

New South Wales Government
ENERGY REFORM STRATEGY

**Response to ACCC questions
in relation to the co-insurance arrangement
for the Energy Reform Strategy**

Response to ACCC questions

The ACCC has requested that the NSW Government provide further information on:

- The basis on which the NSW Government expects the level of firm capacity under co-insurance to be set at 80% (as set out in the NSW Government's response to the ACCC's draft determination)
- The terms of the super majority vote to terminate the co-insurance arrangement
- Forced outage rates for the Liddell, Bayswater, Vales Point, Mount Piper, Wallerawang and Eraring plants

This submission responds to the ACCC's requests for further information on these issues.

The level of firm capacity under co-insurance

Co-insurance will provide all participants in the scheme, and particularly new entrants, access to the pooling benefits of the State's portfolio of generators to encourage an effective and efficient management of outage risk. This will allow Gentraders to offer a high level of firm capacity to the market.

The ACCC is interested in understanding the aggregate level of firm capacity that co-insurance can provide and the level of firm capacity at which co-insurance will be set.

In responding to this issue the NSW Government wishes to emphasise that the appropriate question is not at what level co-insurance can be set but rather, what is the prudent level at which to set co-insurance. Setting the prudent level of co-insurance involves considering:

- the trade-off between the desired level of firmness and the probability of a shortfall.
- the most accurate available information on the expected availability of the power stations in the future.

The NSW Government provided a discussion of this trade-off in its original submission between the level at which co-insurance is set and the risk that there may not be sufficient capacity available to supply co-insurance. The level of co-insurance could be set at any level, however there would be trade-offs associated with this.

If the level was set too low, then there would be a very high probability that any party calling on co-insurance would be supplied with co-insurance. However, a low level of co-insurance would not represent a useful level of firm capacity to the Gentraders (ie, they could probably self-manage this outage risk). In contrast, if co-insurance was set too high, there would be a very low probability that any party calling on co-insurance would be supplied with co-insurance. If a high

proportion of demand for co-insurance cannot be met then the arrangement would not necessarily assist in firming up capacity, as Gentraders would still face considerable outage risk (to the extent that demand for co-insurance cannot be met). Gentraders would then need to seek alternative (albeit more costly) arrangements to manage this risk.

The relationship between the level at which co-insurance is set and the probability that there will not be enough capacity available to supply co-insurance is set out in Figure 1 (reproduced from Figure 12 of NSW Government's original submission to the ACCC). This curve was constructed using publicly available estimates of plant outage rates and did not account for any correlations between outages.

Figure 1: Probability of a shortfall of co-insurance as a function of the co-insurance level (assumes co-insurance is allocated by capacity, based on publicly available outage rates).

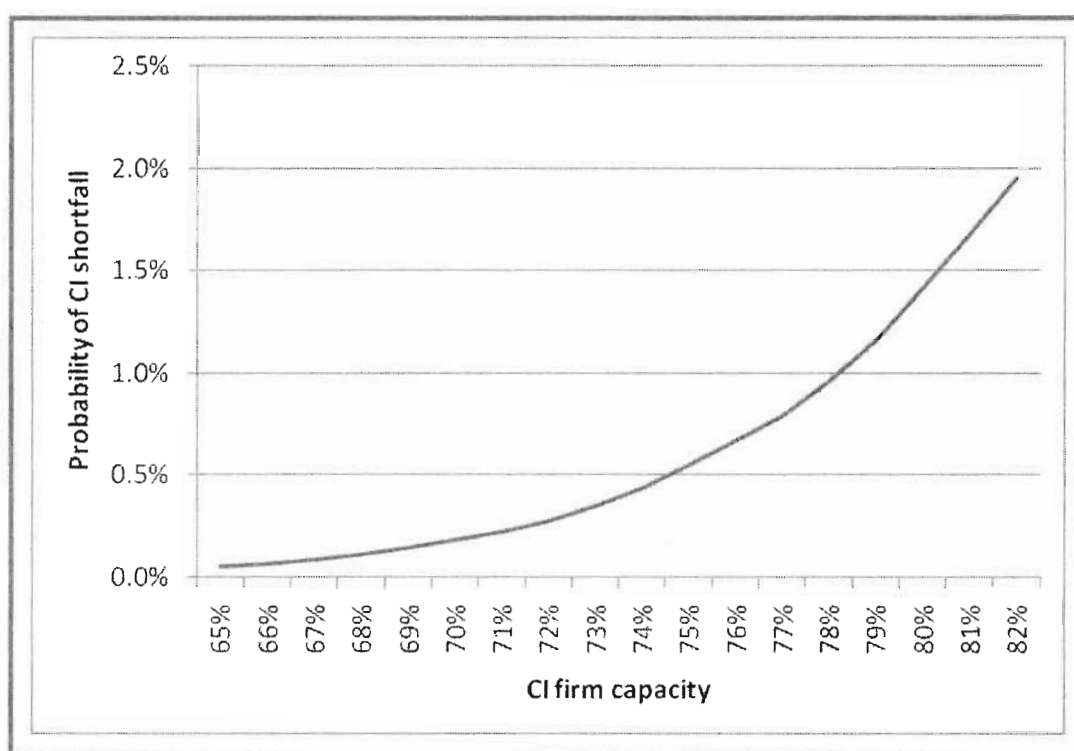


Figure 1 shows that at a co-insurance level of 75%, there is a 0.5% chance that the demand for co-insurance would exceed the supply of co-insurance (ie, there would be a shortfall). The figure of 75% was provided in the original submission to demonstrate the trade-off between the co-insurance level and the certainty associated with that level.

In setting a prudent level of co-insurance consideration needs to be given to the probability of a shortfall in co-insurance, including the availability of accurate information on outage rates, and the correlation of these outages. Figure 1 was

constructed using publically available estimates of the station outage rates. However it does not include consideration of the extent to which outages are correlated within each station or across the entire set of NSW units.

Subsequent to its original submission the NSW Government has further considered the extent to which outages are actually correlated and the impact that has on the probability of a shortfall in co-insurance. This analysis was undertaken using the actual availability data of the NSW State owned generating units over the period 2000/01 to 2008/09¹. This has led the NSW Government to conclude that there is a different relationship between the co-insurance level and the probability of a shortfall occurring given that:

- Forced outages across multiple units in a station are positively correlated. For example, if a problem occurs with the coal mills feeding multiple units a multiple unit outage will occur. Not accounting for this correlation will tend to **under-estimate** the probability of a shortfall.
- Planned maintenance between different stations is negatively correlated. This is due to the fact that AEMO seeks to ensure that reliability levels are not adversely impacted by the timing of planned maintenance. Not accounting for this correlation will tend to **over-estimate** the probability of a shortfall.

Given that planned maintenance relates to larger and more prolonged outages, the effect of the second factor exceeds the first. The net effect suggests that the previous assumption of no correlation between different types of outages lead to an overestimation of the probability of a shortfall for a given co-insurance level.

The NSW Government's submission in response to the ACCC's draft determination considered this new relationship between the level of co-insurance and the probability of a shortfall occurring by including the actual availability data of the NSW stated owned generating units over the period 2000/01 to 2008/09².

Based on that consideration, the NSW Government could set co-insurance at a level of 80% whilst still having an acceptably low probability of a co-insurance shortfall occurring. At this level there is a 1.9% chance that the demand for co-insurance would exceed the supply of co-insurance when using the 2008/09 historic availability data³. The NSW Government is of the view that a firm level of 80% (or even 75%) could not be provided more efficiently (at lower cost) with alternatives to co-insurance.

¹ The data used is the publically available MAXAVAIL data published by AEMO. The appropriateness of this dataset is discussed later in this submission.

² The data used is the publically available MAXAVAIL data published by AEMO. The appropriateness of this dataset is discussed later in this submission.

³ Note that this relationship between the co-insurance level and shortfall risk is not directly comparable to the curve presented in Figure 1 as it relates to historic availability data (including correlations between outages) rather than a theoretical model (without correlations) based on expected outage rates.

Terminating the co-insurance arrangement

The NSW Government has consistently noted that if the Gentraders do not consider there to be sufficient benefit from the co-insurance arrangement, then they can choose to dissolve the arrangement. In other words, if the Gentraders can access more effective and efficient forms of insurance in the future, then they can dissolve the arrangement such that they are not required to supply co-insurance.

The ACCC has sought further information regarding the circumstances in which the arrangement could be terminated including the terms of the super majority vote and the number of Gentraders that would be required to vote in favour of terminating the arrangements in order for the arrangements to be terminated.

The NSW Government has previously recognised that the form of the super majority vote needs to balance the interests of providing certainty to new entrant investors that the arrangement will be in place to provide them with an efficient means of managing outage risk, while preventing a single Gentrader from having the ability to deny the other Gentraders the opportunity of terminating the arrangement.

The NSW Government considers that this balance is best achieved by requiring (at most) four of the five Gentraders to vote in favour of discontinuing the arrangement for a super majority to be reached. The actual implementation of the super majority vote however is still under development. Specifically, it is expected that the Gentraders will vote on the basis of capacity rather than having equal rights. This capacity is still being determined as part of the Gentrader contracts and has not yet been finalised.

Forced outage rates

The NSW Government's submission in response to the ACCC's draft determination provided information on the levels of reliability for the Liddell and Bayswater plants. This information showed the proportion of maximum available capacity on a half-hourly basis across all of the Liddell and Bayswater units during 2008/09.

The ACCC has requested that the NSW Government supply the forced outage data for the Liddell, Bayswater, Vales Point, Mount Piper, Wallerawang and Eraring plants. It is assumed that the ACCC is referring to the forced outage data collected on a confidential basis by AEMO in accordance with the guidelines developed by the Forced Outage Data Working Group.⁴

In the time available to respond to the ACCC's questions, the NSW Government has not been able to obtain that data. Furthermore, the NSW Government is of the opinion that the forced outage data is not relevant in assessing co-insurance

⁴ See <http://www.aemo.com.au/electricityops/0240-0003.pdf>

as the arrangement will cover both planned and forced outages and does not seek to differentiate between outage types.

The ACCC has questioned the appropriateness of the use of the MAXAVAIL data by the NSW Government in its submission in response to the draft determination.

The NSW Government considers that the publicly available MAXAVAIL data is the best representation of a plant's actual availability, within the context of assessing co-insurance. It is important to emphasise that it is actual availability or outage risk that co-insurance is designed to manage. The MAXAVAIL data is the closest match to this actual availability for the following reasons:

- It includes all outages - forced, planned and maintenance - all of which are covered by the co-insurance arrangement.
- It represents actual real-time availability as opposed to forecast availability (for example, as reported as part of the PASA process which do not include forced outages and is provided on a forward looking basis).
- The reporting of this data is covered by the good faith bidding provisions under the market rules⁵ and as such represents a truthful record of availability.
- The co-insurance arrangement explicitly refers to this data as the trigger for being able to call on the arrangement.

In assessing the benefits provided by co-insurance it is actual availability data that is relevant, as opposed to a forward looking estimate of availability supplied by the generators to AEMO, as the system operator and planner. As ERM noted in its submission, it is longer term arrangements for managing forced (or unplanned) outages that are difficult to obtain in the market.

The forced outage data that is collected by the system operator is done so to aid it in determining the minimum reserve requirements for the NEM. As such, the data is classified with a perspective towards system reliability (including planned availability), rather than commercial availability. For example, AEMO has determined that neither return-to-service outages nor outages that can be delayed by more than 48 hours are forced outages. This tends to understate the true level of forced outages. While this classification makes sense from the perspective of a system planner, it is not necessarily consistent with how commercial generators think about outages with respect to unfunded difference payment risk. Importantly, the co-insurance scheme is designed to capture all outages, regardless of whether they are forced, planned or maintenance outages.

Therefore NSW Government considers that the best representation of a plant's actual availability is the publically available MAXAVAIL data.

⁵ Clause 3.8.4(b) of Version 33 of the market rules states that changes to availability are subject to the rebidding rules presented in clause 3.8.22, all such rebids are subject to the good faith provision set out in 3.8.22A.