



***Response to Consultation on  
Capacity Remuneration Mechanism (CRM)  
State Aid Update, 2019/20 T-1 Capacity Auction  
Parameters and Enduring Storage De-Rating Methodology  
SEM-18-009 & SEM-18-009a***

**On behalf of**

AES Kilroot Power Ltd and AES Ballylumford Ltd

19<sup>th</sup> April 2018

**Prepared by**

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## **1. Introduction**

AES Kilroot Power Ltd (“AES Kilroot”) and AES Ballylumford Limited (“AES Ballylumford”), (collectively “AES”), welcome the opportunity to comment on the consultation paper relating to the Capacity Remuneration Mechanism (CRM) State Aid Update, 2019/20 T-1 Capacity Auction Parameters and Enduring Storage De-Rating Methodology.

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. AES also operates Energy Storage via its battery array located at Kilroot. The responses to this consultation reflect our current position and portfolio of assets operating in the All Island Market (SEM) and the electricity grids, as well as development plans for new generation and storage assets.

## **2. Comments**

### **A General comments**

AES would ask the TSOs to consider carrying out an assessment of the current awarded DSU de-rated capacity (based on the system wide DRFs) versus the application of the proposed approach for de-rating DSUs using Maximum Down Time. This may help in determining whether a ‘hole in the hedge’ is now apparent for the first T-1 auction capacity period.

### **B Specific Comments**

The references in the responses below relate to the question references in the consultation paper.

### 3.2.1

#### **1) Do you have any comments on the indicative auction timetable set out in this section?**

Section 3.1.5 indicates that the SEM Committee intends to hold the transitional auctions for CY2020/21 and CY2021/22 at the same time, around December 2019. AES suggests that this maybe sub optimal, in that, conducting the auctions for the 2 years at the same time adds risk to the participants ie units may clear in the CY2021/22 and not in the CY2020/21, this additional risk is likely to negatively affect prices which is not in the interests of the market. Preferred option would be to manage the timing of the auctions sequentially, December 19 for the CY2020/21 and once this auction's final results have been confirmed conduct the CY2021/22 auction in Jan 2020, this is still 1 year and 9 months between the CY and the auction date.

Critically, the time between CY and Auction Date from CY2022/23 on for T-1 auction of 7 months is unnecessarily tight and does not take account of commitments participants may have made in the market eg booking of annual gas capacity, commitment for fuel suppliers (can be in excess of 6 months), and statutory obligations in terms of employees. AES recommends bringing forward the T-1 auctions to give at least 12 months between (allowing one month's time period between provisional and final results) the auction date and the CY, for example for the CY2022/23 have the auction in August 2021.

For existing generation, not to clear in a T-1 capacity auction is a clear exit signal, which is actually a stated intent of the auction regime. AES recommends implementing the proposed Grid Code modification made by AES, reference: SPID 030417 – Grid Code Notice Requirement for Plant Closure in I-SEM. Enforcing a 24 or 36 month grid code obligation on plant for notice of closure is clearly not compatible with a T-1 CRM auction process.

'Under the Grid Code, a generator is obligated to give 36 months' notice of its intent to exit if greater than 50MW installed capacity and 24 months' notice if less than 50MW (Clause PC6.1.6, "the Clause"). It is our view that this Clause needs to be removed ahead of the first CRM auction for the following reasons:

1. This Clause is incompatible with the I-SEM design and the new Capacity Remuneration Mechanism (CRM). In I-SEM, the intention of the CRM (an auction mechanism) is that it will create an efficient exit and entry signal for participants in future years. This along with bonding arrangements for future delivery of capacity ensures that adequate capacity levels are maintained by remunerating required capacity. If a unit is nevertheless needed due to a requirement for the ancillary services it provides then the DS3 revenue stream should be set at an adequate level to encourage a unit to remain. Under I-SEM accordingly, capacity that is not contracted in the CRM or DS3 is to exit. This fundamental overarching purpose of I-SEM would be undermined if the Clause was to remain. (There was not an issue with the Clause in SEM given the regulated nature of the existing Capacity Payment Mechanism (which does not place firm commitment obligations on future new entrants to the market.)). The Clause is therefore no longer required.

2. Requiring three years' notice and thereby obligating a unit to remain in the market for 3 years before closure when it did not clear in the CRM auction, or secure sufficient revenues through DS3, is entirely unjustified and wholly inappropriate and would distort market outcomes. Any commercial requirement that the TSO may have for notice of closure is not a matter that should be addressed in the Grid Code which is a technical rule set for generators connected to the network, and these should be addressed through the CRM and DS3 contracts. However, unless removed, this Clause would have the effect of a commercial commitment given the new CRM design.

In conclusion, Clause PC6.1.6 is no longer required in the Grid Code as a) the design of the CRM will give the necessary commitment to the TSO for future capacity requirements; b) having to give notice of exit will inhibit the entry/exit signals from the CRM in I-SEM if it remains; and c) any requirement for DS3 services should be met through the DS3 regime and if a unit is not sufficiently remunerated through this, then it needs to be able to exit the market.'

## **ADDITIONAL**

AES assert, that it is critical, that alignment should exist between the timing of the first T-4 Capacity Auction and the proposed Volume Capped Procurement for DS3 system services. The Volume Capped Procurement for DS3 system services seeks to incentivise the introduction of new units into the market that can provide 'high availability' reserve capacity (FFR, POR, SOR, Etc) which is anticipated to be in operation before the delivery year of the first T-4 Capacity Auction commences. If the T-4 Capacity Auction is held in advance of any Volume Capped Procurement contracts being awarded, then the de-rated capacity associated with the new 'high availability' units will not be accounted for in the capacity stack and the risk exists that not only would the T-4 Capacity auction over procure capacity for a single year but could lock in a 10-year capacity contract for additional new inflexible generation that is not necessary. Note, an assumption is made that new high availability units would seek to secure a DS3 contract before securing a capacity contract as the DS3 revenue is may account for 50% or more of revenue. Additionally, the DS3 procurement sends signals into the capacity market indicating what kind of generation is required, i.e. rewarding flexibility through tariffs for fast response reserve services. If these signals are not in place in advance of the T-4 Capacity auction then potential new generation is unlikely to meet the needs of the evolving system, as no incentive to optimise the provision of system services will have been factored into their capacity offer. These concerns also exist for the Interim T-1 Capacity auctions but to a lesser extent due to the reduced likelihood of new large-scale generation being capable of meeting the delivery dates.

#### 4.7.1

**1) Do you agree with the SEM Committee’s minded to position to keep the parameters (excluding capacity requirement and re-rating factors) for the CY2019/20 capacity auction consistent with the CY2018/19 parameters?**

AES suggest that there should be a new ‘New Capacity Investment Rate Threshold’ to reflect the other technologies. This is to address the fact that New technologies, for example short duration battery storage, could not obtain multiyear capacity contracts as the threshold is too high.

#### 6.4.1

**4) Do you have any response to the storage related questions raised by the TSOs in their paper, which are listed in paragraph 6.3.3 above.**

See appendix questions A to E

**5) Do you have any response to the other energy and run-hour limited generation related questions raised by the TSOs in their paper which are listed in paragraph 6.3.5 above.**

See appendix questions F to G.

#### 7.5.1

**1) Do you agree with our revised proposals for Long Stop Dates and Substantial Financial Completion dates as set out in the section and summarised in Table 4.**

AES agree changes are required to Long Stop and Substantial Financial Completion Dates and propose that the LSD & SFC for multi-year contracts awarded in T-1 auctions should be the same as that proposed for 1-year contracts to gain greater confidence that capacity that is procured in T-1 auctions will be available in time to serve the winter peak of the delivery year.

|         |     | RO Length  |   |
|---------|-----|--|---|
|         |     | 1-year   | Multi-year  |
| Auction | T-4 | SFC 18 month after contract award;<br>LSD one month after CY start | SFC 18 month after contract award; LSD 18 months after CY start |
|         | T-1 | SFC may be less than 18 months after contract award                | SFC may be less than 18 months after contract award             |

|  |  |  |  |
|--|--|--|--|
|  |  | at SEMC discretion; LSD one month after CY start | at SEMC discretion; LSD one month after CY start |
|--|--|--|--|

The 18-month FSC & LSD dates provide a fall back for T-4 auctions where assurance exists that time is available to procure sufficient capacity in subsequent T-1 auctions should the previously contracted projects fail to meet these milestones. For new capacity, whether 1-year or multi-year the same 'hole in the hedge' risk exists, therefore the LSD should apply to help mitigate this risk

AES accept that the T-1 milestone for the SFC can only be set by SEMC once the auction timetable has been finalised however each decision on SFC for each auction must be made at the earliest opportunity and communicated to all participants. As highlighted in response to 3.2.1 the T-2 or T-3 should be set based on an auction timetable that provides sufficient time for a subsequent T-1 auction to be held if necessary.

## **Appendix to be shared with the TSOs**

### **SEM-18-009a: Response to TSO De-Rating Factors Methodology Consultation**

#### **A. Do participants have any comments on the methodology for calculating DRFs for storage units as described in this paper?**

AES argue that the provider should be free to choose their unit size for energy storage (within the bounds of the MEC) rather than it being dictated by the connection agreement/offer MEC, thus the same storage unit could provide a similar contribution to system adequacy whilst still maintaining a higher MEC that would allow the provision of DS3 reserve in excess of the capacity contracted in the RO, reducing the chances of the storage being depleted prior to frequency or scarcity events triggering difference payments. Battery Energy Storage arrays can be expected to suffer degradation over the course of their operational life, this will often be reflected as reduced hours of storage however for short durations systems that are bound to provide a minimum of 20min reserve (TOR2) under DS3 qualification rules then the unit size would have to be reduced instead to manage the remaining MWh, this would also lead to the available unit size being less than the registered MEC.

Given the potential modular nature of a battery storage unit it does not necessarily hold true that increasing a unit's generation capacity decreases its de-rating factor. A 40MW array can have the same level of redundancy as the combination of two separate 20MW arrays, i.e. the same number of inverters and transformers per installed MW. This has been demonstrated with the 10MW Advancion array currently in operation at Kilroot Power Station, where individual nodes and cores have been maintained whilst still declaring the majority of the capacity available. AES propose that for battery storage the derating factor remains constant as unit size increases. However not all systems will have the same level of redundancy and therefore AES supports the application of DECTOL to allow providers to reduce their de-rating factor to a level that reflects the level of redundancy for their system.

#### **B. In the absence of significant historical data, do participants consider it reasonable to apply system-wide outage statistics to new technologies (such as batteries)? If not, please provide alternative with justification.**

AES does not agree with applying the system-wide outage statistics to new technologies where it can be demonstrated from deployment in other markets or from existing data that more appropriate outage rates should be used. For example, batteries are not new to the Irish market, in that AES has successfully been providing a 10MW battery storage unit since Jan 2016 with an annual availability factor of 97%+.

#### **C. Regarding Storage Units with Storage Volume sizes that are not a multiple of 30 minutes: Do participants have any comments on the TSO's preferred methodology for calculating DRFs for such storage unit, i.e. interpolating between storage sizes? What other options do they believe may be more appropriate?**

AES agrees that interpolating is appropriate, however, a refinement is required from a pure linear approach to a curved approach given the relationship between storage levels and the DRF is non-linear. This may add to the complexity of the calculation but the curve is relatively steep, particularly at the lower storage volumes for the DRF to produce material differences.

Many storage technologies will suffer degradation over the course of their operation life which may be reflected as a cumulative reduction in duration year on year in each capacity auction, therefore a system that was commissioned as 1 hour may not be able to provide quite as much as 1 hour in its second year of operation but will provide significantly more than 30min, therefore rounding down should not be considered as an option.

AES would propose that storage under 10MWs should be included, this would be consistent with DSUs and it promotes greater participation.

**D. Should storage units be allowed to apply a DECTOL to their De-Rated Capacity? Please provide arguments to support your response.**

AES agrees that it would be appropriate for storage units to have the opportunity to de-risk potential energy price exposure and therefore be allowed the option to apply DECTOL.

**E. Should specific DRF values be published for units with energy storage volumes of 6.5 hours or greater? Are participants aware of potential projects that might make such a change appropriate?**

AES do not see a rationale to extent the volumes above 6.5 hours or greater, rather the final storage volume of 5 or greater hours would suffice (similar to pumped storage).

**F. Do participants consider that a unit's run-hour limitations (due to emission restrictions or otherwise) should be reflected in the Capacity Market Auction? If so, what mechanisms should be applied. If not, please provide rationale.**

AES does not support this suggestion such an approach would not be a true reflection of the unit's technical ability. No strong argument has been proposed in this consultation in implement the regime as outlined.

**G. Do participants have any comments on the proposed approach for de-rating DSUs with limited Maximum Down Time?**

AES agrees that it is appropriate to apply de-rating to DSUs with limited Maximum Down Time, however, the non-application of difference payments to DSUs continues to be a market distortion and a solution for the interim period should be sought.