design features.....	9
2.2 Tender type.....	9
2.3 Eligible wholesale contracts in the net revenue underwriting calculation	11
3 CIS Eligibility Criteria.....	12
3.1 Market participation.....	13
3.2 Requirement to be a special purpose vehicle	13
3.3 30MW Capacity threshold	14
3.4 Two-hour minimum duration threshold.....	15
3.5 Participation in other government underwriting schemes	15
3.6 Project commitment date.....	15
4 CIS Merit Criteria	16
4.1 Project deliverability.....	16
4.2 Financial value and system benefits.....	17
4.3 Quantifying capacity available for dispatch.....	18
4.4 First Nations and community engagement, and benefits sharing	19
4.5 Assessment of other benefits of aggregated resources	20
5 Additional considerations	20
5.1 Metering of aggregated resources	20
5.2 Additional commentary	21
Glossary.....	22

1 Introduction

1.1 Background

The Capacity Investment Scheme (CIS) is an Australian Government program to accelerate new investment in renewable generation capacity, such as wind and solar, and clean dispatchable capacity, such as battery storage. This investment is aimed at supporting Australia's energy transition that will:

- contribute to filling expected reliability gaps as ageing coal-fired power stations retire and electricity demand grows
- place downward pressure on electricity prices, and
- help deliver the Australian Government's target of 82% renewable electricity by 2030.

The target of 32 GW of new capacity nationally under the expanded CIS is made up of:

- 23 GW of renewable energy generation capacity, and
- 9 GW of clean dispatchable capacity (4-hour equivalent).

The CIS comprises a series of competitive tenders for underwriting contracts in Australia's two largest electricity markets - the National Electricity Market (NEM) and the Western Australian Wholesale Electricity Market (WEM). Through the tender assessment process, projects need to meet eligibility criteria and be assessed for merit and financial value. Merit criteria include:

- contribution to system reliability and benefit
- project deliverability and timetable
- organisational capability
- First Nations engagement and benefit sharing, and
- community engagement and benefit sharing.

Successful CIS projects will receive a long-term (up to 15 years) revenue underwriting agreement called a Capacity Investment Scheme Agreement (CISA), from the Australian Government. The CISA has an agreed revenue 'floor', revenue 'ceiling' and annual payment cap. This provides a long-term revenue safety-net that decreases financial risks for investors and encourages more investment when and where it is needed.

In this paper the term 'Aggregated Resources' is used to represent the wide range of commercial, industrial and residential energy resources and loads that are not currently scheduled through the market dispatch process that could respond, individually or as part of an aggregation, to market price signals. This includes industrial loads, small non-scheduled generation and storage units such as bidirectional units, household consumer/distributed energy resources (CER/DER) and smart devices, that have a capacity below 5 MW.

The Office of the Capacity Investment Scheme (OCIS) is also considering the potential for the inclusion of scheduled resources with capacities ≥ 5 MW and < 30 MW, even though there is no current framework to support their aggregation. This includes small solar or wind farms that haven't received an exemption from central dispatch, and batteries with capacities above the 5 MW

automatic exemption threshold. OCIS will explore the possibility of administratively bundling these scheduled resources together to surpass the 30 MW minimum capacity CIS eligibility threshold.

Recent developments on Aggregated Resources

The Australian Government understands that Aggregated Resources (ARs) are predicted to play an increasingly significant role in the energy transition. The AEMC's recent rule change on [integrating price-responsive resources](#) is intended to facilitate participation of these resources in central dispatch and longer-term arrangements. These changes are also being considered as part of [National Electricity Market wholesale market setting review](#) and the [National CER Roadmap](#) work on distribution-level system and market operator models.

AEMO's 2024 Integrated System Plan (ISP) assumes significant growth for both coordinated CER storage and rooftop solar across the NEM. Modelling commissioned by the AEMC has reported the net benefits of the effective integration and coordination of CER to be in the billions by 2040. The Energy and Climate Change Ministerial Council (ECMC) endorsed the National CER Roadmap to facilitate the effective integration of these resources as a critical part of Australia's path to becoming a renewable energy superpower economy where consumers can access clean, affordable and secure energy.

Non-scheduled energy resources have been below the 30 MW threshold to be eligible to participate in CIS tenders to date. A significant proportion of these were excluded from central dispatch with restricted revenue streams and reduced contribution to reliability which prevents an equal comparison with grid-scale projects.

Changes have since occurred due to a recent rule change through the AEMC's December 2024 final determination regarding integrating price-responsive resources in the NEM. Small resources will soon be able to voluntarily participate in central dispatch as Voluntarily Scheduled Resources (VSRs).

Given the increasing importance of these types of technologies, the Australian Government is incentivising their use through programs specifically designed to cater for small-scale renewable energy projects such as:

- [Small-scale Renewable Energy Scheme | Clean Energy Regulator](#)
- [Cheaper Home Batteries Program - DCCEEW](#), and
- [Household Energy Upgrades Fund - Clean Energy Finance Corporation](#).

State governments also support small resources through a range of programs including:

- [ACT Sustainable Household Scheme - Climate Choices](#)
- [NSW Household energy saving upgrades | NSW Climate and Energy Action](#)
- [South Australia's Virtual Power Plant | Energy & Mining](#), and
- [Victoria Neighborhood batteries](#).

The inclusion of any ARs in the CIS would be intended to be complementary to these programs.

The purpose of this paper is to consult with stakeholders on the potential inclusion of ARs, including scheduled resources with capacities below 30 MW, in CIS NEM tenders scheduled to open in late 2025.

This consultation process was flagged in earlier Market Briefs, including for CIS Tender 3 (NEM Dispatchable).

1.2 Have your say

The Department of Climate Change, Energy, the Environment and Water (DCCEEW) seeks targeted feedback from stakeholders on key consultation questions highlighted in this paper.

Feedback may include only those questions that are relevant to you. Please submit your feedback through the [Consultation Hub](#) by **DATE OF CLOSURE 5:00pm AEST 5 August 2025**.

Please note this consultation paper is limited to the inclusion of ARs and Other Small Projects in the NEM, not in the Western Australia WEM. The WEM does not currently have rules that would allow for the participation of ARs in central dispatch.

1.3 Aggregated Resources

Market participants are increasingly aggregating small non-scheduled resources and operating them in a coordinated manner in response to spot prices and providing services such as contingency Frequency Control Ancillary Services (FCAS).

These resources can be:

- small generating units and small bidirectional units (which are exempt from AEMO's registration requirements)
- household or commercial scale Virtual Power Plants (VPPs)
- flexible demand such as data centres, irrigation or pumping loads, industrial heating or chilling loads, and
- a range of future technologies.

This paper will also consider demand response above 30 MW and other small projects which are above AEMO's 5 MW standing exemption threshold but below the 30 MW minimum threshold for participation in the CIS¹. These may be bidirectional units (batteries) with capacity greater than 5MW

¹ [Guide to Registration Exemptions and Production Unit Classification | AEMO](#)

or renewable generation assets between 5 MW and 30 MW that have not received an exemption from AEMO from participating in the central dispatch process.

Aggregated Resources (ARs) offer a range of benefits to the energy transition:

- They are quick to install and less likely to incur delays to commissioning
- They may improve the utilisation of distribution networks and/or reduce the load on transmission networks, and
- They may improve the overall economic efficiency of the market if included in central dispatch².

AEMO's 2024 Integrated System Plan projects a total of 3.7 GW of ARs participating in central dispatch in the NEM by 2030 and 18 GW by 2040 as coordinated CER storage in the Step Change scenario³. Work is now underway on frameworks for integrating ARs into the NEM, with policy, market and system settings forming a part of the National [CER Roadmap](#). In December 2024, the AEMC released its final determination regarding the integrating price-responsive resources into the NEM rule change⁴. This foundational reform enables aggregations of small resources to participate in NEM scheduling and dispatch processes on a voluntary basis. AEMO is currently implementing the rule change, which is expected to go live in May 2027.

The CIS is a technology neutral scheme which seeks to support a broad range of technologies to complement the existing market. This approach can widen the pool of potential participants in CIS tenders while technologies and business models in ARs are developing. The potential for a competitive revenue underwriting mechanism to address investment barriers for the different technologies and changing models of ARs, along with accommodating the additional transaction costs associated with management of smaller assets, needs to be better understood.

² See for example AEMC's modelling for its rule change around integrating price responsive resources into the NEM.

³ Coordination is assumed to play a crucial role in delivering the ISP's optimal development path; without effective coordination of CER resources, around \$4.1 billion of additional grid-scale investment would be needed, increasing the costs that are reflected in consumer bills.

⁴ [Integrating price-responsive resources into the NEM | AEMC](#)

To facilitate this process, projects which share similar features and needs may be grouped. For the purposes of this consultation, resources that can be aggregated to sums greater than 30 MW have been divided into 4 categories:

1. Small resources connection points

Aggregation of small resource connections points, comprising either:

- a. small stand-alone generating units (<30 MW), or
- b. small stand-alone bidirectional units (<5 MW).

2. Non-exempted capacity bundles

Non-exempted (scheduled) units of ≥ 5 MW and <30 MW capacity bundles,⁵ comprised of either small stand-alone generating units or small stand-alone bidirectional units but not both.

3. Technology combinations

Aggregations comprising a combination of technologies, such as exempted hybrid projects (e.g. 3 MW solar farm with a 1.5 MW bidirectional unit at the same connection point) and a number of stand-alone <5 MW solar farms.

4. Demand response and Virtual Power Plants

Aggregated demand response (e.g. data centres, irrigation or pumping loads) or household/commercial scale VPPs.

We welcome feedback both from the perspective of existing AR owners and business models already operating in the NEM, as well as from potential future technologies or business models.

Please share your expectations of the likely size, composition and trajectory of Aggregated Resources in the National Electricity Market (NEM), both by 2030 (the Australian Government's 82% renewable electricity target) and beyond.

- **What are the key investment barriers for Aggregated Resources in the current market? If possible, be clear when referring to Aggregated Resources sub-categories as detailed in this section.**
- **What would be the value of government revenue underwriting through the CIS in addressing these barriers?**

⁵ OCIS is currently considering administrative options to achieve this. It is envisioned that non-exempt resources with units operating under a small resource connection point may be combined so that their combined capacity surpasses the 30 MW capacity threshold for CIS eligibility.

2 CIS Product Design

The following information is provided as general guidance to aid in understanding the CIS design. It does not indicate commitment by the Australian Government to any particular course of action in relation to CIS Tenders⁶.

2.1 Tender types and products

There are 2 types of CIS NEM tenders. A proponent will bid into a Dispatchable Tender to secure a Dispatchable Capacity Investment Scheme Agreement (CISA) or a Generation Tender to secure a Generation CISA.

Hybrid projects are different to standalone generation or dispatchable projects. A hybrid is defined as a project including both generation and dispatchable storage assets behind a single connection point. Hybrid projects can bid into either Dispatchable or Generation tenders, but only the portion of the hybrid aligned to that specific tender type is eligible for support.

For example, a project consisting of a 100 MW solar farm and a 50 MW, 4-hr battery applying to a Generation Tender would only qualify for a Generation CISA to underwrite the activities of the solar farm. A hybrid project cannot receive both a Generation and a Dispatchable CISA.

An AR may be comprised of multiple standalone renewable generation and storage assets across numerous individual sites and connection points and possibly include sites supporting hybrid assets. Therefore, either CISA type (i.e. Generation CISA or Dispatchable CISA) may be suitable for an AR project, provided the relevant aggregated assets meet the required capacity threshold. This is discussed further in Section 3.3.

2.2 Key product design features

There are a range of features that are common to both the Generation and Dispatchable CISAs, including:

- The contract contains milestone provisions requiring progress of project development to achieve commercial operations, as payment commences upon energisation and commercial operations.

⁶ Specific tenders each have their own requirements. You should rely on your own legal and business inquiries to independently determine the relevance and currency of this information in relation to CIS Tender rounds. For more information on participating in a CIS Tender [read the Tender Guidelines specific to the tender you wish to participate in](#). The Tender Guidelines contain all the necessary and accurate information for participation in CIS Tenders.

- All revenue streams from eligible sources are included in the net revenue underwriting calculation.
- Payments will be calculated and paid every quarter during the CISA support term. The support term will also be a bidding parameter in the tender process and Project Operators may put forward alternate contract terms where improved value for money can be demonstrated.
- To allow transparency in calculating the quarterly revenues and costs, there is a requirement that the project be owned by a Project Operator that is a Special Purpose Vehicle (SPV). This is discussed further in the relevant section regarding Eligibility Criteria.

One key difference between the two tender types relates to the payment mechanisms for each.

- A revenue floor, ceiling and annual cap are bidding parameters in the tender process. The payment mechanisms for the two CISA types vary slightly.
 - For the Dispatchable CISA, the bid variables are expressed in total project net revenue in dollars (\$).
 - For the Generation CISA, the bid variables are expressed in net revenue per MWh (\$/MWh) of generation.

Payment mechanism for the Dispatchable CISA:

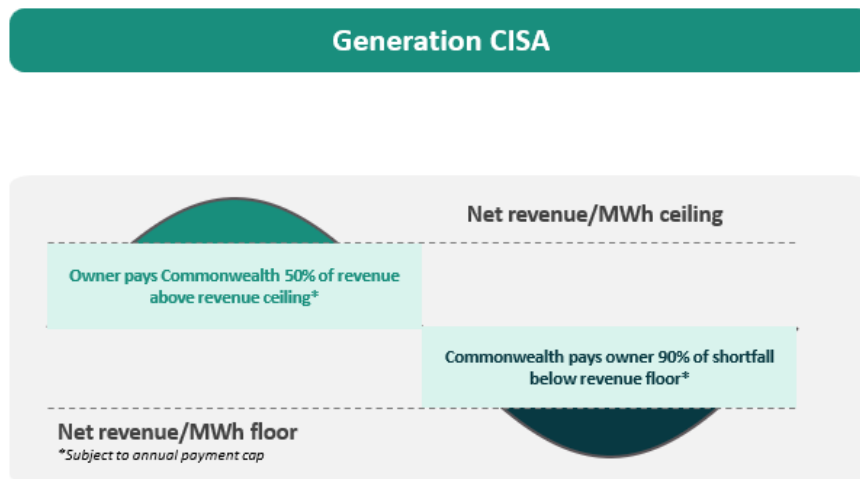
The payment mechanism for the Dispatchable CISA is based on a comparison between the bid variable. These include Project Operator's net revenue and an Annual Revenue Floor, Annual Revenue Ceiling and Annual Revenue Cap.



Payment mechanism for the Generation CISA:

The Generation CISA provides revenue underwriting for net revenue per MWh of generation sent out by a project. The payment mechanism for the Generation CISA is similar to the Dispatchable CISA but calculated based on net revenue per MWh (Volumetric Net Revenue) – a bid parameter.

Net revenues are divided by the generation (adjusted for Marginal Loss Factors and Distribution Loss Factors) sent out by the project in that quarter (in MWh). Periods of negative pricing are excluded from the calculation. This approach incentivises the Project Operator to maximise the generation the project produces during positive pricing periods and places any volume risk with the Project Operator who is best placed to manage that risk.



The nature of the support provided by the two different payment mechanisms targets different risk allocations appropriate for either variable renewable or dispatchable generation.

Please provide your feedback on whether a Dispatchable Capacity Investment Scheme Agreement (CISA) or a Generation CISA would be more appropriate for an Aggregated Resources project.

In particular, we are interested in feedback regarding the current CIS product design for the treatment of hybrid projects and how this may impact Aggregated Resources.

2.3 Eligible wholesale contracts in the net revenue underwriting calculation

Under a CISA, a project's net revenue earned calculation can include Eligible Wholesale Contracts.

The definition of what can be considered an Eligible Wholesale Contract will be outlined in the CISA, however at a minimum these arrangements will be bona fide commercial arrangements entered into on an arm's length basis with a tenor of at least 12 months and for a duration that is a multiple of 12 months.

Related party contracts are by default not considered to be Eligible Wholesale Contracts. This is because related party contracts are often bespoke/not liquid and therefore difficult to benchmark against an observable reference price. The tender guidelines for [CIS Tender 3](#) and [Tender 4](#), include

further guidance about the underlying principles used to assess whether a contract would be deemed an Eligible Wholesale Contract.

It is important to note that a contract deemed ineligible for inclusion in CIS underwriting can result in a 'double liability' scenario where a project would need to pay both their contractual counterparty and the 50% clawback under the CISA if average spot prices are above the ceiling. Some proponents have stated that this **double liability** may disincentivise proponents from entering contracts if they already have a CISA. Proponents that are concerned about double liability may also wish to consider their bidding strategy around the setting of their proposed ceiling.

CIS Tenders 3 and 4 include a clause which enables proponents who seek to enter into an ineligible contract that may give rise to double liability risk, the opportunity to opt-out of the CIS. The Tender 3 Market Brief section on [Eligible Wholesale Contracts, Opt-Out Provisions, and Financial Value Assessment Clarifications](#) provides guidance on bidding a high ceiling (as the setting of the ceiling affects the significance of the double liability issue) on project assessment.

We welcome your feedback on the CIS settings around Eligible Wholesale Contract revenue and how this may impact business models of Aggregated Resources.

- **For proponents, to what extent do you anticipate contracts associated with your project to be recognised as Eligible Wholesale Contracts?**

3 CIS Eligibility Criteria

To date, CIS eligibility criteria have included a requirement that projects be able to participate in central dispatch. Recently the AEMC's final determination of its rule change regarding price-responsive resources in the NEM provided an avenue for ARs to voluntarily participate in central dispatch, creating the opportunity to consider potential options for CIS inclusion.

However, other CIS eligibility criteria may also present challenges for ARs. Some of these criteria include:

- market participation where projects must be registered with AEMO for the central dispatch process
- to be a Special Purpose Vehicle (SPV), where CIS underwriting is applied to costs and revenues exclusively within the SPV
- 30 MW minimum capacity threshold
- 2-hour minimum duration for dispatchable capacity
- project must not already receive revenue underwriting support from another government source, and
- projects must not have been identified as committed or existing, in the AEMO Generation information published on a date nominated in the relevant Tender Guidelines.

While some Eligibility Criteria are explicitly addressed in this paper, we encourage feedback on any others that may disadvantage ARs under the Additional Comments section at the end of this paper.

3.1 Market participation

A key purpose of the CIS is to contribute to filling expected reliability gaps as ageing coal-fired power stations retire and electricity demand grows, as well as placing downward pressure on electricity prices. To this end, a CIS eligibility requirement for both dispatchable and renewable tenders is that *“projects must be registered or must state in its application that it intends to register with AEMO for the central dispatch process under the National Electricity Rules (NER) in relation to a region of the NEM”*.

The introduction of the Voluntarily Scheduled Resources (VSR) unit type as part of the AEMC's recent rule change⁷ has created a path for ARs to become eligible for a CISA under the market participation criteria. Registration as VSRs will facilitate the participation of aggregations of CER and small resource connection points in the NEM's central dispatch process.

There are additional benefits to the wider system in bringing the activities of exempt generation and bidirectional units into AEMO's view.

The Capacity Investment Scheme (CIS) eligibility requires that projects be registered with the Australian Energy Market Operator (AEMO) to participate in the NEM central dispatch process.

For smaller projects, this may require registration as Voluntary Scheduled Resources (VSR). CIS eligibility will be dependent on a proponent's commitment to register with AEMO as a VSR (expected in May 2027).

We welcome feedback on the advantages and disadvantages of requiring Aggregated Resources to participate as VSRs if they are to participate in the CIS.

- **If you are a proponent with Aggregated Resources projects, are you planning to register them as VSRs?**
- **Would this requirement by the CIS affect your decision making on this issue?**

3.2 Requirement to be a Special Purpose Vehicle

A Proponent must be a Special Purpose Vehicle (SPV) to be eligible to enter into a CISA with the Australian Government.

An SPV is an entity that carries on the project and no other business, holds all of the assets and is entitled to all of the revenue. This criterion means that all ARs must be owned by a single legal entity.

⁷ [Integrating price-responsive resources into the NEM | AEMC](#)

This is to ensure that the financial dealings of the project are open and transparent for the purpose of underwriting, and that there is no scope for value shifting within related entities.

Importantly, CIS underwriting would only be applicable to revenue accruing to the project that is associated with being underwritten. For example, where an electricity retailer also has a VPP, all activities associated with the VPP would be required to be in a separate SPV.

Please share your views on how the requirement for the project to be a SPV may impact Aggregated Resources and other small projects participating in the CIS.

3.3 30 MW capacity threshold

To be eligible, CIS generation projects must reach a minimum threshold of 30 MW. This is to balance the value of the project being underwritten with the cost associated with running the tender (including managing, evaluation and administration) and managing the CISA contracts until expiry.

Within the NEM, the various constituent elements of ARs vary in size from kW scale up to MW scale. The AEMC rule change to integrate price responsive resources into the NEM provides a pathway for these elements to be aggregated into a single resource for the purposes of AEMO dispatch.

Specifically, a group of smaller aggregated projects may qualify, provided these are registered as a single Voluntary Scheduled Resource (VSR) within one of the zones determined by AEMO. To be eligible for the CIS, the total capacity of the aggregated projects would need to be 30 MW or greater and owned within a single SPV that does not include other projects (see Section 3.2).

The 30 MW threshold is clearly defined for ARs comprised of standalone generation or clean dispatchable storage assets. Scheduled/semi-scheduled <30 MW projects would be required to be administratively bundled to exceed the 30 MW threshold for CIS eligibility. A mechanism to achieve this is yet to be determined and would only be enacted if there is significant demand and the administrative costs and complexity are low.

For ARs that incorporate hybrids, the aggregation for the 30 MW threshold will only be applied to the assets relevant to that specific tender type. For example, an aggregation of 35 MW of small-scale solar PV (including behind-the-meter hybrids) and 9 MW of <5 MW batteries within those hybrid sites would meet the threshold for a generation tender but not for a clean dispatchable tender.

Please provide your feedback on the proposed framework for projects to aggregate to meet the 30 MW threshold for eligibility for the CIS.

- **Small projects in the 5-30 MW range that are not eligible for an exemption will require the development of an administrative bundling approach to enable them to meet the 30 MW threshold. Are you aware of any mechanism that may facilitate this?**
- **The AEMC rule change regarding Voluntary Scheduled Resources (VSRs) charges AEMO with the definition of zones and allows them to be changed over time. We welcome views on how to best manage the risk that zonal definitions may change over time.**

3.4 Two-hour minimum duration threshold

CIS dispatchable tenders have required a project be able to dispatch its registered capacity continuously for a minimum duration of 2 hours. For example, a 35 MW aggregation of projects would have to total 70 MWh or more.

Please provide your feedback on whether the 2-hour minimum duration requirement for eligibility may exclude Aggregated Resources and other small projects participating in the CIS.

3.5 Participation in other government underwriting schemes

A project must not be the subject of (or have been awarded) a long-term (5 years or more) revenue underwriting agreement with the Australian Government, or a State or Territory of Australia, under which 50% of the project's nameplate capacity is contracted for a purpose under that revenue underwriting agreement and where the project receives, or is, or will become entitled to receive, either periodic or ongoing payments under that revenue underwriting agreement.

Under this eligibility criterion, the following ARE permitted in relation to a project:

- non-concessional funding provided by the Clean Energy Finance Corporation
- revenue associated with certificates created or received under an Australian Government, State or Territory capacity, generation or green certificate scheme
- financial incentives or payments received from an Australian Government, State or Territory to alter electricity consumption to influence electricity demand
- investment received from an Australian Government or State or Territory government body
- grants from an Australian Government or State or Territory government body, whether repayable or not, and
- any new policy announced to support the development of renewable energy projects (i.e. funding from the proposed NSW Energy Security Corporation).

The AEMC rule change on price responsive resources includes an incentive mechanism designed to support participation as a Voluntary Scheduled Resource (VSR). The final implementation details of this incentive are yet to be determined, however if this mechanism is not in the form of revenue underwriting, it would likely be considered as eligible project revenue under the CIS.

Are you aware of any government revenue support programs that may preclude Aggregated Resources and other small projects participating in the CIS?

3.6 Project commitment date

The CIS aims to accelerate new investment in renewable generation and clean dispatchable capacity. There has been an eligibility requirement that a CIS project must not have been identified as committed or existing in the AEMO [Generation information](#) by a specified cutoff date (Tender 3

cutoff: version published on 23 January 2023, Tender 4 cutoff: version published on 29 January 2024).

As ARs are not expected to appear in the AEMO list, an alternate source of verification is required for the date of a project's committed or existing status.

What documents would demonstrate that a project comprised of Aggregated Resources had reached a level of maturity that equates to that of AEMO's identification of a project as committed or existing in the Generation Information file?

How might you demonstrate that your project comprises new capacity and does not incorporate existing resources?

4 CIS Merit Criteria

4.1 Project deliverability

The deliverability merit criterion assesses a project's progress and feasibility to reach Financial Close and commercial operations. Proponents that can provide detailed evidence to demonstrate their ability to deliver each milestone, with clear articulation of strategies for mitigating delivery risks, may be considered of higher merit.

As discussed in Section 1.3, a key benefit of ARs is that in some circumstances they may face a lower level of delivery risk. For example, assets that fall under the 5 MW standing exemption threshold may have a simplified process for connecting to the grid.

AR projects will face different delivery risks compared to utility-scale projects, but deliverability risk remains an important competitive assessment criterion. Risks may vary depending on the constituent resources within each individual AR project. This may include:

- delays in one or more of the constituent projects, pushing back the Commercial Operations Date (COD) beyond the target deadline
- for household VPPs, unclear or insufficient customer benefits, leading to low uptake in AR projects
- backstop mechanism settings that limit or turn off exports, disincentivising participation in AR projects, and
- conflict between Distributed Network Service Provider (DNSP) operations and the variability of arrangements and operating parameters of AR projects.

Please comment on the discussion in the paper of potential risks to project delivery competitiveness for Aggregated Resource projects.

What types of evidence would constitute proof of a proponent's ability to deliver on key project milestones?

4.2 Financial value and system benefits

The competitive assessment of financial value is a key CIS merit criterion. This includes the expected forecast CISA cost to the Australian Government, as well as three key benefits:

- a project's expected contribution to system reliability and its impact on the electricity system, including forecast contribution to avoid unserved energy events
- a project's contribution to supporting the Australian Government's 82% renewables target by 2030, and
- a project's effect on wholesale electricity costs.

The competitive assessment process considers a range of energy market scenarios, and will model the impact of specific projects, including their Financial Value Bids.

It is expected that >30 MW aggregates of small generation or dispatchable projects that individually fall below the CIS 30 MW eligibility threshold could be modelled as operating similarly to larger grid scale assets. The cost and expected benefits of an AR bid will be competitively assessed against utility-scale resources during the Financial Value Assessment of the tender process.

Business models of price responsive resources such as a VPP comprised of household batteries, or an industrial demand response project are still evolving and feature a higher degree of diversity. Projects that have been observed to use bidding strategies such that they only dispatch when the spot price is above a high threshold, such as \$10,000/MWh or the market price cap, may not be scored as highly due to a lower forecast dispatch/revenue level and consequently lower contributions to the system. A grid-scale battery with the same capacity may score more competitively where its bidding strategy targets dispatch whenever there is a spot price spread that exceeds the cycling cost of the battery.

During the tender assessment, business models with a lower level of forecast dispatch/revenue may not be scored as favorably due to a higher predicted CISA cost, as well as a lower contribution to supporting the 82% renewables target and lower suppression of wholesale electricity costs.

The intention of the CIS Financial Value Assessment is to use modelling assumptions that are as close as possible to the likely behaviour of the relevant technology type. One option for formulating modelling assumptions for expected bidding behaviour of price responsive resources in the Financial Value assessment could be to include historical evidence about the bidding behaviour of these asset types.

Alternatively, the Project Operator could provide alternative information in their tender bid, where it expects to have a different business model/bidding behaviour. In this situation, the assessment process would include investigating options for assurances that the nominated business model/bidding behaviour would eventuate. This could include options around contractual commitment to the nominated bidding behaviour.

Please provide your views on the challenges discussed in the consultation paper associated with the Financial Value Assessment of Aggregated Resources, especially price responsive resources.

- **Would using historical evidence around bidding behaviour of your asset type be an appropriate approach to the Financial Value Assessment?**
- **Would you prefer to provide expected operational information for the Financial Value Assessment? If so, do you have views on potential options for assurances to make this operational strategy binding?**

4.3 Quantifying capacity available for dispatch

As with Section 4.2, it is expected that small generation or dispatchable projects below either the CIS 30 MW eligibility threshold, or AEMO's 5 MW standing exemption threshold could be modelled as operating similarly to larger grid scale assets.

Measuring the expected capacity that is available for dispatch, as opposed to nameplate capacity, may be challenging for ARs that include flexible demand and VPPs due to the conflicting requirements of satisfying on-site demand, providing energy to the grid and any interventional limits within the VPP/demand response contract. For demand response providers there is additional complexity of the value of lost productivity and possible minimum energy level requirements.

Therefore, it is likely that the available capacity in any particular 5-minute interval of an AR that includes demand response may be more uncertain than for a comparable grid-scale resource with the same nameplate capacity.

This will need to be incorporated into the CIS assessment of a project's expected contribution to reliability, as well as the Financial Value Assessment discussed in Section 4.2.

Options for modelling the expected capacity available for dispatch during tender assessment could include the use of historical evidence relating to the asset category, or the use of specific operational information provided by the proponent. This may require options for assurances that the nominated business model/bidding behaviour would eventuate. This could include options around contractual commitment to the nominated bidding behaviour.

Please provide your views on the challenges associated with modelling the expected available capacity of an asset for CIS assessment purposes, particularly with respect to household Virtual Power Plants (VPPs) and demand response.

- **Would using historical evidence around bidding behaviour of your asset type be an appropriate approach to modelling the expected available capacity?**
- **Or, would you prefer to provide expected operational information for this assessment? If so, do you have views on potential options for assurances to make this operational strategy binding?**

4.4 First Nations and community engagement and benefits sharing

To deliver positive social and economic outcomes from CIS supported projects, the Australian Government is embedding strong social licence policy expectations on clean energy project proponents who receive funding support to help deliver their projects. This is in response to feedback from stakeholders including First Nations groups, Australia's manufacturing sector, unions, peak bodies, and regional and community organisations.

In CIS Tenders 3 and 4, projects are attributed higher merit where they demonstrate better practice and genuine:

- First Nations engagement, and First Nations social and economic benefits
- community engagement, and social and economic benefits
- demonstrated use of local content, employment, skills and training, and
- adoption of high labour standards.

The Australian Government is continuing to evolve the design of the CIS and the social licence design settings through the life of the program considering experience and market developments.

Please provide feedback on the current best practice approaches to social licence for Aggregated Resources and small-scale projects.

How would the current CIS tender approach to assessing First Nations and community benefits impact on the assessment of Aggregated Resources?

Local content and employment

Existing CIS merit criteria assessed during the tender process include commitments for a percentage of a project relating to the use of local content, including locally sourced materials and suppliers that support the development of Australian supply chains. Local content refers to goods, services, and resources produced, manufactured, or supplied within Australia and New Zealand.

The current CIS tender design also includes promoting employment, skills and training, and adoption of high labour standards.

Please provide feedback on how Aggregated Resources can contribute to promoting greater use of local content, employment, training and apprentices including support for Australian trades such as electrical.

4.5 Assessment of other benefits of Aggregated Resources

Utility-scale assets primarily connect to the transmission network. In contrast, it is expected that a large proportion of the constituent elements of many, if not most, ARs will be connected to distribution networks. This has the potential to improve the utilisation of these networks, alleviate constraints on the transfer capacity of transmission networks, or reduce peak load.

Project benefits associated with improved network utilisation are not currently considered in the CIS assessment framework.

Please provide views on the potential benefits of Aggregated Resources relating to improved network utilisation and how these could be quantified for the purposes of the CIS assessment process.

5 Additional considerations

5.1 Metering of Aggregated Resources

The current metering requirements for utility-scale resources may be incompatible with, or prohibitively expensive for, some ARs. The AEMC has recently released its final determination on *Unlocking CER benefits through flexible trading*⁸, part of which updated the requirements regarding metering in Chapter 7 of the National Electricity Rules to support the implementation of ARs.

A rigorous metering approach that meets the appropriate technical standards is important to support the dispatch and remuneration process as well as calculation of any support via the CIS. It should not, however, be an overly onerous requirement for a proponent to meet the relevant standards.

Does the AEMC's work on metering standards for Aggregated Resources alleviate concerns regarding metering requirements in the context of the CIS, considering the implications for billing?

⁸ [Unlocking CER benefits through flexible trading | AEMC](#)

5.2 Additional comments

We welcome any additional insights on the opportunities and challenges relating to the use of revenue underwriting to support Aggregated Resources.

Glossary

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AR	Aggregated Resources
CER	Consumer Energy Resources
CIS	Capacity Investment Scheme
CISA	Capacity Investment Scheme Agreement
DCCEEW	Department of Climate Change, Energy, the Environment and Water
GW	Gigawatts
ISP	Integrated System Plan
MW	Megawatts
MWh	Megawatt hours
NEM	National Energy Market
OCIS	Office of the Capacity Investment Scheme
SPV	Special Purpose Vehicle
VPP	Virtual Power Plant
VSR	Voluntarily Scheduled Resource
WEM	Wholesale Energy Market