

Project Team – Capacity Investment Scheme
Department of Climate Change, Energy, the Environment and Water

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Capacity Investment Scheme Consultation Paper

The Australian Energy Council ('AEC') welcomes the opportunity to make a submission to the Capacity Investment Scheme (CIS) Consultation Paper (Paper) and thanks the Department for its provision of engagement forums.

The AEC is the peak industry body for electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. AEC members generate and sell energy to over 10 million homes and businesses and are major investors in renewable energy generation. The AEC supports reaching net-zero by 2050 as well as a 55 per cent emissions reduction target by 2035 and is committed to delivering the energy transition for the benefit of consumers.

The CIS is a very significant commonwealth initiative and will become the only explicit National Electricity Market (NEM)-wide capacity-support mechanism following ministers' decision to abandon the Energy Security Board's (ESB) capacity mechanism. That ESB capacity mechanism had been developed over three years of intensive industry consultation. This paper, however, represents the first, and potentially last, formal industry consultation with respect to the CIS design. AEC members have also reported difficulties in meeting the short submission period and that much of the important details emerged at the forums mid-way through the period. The Department is encouraged to consider releasing an additional consultation paper later in 2023 which would seem unlikely to delay the tendering processes.

Western Australian based AEC members keenly await the provision of additional information with respect to how the CIS would operate in the South-West Interconnected System (SWIS) and the North-West Interconnected System (NWIS). The AEC strongly recommends that a consultation paper in that regard be released soon and that these markets receive relatively equal access to the CIS.

Context

Whilst the AEC recognizes minister's decision to pursue a technology and age-specific CIS, it repeats its position as maintained throughout the ESB process, that a technology and age-neutral approach should be taken to capacity mechanisms, and that environmental objectives are more appropriately achieved by other means.

With the CIS supporting market entry but not existing capacity, it unavoidably undermines the profitability of the latter. This opens the high prospect of driving closure of existing capacity before new capacity is ready to adequately replace it, with negative consequences for reliability and price.

With this in mind, the AEC considers the Department should accelerate work, alongside states, on structured coal closure arrangements. Throughout 2023 the AEC has been unsuccessful in contacting the relevant Department team nor New South Wales team on this matter and repeats its requests for such a dialogue.

The AEC also considers that because the CIS does not support, and arguably undermines, existing market-facing capacity, this necessitates high attention to be given to the adequacy of NEM market settings and their consistency with reliability expectations. These are the responsibility of the

Australian Energy Market Commission (AEMC) and its Reliability Panel rather than the government, but if the government agrees with the AEC, it could formally indicate this view to these parties.

The AEC also draws attention to the NEM's Retailer Reliability Obligation (RRO) which was introduced prior to the ESB's capacity mechanism project. The RRO places a considerable compliance burden on AEC members, large customers, the Australian Energy Regulator (AER) and the Australian Energy Market Operator (AEMO). Meanwhile the AEC considers the RRO ineffectual at providing stakeholder reliability confidence, evidenced by the ESB's recommendation of an explicit capacity mechanism despite the RRO.

The ESB project intended for the RRO to be retired upon introduction of a capacity mechanism, an intent the AEC strongly supported. With the CIS the successor to the capacity mechanism, the AEC requests the government follow through on the ESB's intent by proposing a NEM rule change to retire the RRO.

Broad Form of the Capacity Investment Scheme

The AEC had previously sought clarity of whether CIS capacity was intended to:

- sit within the market, thereby affecting price but not reliability¹, or to
- sit outside the market, thereby affecting reliability but not price.

The paper has clearly answered this question in the former. It intends for the capacity be available to contract with retailers, or be integrated in retailers' businesses, such that it can be used to support customers. The AEC has approached this submission from the perspective of how the capacity can be best leveraged for this intent.

The AEC welcomes the design not applying a "Contract for Difference" approach which would, by removing market risk, have made the capacity unavailable to the market and removed any incentive to perform to the needs of the market. The AEC also welcomes the government's preference to principally rely on market signals to assure the capacity's physical performance. Having revenue measured over an extended period before triggering the collar is necessary to achieve this and the AEC welcomes this aspect. The AEC also welcomes the retention of market exposure when the collar is invoked.

However, AEC members report the collar design introducing many complexities including:

- difficulties developing a financial model to determine the implications of different strike prices for the cap and floor, in order to inform a competitive tender;
- difficulties for the government and AEMO Services in comparing the implied value of competing offers as tenderers are able to adjust numerous variables;
- potentially perverse incentives in relation to triggering collars;
- lowered market operational incentives when the collar is triggered or near its triggers;
- difficulties in accurately measuring total revenue from the broad range of revenues and costs the capacity is exposed to;
- incentives to structure arrangements, especially contracting, to minimize measured revenue; and
- an unknowable and unlimited government trailing financial exposure to the collar.

The AEC understands the government's view that at a time of great electricity system transition, which is a key plank of government climate policy, it is appropriate for the taxpayer to absorb some of the

¹ CIS operating in the market lowers the cost of new-entry and therefore market prices, but this also has the effect of displacing market-based entry, so it should not be expected, in the long-term, to improve reliability.

risk of the transition. And, that this risk transfer should apply to high revenues as well as low revenues. The AEC understands these are the rationales behind the collar.

Whilst not disagreeing with the government's rationales, after considered discussion, the AEC has formed the view that the complexities listed above outweigh the collar's benefits.

The overriding preference the AEC has received from its members is for a simpler scheme. The simplest is one that provides only fixed competitive grants upon completion or paid progressively according to availability. Under this model, the government would have no trailing liabilities, and, after completion, all ongoing market risks would be retained by the capacity.

Whilst this simplest fixed-grant approach is the AEC's preference, should the government be unwilling to pursue such a major change, the AEC recommends consideration of models that are less challenging for members than the Paper's approach, such as:

- A floor-only scheme such as that used in the New South Wales roadmap; and
- A cap that only acts to draw down previous floor receipts.

The collar's commercial structure is more fully discussed later in the submission.

A forward plan

The AEC strongly welcomes the intent, as mentioned in the public forum, of the provision of a forward tendering plan in 2024. The AEC suggests this should include a forecast of MW capacities to be acquired by region, by year, to the end of the CIS.

The AEC recognizes that such a forecast would be subject to change, as the tendered quantities will alter according to observed tender prices against the CIS budget and changing regional reliability outlooks. This does not negate its usefulness. The AEC suggests a periodic update process, at least annually, of this forward plan.

The AEC also suggests the government publish a clear statement of intent about whether, upon reaching the CIS budget, the government will consider extending the CIS or replacing with something similar. This is essential to give confidence to investors who may consider investing outside the CIS.

Setting the contribution to reliability

Regional reliability need

The AEC strongly supports the Paper's intent that the allocation of CIS volume against regions should be in accordance to reliability need as assessed through national processes and the national reliability standard as promulgated by the Reliability Panel. The AEC agrees this should be guided by the Electricity Statement of Opportunities (ESOO) modelling approach as carried out by AEMO core.

Ideally a consistent ESOO approach should be used not only across NEM regions, but also across grids.

The AEC notes the Paper's intent that, having determined the matter nationally against national standards, jurisdictions will then be consulted. The commonwealth must be guarded to resist a moral hazard of jurisdictions exaggerating their own circumstances in order to gain a greater share of the CIS. The AEC suggests that any jurisdictional consultation should occur simultaneously and equally with investor, or even public, consultation.

Individual asset contribution to reliability

The CIS process can leverage ESOO modelling's ability to assess how different assets can reduce expected Unserved Energy (USE) as an objective measure of the customer benefit of reliability. The AEC supports the use of a MW scaling factor that adjusts presented capacity according to its energy depth, and that this scaling factor should be determined from its modelled impact on USE.

Having employed such a technique, there should be no need to apply an arbitrary minimum energy such as the four-hour requirement mentioned at the forum. An arbitrary cutoff would lead to investments targetting the cutoff rather than system need. Shorter term storage has non-zero reliability benefit, which can be progressively discounted using a modelled avoided USE basis.

The AEC understands that the inclusion of a minimum cutoff related to some jurisdictional concern about the ability of the existing modelling processes to capture their aversion to extended, severe renewable energy droughts, sometimes described as "tail events". The AEC has considered this matter in detail, publishing an expert [report](#) that explains that because reliability events manifest only through rotational load-shedding, there is no need to value the USE deriving from "tail events" higher than other events.

The AEC also recognizes that different firming technologies have different reliability and flexibility characteristics, for example a battery storage versus a biomass-fuelled steam boiler. Bidders would benefit greatly from material that explains how the tendering process would compare these very different technologies.

Eligibility

Zero emissions

The AEC strongly supports implementing the minister's intent for zero emissions to be assessed only from scope 1 emissions. The AEC was very concerned about the practicality and reasonableness of previous suggestions of extending this to stored energy's scope 2 emissions.

The AEC identifies one unintended consequence of the requirement for zero scope 1 emissions. Combustion of biomass and renewable gases, including hydrogen, unavoidably produces trace emissions of non-carbon-dioxide greenhouse gases, such as nitrous oxides. If determining eligibility on scope 1 emissions, this should be set at a non-zero quantity commensurate with these expected trace emissions. Alternatively, the government could simply propose an eligible technology list.

There is some ambiguity in the Paper about whether storage co-located with renewable energy is eligible. The AEC understands it is intended that it is, which the AEC supports.

Demand-Side-Response

Whilst the AEC recognizes the valuable role demand-side action can play in electricity markets, it supports the Paper's proposed constraints upon the eligibility of demand-side options in the CIS. Particularly that it be scheduled as a single large facility and subject to similar reliability and duration expectations as other capacity sources.

Double-dipping

The AEC supports limiting eligible capacity's access to other forms of government support. The AEC agrees with the paper that Large-scale Generation Certificates (LGCs) and the Reserve Capacity Mechanism (RCM) should be excluded from this limitation. Repayable government loans, such as from the Clean Energy Finance Corporation (CEFC), should also be exempted.

The last two dot point suggestions on page 18 are more problematic. Excluding government grants, or any support a jurisdiction “intends to be...complementary”, renders the limitation meaningless. Indeed it could invite jurisdictions to distort the tendering process by allocating complementary support to their favoured technologies and to distort cross-border tenders toward investment in their own state.

Location

The AEC disagrees with jurisdictions being able to specify that capacity must be located within a jurisdictionally declared Renewable Energy Zone (REZ). Firstly, the optimal location of the capacity is a technical question for AEMO, transmission companies and ultimately the commonwealth as counterparty, not the jurisdiction. Secondly, firm capacity is not necessarily exposed to congestion in the same way as renewable energy for which REZs were designed. It is true that a good location for the charging of storage is upstream of congestion as a form of soak, but the actual delivery of firm output is for the purpose of customers, and therefore best located at load centres.

Generally, the AEC would prefer that locational incentives arise only through the market design, which should drive optimal locational decisions, whether the capacity is fully merchant or receiving of a CIS contact.

Tendering approach

The AEC prefers that the tendering process is wholly managed by AEMO Services for all grids. The role of AEMO core should be limited to providing ESOO reliability advice to government.

The AEC agrees with the two-stage bidding process as described and many of the shortlisting criteria for Stage A are mostly standard practice. The AEC supports shortlisting based on advancement of permitting, network connection, compliance with law, technology confidence and proponent experience. The AEC disagrees however with including imprecise concepts such as “social licence, employment and local benefits” that are beyond the purpose of the CIS. The AEC particularly objects to any inclusion of jurisdictional local content requirements.

Performance Assurance

Delivery Assurance

The AEC recognizes that to provide confidence in the integrity of the tendering process, there will need to be deliverability assurance including bonds forfeited against non-delivery. Forfeiture should aim to recover the government’s expected losses in going back to the market to replace the capacity.

Operational Assurance

The AEC strongly supports the Paper’s stated intent that operational performance would be assured through market incentives rather than administrative contractual arrangements. This is possible thanks to avoiding a CFD design that would remove all market risk. Nevertheless, the collar unavoidably affects some of these valuable incentives.

The government has proposed that invoking the collar would de-risk the capacity from 90 percent of market revenues, but leave the capacity exposed to the market for 10 percent in order to retain some of these performance incentives. The AEC agrees that if the collar design is to be retained, sharing the market risk this way is beneficial. The paper doesn’t give a rationale for the choice of 10 percent. The AEC is uncertain of an appropriate figure, but its initial view is that it should be higher than 10, i.e. the capacity should take on a greater share of market risk than 10 percent post-trigger.

Alternatively tenderers may be able to suggest a higher percentage of post trigger market risk and be considered more favourably on that basis.

Lack of Reserve condition assurance

Having decided to assure the performance primarily on market incentives, the AEC feels there is no need to apply a Lack of Reserve (LOR3) obligation to having stored energy of at least 50 percent. This has been drawn from the NSW roadmap, where it has proved more problematic than it first appears. To make such a definitive assurance ahead of time, tenderers are unable to assume that their capacity is fully exposed to market. At worst, they must assume that half of the energy must be continuously withheld in reserve.

The AEC acknowledges that the government has attempted to address these concerns raised about the NSW scheme by adding a two-hour notice requirement to an LOR3 declaration. Unfortunately, the concern remains.

Market incentives should lead to storage being prepared as best as physically possible prior to LOR3 conditions, but the circumstances where an LOR3 arises cannot be always known ahead of time. In the unfortunate situation where market incentives misalign with the needs of the power system², AEMO retains the power of direction. If AEMO observes a failing to replenish its stored energy in the lead-up to an LOR3, the rules already require AEMO to intervene to ensure it does so.

Considering these factors, the AEC considers that the disadvantages of the LOR3 50 percent stored energy requirement exceed its benefits.

97 percent availability criterion

In public forums the government has floated the possibility of a 97 percent availability over time requirement. The AEC recognizes that some degree of initial availability performance will be necessary to demonstrate that the capacity has been successfully commissioned, but would prefer to avoid on-going assessments, especially as availability can vary greatly from year to year. As discussed, it is hoped that market incentives should primarily drive high availability.

The AEC recognizes that the revenue floor, however, should be triggered by poor market conditions, and not by poor physical performance, which may have driven the availability requirement. An alternative approach is when determining revenue, to use hypothetical spot revenue based on 100 percent availability rather than actual revenue. This retains the owner's exposure to its own performance and would allow the government to avoid applying an arbitrary minimum availability.

Price Responsiveness

The paper notes that the capacity "will be required to respond to price signals..". The exact arrangement and purpose is not clear, however the AEC would be concerned if the intent was to dictate the way the capacity was offered and priced into the market. Any such constraints would be unnecessary given the market incentives intended to fall upon the capacity. They could also be highly counterproductive if it constrained the owner's necessary freedom to operate, and sometimes withhold, the capacity in order to optimize the owner's overall portfolio.

Underwriting Instrument Design

Maximising access to the contract market

As discussed at the start of this submission, the proposed design is superior to CFD but is still more complex than the AEC's preferred design which more fully exposes the capacity to market risk.

² An example of this may be where the NEM's Administered Pricing Arrangements are in operation

The capacity is intended to participate in the contract market. To do this, the owner needs confidence that the capacity will provide high revenue during extended high prices. The collar is problematic because after a period when capacity is receiving high spot revenues to defend a sold position, the capacity suddenly becomes unavailable for this.

This means it becomes imprudent for the capacity to enter anything longer than short-term contracting arrangements. And, because the collar operates on a look-back revenue basis, a conservative risk management might even disallow entering short-term contracts as the collar's cap might be triggered on only, say, a month or so of high prices.

Further, if, during a period of a tight market, when sustained high market prices would be expected, owners will observe their total revenues progressively approaching the collar's cap. This then leads to a risk of the cap being triggered, resulting in owners having to cease contracting or buy back their sold position. This will mean that, during an already tight market period, the contract market will tighten further. This will exacerbate market volatility in a way contrary to the intent of the CIS.

For these reasons, the AEC recommends the government shift instead to the New South Wales Roadmap design of a floor-only approach. If the government is unwilling to make this shift, it should nevertheless permit tenderers to propose no (i.e. an infinite strike) collar cap. If provided such an option, these tenders would likely offer a lower floor, and could be considered against finite cap tenders based on expected government exposure.

Another approach suggested by some AEC members is that payments made due to triggering the collar cap be limited to previous payments made under a collar floor.

A further suggestion to avoid some of the unintended consequences to the contract market is that the collar apply over a longer period of time and not claw back any retrospective revenues. For example, revenue performance could be assessed over, say, a three-year rolling window. When the collar is triggered, it would apply only to an upcoming year, after a period of notice. This would make the collar less likely to be activated and would better manage the resulting exit of the capacity from the contract market.

Assessable revenues

With respect to assessing total actual revenues against the collar triggers, the AEC agrees that there is a natural incentive to understate revenue. The government must use techniques to ensure that contract revenue is a fair reflection of what the capacity could reasonably have achieved in the contract market. This is not straightforward and has been contentious in the New South Wales scheme.

It must be recognised that most of the market-facing investment in the NEM and WEM occur within horizontally and vertically integrated energy businesses that operate all their assets as part of a large portfolio. The arrangements used to determine fair contract value need to be approached from the assumption that it is most likely that the capacity will be operated in a large integrated business. Indeed this is a highly desirable form of operation also from the government's perspective and the revenue determination mechanisms should anticipate and encourage its use in this manner. Similarly the arrangements should contemplate leasing arrangements for the capacity to a retailer.

In any case, the market will need upfront clarity on exactly how the revenue is to be determined, for example in the published term sheets ahead of the auction.

Questions about this submission should be addressed to David Feeney, by email David.Feeney@energycouncil.com.au.

Yours sincerely,



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