

Wholesale Electricity Market Rule Change Proposal Submission

RC_2019_05

Amending the Minimum STEM Price definition and determination

Submitted by Economic Regulation Authority

Name:	Nicky Cusworth
Phone:	08 6557 7900
Email:	info@erawa.com.au
Organisation:	<i>Economic Regulation Authority</i>
Address:	469 Wellington Street, Perth WA 6000
Date submitted:	<i>30 April 2020</i>

Submissions on Rule Change Proposals can be sent by:

Email to: support@rcpwa.com.au

Post to: Rule Change Panel
Attn: Executive Officer
C/o Economic Regulation Authority
PO Box 8469
PERTH BC WA 6849

1. Please provide your views on the proposal, including any objections or suggested revisions.

Currently, the market rules require Synergy to bid in capacity at the price floor to provide load rejection reserve and downward load following ancillary services. In October 2019, the market cleared at the price floor (negative \$1,000) in three intervals. In such situations, Synergy risks providing these ancillary services at a financial loss. Synergy's rule change sought to mitigate this risk by raising the minimum Short Term Energy Market (STEM) price in the interim, to negative \$200, to limit its losses should the market clear at the price floor in the future.¹

Synergy's obligation to provide ancillary services could put it in a position that it is unable to cover its efficient costs, and that this is not a desirable outcome. However, the ERA does not consider that amending the minimum STEM price is the most appropriate means of addressing the risk that Synergy faces bidding at the price floor. Further, raising the minimum STEM price may have unintended and adverse consequences for the market.

¹ Synergy proposed negative \$200 as the price floor until AEMO calculates the floor price based on the criteria established through the minimum STEM price rule change proposal, and the ERA approves the price floor as part of its annual decision on energy price limits.

The underlying problem is not the level of the price floor but rather ensuring that Synergy can cover its efficient cost of providing load rejection reserve and downward load following ancillary services. The Energy Transformation Strategy is considering the essential support services required in the Wholesale Electricity Market (WEM) and designing mechanisms to efficiently and economically procure these services. Changes made through the Government's reform of the overall essential services framework and the setting of energy price caps and the price floor are likely to remove or mitigate the risk that Synergy faces in bidding capacity for ancillary services at the price floor. The ERA considers that this wholistic approach to resolving the problem is preferable to trying to partly address it through a single and specific rule change.

If the Rule Change Panel (RCP) decides nonetheless to continue with this rule change proposal, the ERA has the following concerns with the proposed approach.

a) Purpose of a price floor

Under the sub-heading 'Purpose of the Minimum STEM Price', the draft rule change report states that "a floor price should allow Facilities to order themselves in the Balancing Merit Order so the facilities that are willing to pay the highest price for generating are dispatched down last"²³

The ERA suggests that this is a desirable feature of how a price floor should operate, but it is not the proper objective. Generators can offer to the market based on their willingness to sell (their expected cost to supply) without a price floor. The generators with the lowest cost of supply will be scheduled and dispatched first to supply electricity.

There may be other reasons to maintain a price floor. These should be clearly articulated, consistent with the WEM objectives and clearly linked to any proposed rule change.

In proposed clause 6.20.8 (b) the second stated objective of the minimum STEM price is to "limit Market Participants' exposure to Balancing Prices that could threaten the financial viability of a prudent Market Participant".⁴ This is inconsistent with the WEM objectives of minimising the long-term cost of electricity for consumers and not discriminating against certain technologies. In a trading interval, the cost to supply electricity cannot fall below the price floor in any trading interval. This could distort market clearing prices and create economic inefficiency because:

- Generators cannot offer their supply below the price floor when they are willing to do so. This creates a financial risk for generators with high cycling costs and increases wholesale electricity prices above the level they would have been with no price floor.
- It could deter the entry of storage technologies that would otherwise take advantage of substantially negative prices to charge their capacity before supplying that capacity to the market when the prices clear at higher levels.

When price floors are calculated, the level of the floor should reflect all variable and avoidable costs a supplier incurs when AEMO requires the supplier to cease (decommit) or vary its generation in response to changing system demand. These costs are commonly referred to as cycling costs. A price floor that reflects cycling costs ensures that generators with very high

³ Rule Change Panel, 2020, *Draft rule change report: amending the minimum STEM price and determination (RC_2019_05)*, p. 16, ([online](#)).

⁴ Rule Change Panel, 2020, *Draft rule change report: amending the minimum STEM price and determination (RC_2019_05)*, p. 33, ([online](#)).

cycling costs can bid at negative prices to avoid incurring cycling costs when demand is low and abundant generation is available. Consumers can continue to benefit from low energy prices, assuming reduced wholesale prices are ultimately reflected in prices charged by retailers.

b) Suggested changes to the calculation of the floor price

The ERA suggests that the RCP should consider whether the price floor needs to be periodically recalculated or whether it should be fixed at negative \$1000. Experience from the National Electricity Market demonstrates that there is inherent and substantial uncertainty in price floor calculations. In 2014, the Australian Electricity Market Commission (AEMC) cautioned against drawing any conclusions from price floor modelling because of given the considerable uncertainty in the estimated cycling costs included in the calculation. The AEMC decided to maintain the price floor at negative \$1,000/MWh, even though its modelling suggested a price floor of negative \$50/MWh. Since 2000, and despite at least four periodic reviews, the price floor in the NEM has remained at negative \$1,000/MWh.⁵

If the RCP maintains periodic calculation of the floor price, the ERA makes the following comments on the proposed clauses.

i. Proposed clause 6.20.8A

When determining the Minimum STEM Price AEMO must:

- (a) determine for credible scenarios of low demand, the price at which the operator of the Facility with the highest decommitment costs per MW of its minimum stable level of operation in the scenario would, acting reasonably, decommit the Facility should the Balancing Price equal or fall below that price for a single Trading Interval; and
- (b) determine the Minimum STEM Price to be the price that is lower than 90 percent of the prices determined under clause 6.20.8B(a).

“Credible” low demand scenarios can happen at any time of year and generators are likely to have different cycling costs across trading intervals and seasons. Therefore, there is substantial uncertainty in the calculation of cycling costs.^{6,7}

The possible inclusion of several facilities’ costs in the calculation and variability of those costs can result in a distribution of minimum supply costs with a bi-modal or multi-modal shape and a long tail on the negative side, as shown in the stylised diagram in Figure 1. In the tail of the distribution, the possible minimum supply costs are, on average, substantially lower than the 10th percentile of the distribution.

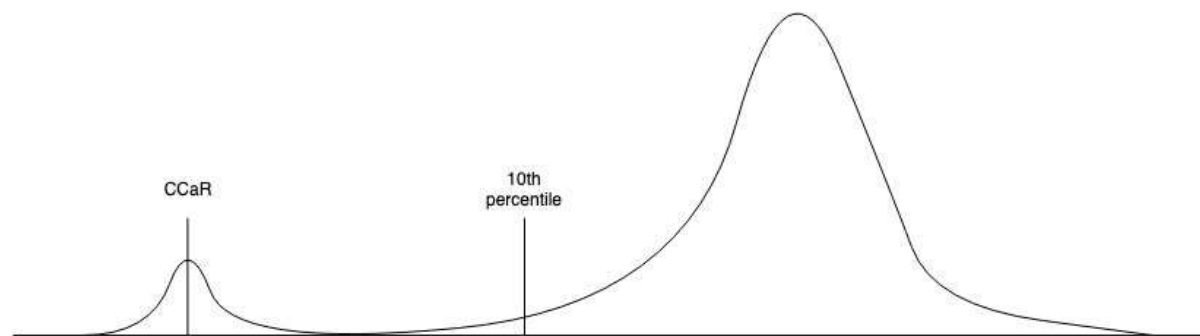
The selection of the 10th percentile for setting the price floor appears arbitrary. For example, generators with high cycling costs would be willing to receive a more negative price (pay more to buyers) below the price floor to avoid the higher cost of cycling. With a price floor set at the 10th percentile these generators will incur losses.

⁵ AEMC, 2014, *Reliability standard and reliability settings review 2014*, p.53, ([online](#))

⁶ The determination of a suitable price floor may not be as straight forward as that for the price caps. The price caps can usually be determined using the supply cost of the highest cost facility in the system. The calculation can provide a reasonable estimate of the supply cost of the facility under extremely high cost conditions.

⁷ For a discussion of the substantial uncertainty in the calculation of minimum supply costs refer to ROAM Consulting, 2013, *Reliability standard and setting review, Draft report to AEMC*, p. 6 and 80, ([online](#)).

Figure 1. Stylised distribution of minimum energy supply cost.



Source: The ERA's analysis

The price floor calculation should account for very low supply costs, so the benefit of low wholesale prices can be passed on to consumers. One possible approach is to calculate the 10 per cent conditional cost at risk, identified in Figure 1 as CCaR.

This approach will limit possible losses:

- For generators with lower energy supply costs than the conditional cost at risk.
- That Synergy is likely to incur in the balancing market from bidding capacity to provide ancillary services at the price floor.

The proposed clause specifies that the minimum supply cost distribution is to be developed based on decommitment costs. The term “decommitment” in the clause is not explained. The ERA assumes that the term refers to cutting the energy supply of a facility to zero. However, by only considering decommitment costs, some credible low supply cost scenarios may be excluded from the calculation. For instance,

- Some embedded generation facilities produce electricity as a by-product of steam generation that is used in an industrial process. For such facilities, the opportunity cost of a change to the electricity output of the generator above the minimum stable generation limit can be very large.
- A generator may install a battery to store electricity during times of excess generation and so avoid incurring decommitment costs during periods of low demand. The opportunity cost of installing technology to avoid cycling costs would not necessarily be included in the proposed price floor calculation.

ii. Proposed clause 6.20.7(a) iii

In conducting the review required by clause 6.20.6 AEMO:

(a) must recommend values for each of the following:

- iii. subject to clause 6.20.6B, the Minimum STEM Price, which is to be based on AEMO's estimate of the decommitment costs of the Facility with the highest decommitment costs in the SWIS and is to be determined with reference to clause 6.20.8 and in accordance with clauses 6.20.8A and 6.20.8B;

Proposed clause 6.20.8A(a) establishes the distribution of minimum supply costs and clause 6.20.8(b) then sets the price floor at the 10th percentile of that distribution. However, proposed clause 6.20.7(a)iii specifies that the price floor should be set based on the decommitment costs of the facility with the highest decommitment cost, which is the minimum of the distribution calculated in clause 6.20.8A(a). Therefore, proposed clause 6.20.7(a) iii appears inconsistent with proposed clause 6.20.8A.

iii. Proposed clause 6.20.8C

In determining the decommitment costs of a Facility under clause 6.20.8A, AEMO must, as far as practicable, use actual costs of the relevant Facility with the highest decommitment cost per MW of its minimum stable level of operation in the SWIS.

The requirement for AEMO to use “actual costs” to calculate the floor price is unclear. The RCP proposed that AEMO determine the price floor based on a merchant power station but adjust its determination if a market participant provided contractual evidence that would lead to a lower minimum STEM price.

The implications of a contractual arrangement on the cost to supply electricity should be assessed against the objectives of the WEM. For example, a contractual arrangement that results in increasing the long-term supply cost of electricity to consumers would not be consistent with the objectives of the WEM and so should not be used to calculate the price floor.

2. Please provide an assessment whether the change will better facilitate the achievement of the Wholesale Market Objectives.

Please refer to section 1.

3. Please indicate if the proposed change will have any implications for your organisation (for example changes to your IT or business systems) and any costs involved in implementing these changes.

The ERA has already provided its estimate of implementing the proposed changes to the Rule Change Panel.

4. Please indicate the time required for your organisation to implement the change, should it be accepted as proposed.

Negligible.
