



***Response to Integrated Single Electricity Market (I-SEM)
Capacity Requirement and De-Rating Factor Methodology***

SEM-16-051

**On behalf of
AES Kilroot Power Ltd and AES Ballylumford Ltd**

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Capacity Remuneration Mechanism Capacity Requirement and De-Rating Factors Methodology

Introduction

AES welcomes the publication of the consultation document on I-SEM Capacity Remuneration Mechanism (CRM) Capacity Requirement and De-Rating Factors Methodology (SEM-16-051) and the opportunity to provide comments on the issues raised. AES would like to submit the following consultation response to the Regulatory Authorities.

AES is a global energy company with assets in the all island market consisting of CCGT plant, coal and gas fired conventional units, additional distillate fired peaking gas turbine plant and new technology Battery Energy Storage Array (BESA). AES is a non-vertically integrated independent generator which owns and operates Kilroot and Ballylumford power stations in Northern Ireland with a combination of merchant and contracted base load, mid merit and peaking plant. The responses to this consultation are therefore conditioned by the nature of our current position and portfolio of assets operating in the SEM.

CAPACITY REQUIREMENT & DERATING FACTORS METHODOLOGY – HIGH LEVEL MESSAGES

This response is submitted with reference to the specific questions raised in the consultation paper and based on our current knowledge of the detail that is available on the design of the I-SEM. The answers requested to the comments and questions set out in the relevant sections in the consultation paper are set out below and AES would also like to submit the following high level messages.

- AES broadly supports the methodology for the determination of the capacity requirement for I-SEM that incorporates the 8 hour loss of load security standard and a least-worst regret analysis scenario, and including reserve provision. However we have a number of concerns regarding the determination of the derating factors particularly with respect to the values determined for interconnectors.
- The determination of the required level of capacity may be amended by the outcome of the corresponding locational issues consultation process currently ongoing and it is important that any decision on the capacity requirement methodology should allow for accommodation of the decision of the locational issues consultation.
- AES has concerns that the assumptions used in determining the interconnector derating factors may be over simplified resulting in an overestimation of the reliability and contribution of the interconnectors to the capacity requirement which does not take into account
 - Reliance on security of supply from neighbouring markets and the impact of coincident scarcity

- The consequence of overestimation of the interconnector contribution resulting in under procurement of capacity from SEM generators leading to capacity shortfall at coincident scarcity events
- Historical forced outage rates on both interconnector given recent significant outages for both
- AES views that Market Participants would have a better understanding of their delivery risks than the Market Operators and RAs and therefore believes that the use of tolerance bands should be provided to allow participants flexibility at times of high delivery concern and provided for in CRM Decision 1.

SECTION 2 THE PROPOSED METHODOLOGY

The SEM Committee welcomes views on all aspects of the methodology proposed and the historic and forecasts inputs used including:

A. The determination of Capacity Requirement;

- The proposed methodology developed is required to implement the SEMC decisions taken in the CRM decision papers which amongst other items require that capacity is procured for the I-SEM as a whole rather than for separate zones within the I-SEM. It is important that the procurement process allows space for the outcome of the current locational issues consultation paper which could require a flexible approach.
- The methodology must incorporate the requirement to retain the 8 hour loss of load security standard therefore it is important that the derating factors for plant and interconnectors appropriately reflect capacity that will reliably be provided at times of scarcity to meet this standard.
- AES broadly supports the concept of the least worse regrets approach to determining the appropriated capacity requirement for the I-SEM but would also point out that analysis of the value of lost load has shown that it is more cost efficient to over procure than under procure.
- Concern over the over estimation of reliable capacity from interconnectors – elaborated further in point E below.

B. The treatment of operational reserves in the determination of Capacity Requirement;

- AES broadly supports the inclusion of the reserve to cover the largest infeed requirement in the capacity requirement methodology however we would question why the largest infeed used to set the reserve requirement was selected as 444MWS representing the firm capacity of the largest generator infeed and not 500 MWs for the Interconnectors.

C. The technology groupings;

- AES broadly supports the technology grouping approach as detailed in the consultation paper against assessment by individual units and acknowledges the greater statistically robust outcomes this approach affords.
- However AES is concerned that the contribution from Interconnectors is overly optimistic for a number of reasons expanded on further below, AES cannot understand how technology groupings can be applied such that historical

performance is completely ignored particularly in a technology category such as Interconnectors with only two relevant participants and therefore low sample size.

- AES welcomes the clarification of the distillate OCGT technology in the table and would like to see Battery storage included in the storage category.

D. Determination of the marginal de-rating curves;

- In determination of the marginal derating curves, a number of options were presented and run-hour weighted averaging was selected as the preferred option. AES wishes to highlight the distinction between availability i.e. being able to generate and availability when running which evaluates availability only when exporting power, incorporating outage information. For units that do not run very often this would not give a true reflection of the reliability of the units and some measure of reliability should be included in the calculation.

E. The determination of Effective Interconnector Capacity;

- AS mentioned above AES has concerns that the assumptions used in determining the interconnectors derating factors may be over simplified resulting in an overestimation of the reliability and contribution of the interconnectors to the capacity requirement.
- The EU expectation of electricity flow to where scarcity is indicated by a price signal could result in potential load shedding in the supplying market(s) in which case the supplying market would in all probability ensure its own security of supply in advance of any export requirements.
- The likelihood for coincident scarcity in I-SEM and BETTA is significant and is more likely to occur in the balancing market and given the corresponding size of interconnection relative to the size of the system capacity, the contribution of interconnectors should not be over relied upon.
- AES recommends a more prudent approach to the determination of the interconnector derating factors and the contribution to the I-SEM capacity requirement.

F. The use of the TSO De-Rating Model in conjunction with the RA-determined values of Effective Interconnector Capacity and the outage rates for the interconnector Technology Class to determine the marginal de-rating factors to be applied to the interconnectors.

- Due to the potential for TSO conflict of interest, AES welcomes the RA led independent consultation process on the derating factors to apply to the interconnectors.
- AES has concerns regarding the determination of the interconnector derating factors as this represents significant departure from the approach in GB to the same interconnectors. Given recent price convergence, expected capacity short fall in GB and historical performance GB took a prudent approach and significantly derated interconnector contributions at times of scarcity.
- The prolonged forced outage of the Moyle over the last number years and the current EWIC forced outage, expected to last for 6 months highlights the risk of over reliance on interconnectors for security of supply.
- The ignorance of historical interconnector performance analysis i.e. forced and scheduled outage rates provides a misrepresentation of the reliable interconnector

capacity and would result in less I-SEM generation procurement and potentially impact on security of supply.

- Over reliance on Interconnector capacity also presents a risk of increased costs for consumers as the cost of over procuring at VOLL is less than the costs of under procuring and making up any deficit at the cost of new entry (or BNE).
- As the interconnector owners only make difference payments when the interconnector is technically unavailable i.e. on outage, the costs for suppliers could also be increased due to the widening of the hole in the hedge.

2.2.2 The Committee would particularly want to receive evidence supporting any alternative to the methodology proposed, where possible supported by quantitative analysis.

SECTION 3 TOLERANCE BANDS

3.2.1 The SEM Committee welcomes views on all aspects of this section including:
Do respondents agree with the minded to decision to set the tolerance bands to zero?

- CRM Decision 1 allowed for the possibility of tolerance bands to be applied to the unit-level De-Rating Factors determined for capacity providers. The purpose of these tolerance bands was to allow some flexibility in the level of participation required from dispatchable plant in the RO auction based on legitimate technical variation in the relevant plant.
- AES views that Market Participants would have a better understanding of their delivery risks than the Market Operators and RAs. AES believes that the use of tolerance bands should be provided to allow participants flexibility at times of high delivery concern.
- As mentioned in the consultation paper AES would argue that there is considerable technical variation between single and multi-shaft gas turbine plant. In the case of AES it is not correct to state that each shaft of a multi shaft unit participates in its own right in the SEM as the request of SONI the AES Ballylumford Block 2 500MW CCGT unit with 3 generators participates as two virtual units of 247MWs each. This operation provides flexibility to the system operator and as a result AES incurs a significant number of starts on its machines impacting on maintenance schedules. AES will be reviewing whether this operation will continue into the I-SEM and views that tolerance bands are a useful component in the determining appropriate derating factors.

3.2.2 The Committee would particularly want to receive evidence supporting any alternative view on tolerance bands, where possible supported by quantitative analysis.