EP UK Investments Response to SEM-25-057 CMC Modifications Workshop 45 Consultation Paper

EP UK Investments ('**EPUKI**') welcomes the opportunity to respond to this consultation paper. EPUKI has responded to each of the modifications presented in the consultation paper below.

CMC_16_25 CRM De-Rating Factors for DSUs

EPUKI is supportive of this modification and also, noting the implementation concerns raised by the SEM Committee ('**SEMC**') in its consultation paper, is supportive of the principle of this modification. Furthermore, EPUKI support the extension of this principle to other technology types (i.e., enabling higher De-Rating Factors ('**DRFs**') for Capacity Market units which are capable of or can demonstrate a higher expected availability than the technological average).

Existing DRFs are not reflective of the actual availability of a unit. DRFs are calculated based on average historical availability data of technology types. Due to the small size of the Irish market, this methodology means that a small number of large units being on an extended outage can result in a significant decrease to DRFs for the entire technology factor. This can result in DRFs which are not reflective of the true availability of units.

Inaccurate DRFs disproportionately affects New Capacity as Existing Capacity can reflect lower DRFs in their applications for Unit Specific Price Caps ('**USPCs**'). Lower DRFs erode the investment case for New Capacity and requires projects to bid at higher prices in order to offset the difference in de-rating. Enabling higher and more accurate DRFs would support investment in New Capacity and facilitate lower bid prices in future Capacity Auctions.

EPUKI notes the SEMC's view that wholesale changes to the de-rating methodology would require "*significant policy analysis and development*". It is noted industry has been raising the issue of inaccurate DRFs and a need for a review of the methodology for a number of years. EPUKI is thus requesting information from the SEMC in relation to the aforementioned policy analysis and development. Has the SEMC initiated work in this area? Is the SEMC intending to carry out further engagement with industry on this issue? Do the SEMC have a timeline for this analysis review?

EPUKI also note the potential utilisation of the Increase Tolerance ('**INCTOL**') mechanism which is an existing and approved element of the Capacity Market design. Enabling units to apply the INCTOL would appear to address the issue which this modification seeks to address, without the need for further policy development or approval. The SEMC has previously explored the use of the INCTOL mechanism, before opting not to apply the mechanism based on implementation concerns. EPUKI requests that the SEMC provides an update to industry on any developments with regard to INCTOL. Is this still a pathway which the SEMC is exploring? Has the SEMC identified specific barriers to implementation of the INCTOL mechanism? EPUKI notes that demand-side units can already avail of the Decrease Tolerance ('**DECTOL**') and thus there is a degree of precedence to enabling the use of the INCTOL for demand-side and other technologies.

CMC_17_25 Drawdown of Performance Security

EPUKI is supportive of this modification on the basis that drawdown may not be carried out without prior authorisation from the affected Participant, as well as clarity on around the timelines for initiating drawdown.

CMC_18_25 Introduction of Modular Generator Unit Types and De-Rating Methodology

EPUKI strongly supports this modification proposal. The existing de-rating methodology is overly punitive to modular Combined Cycle Generator Units ('**CCGTs**') due to the fact that DRFs reduce with the size of a unit. This means that if an open-cycle generator seeks to add a combined-cycle component (increasing the overall capacity and significantly reducing emissions output), its DRF will be significantly reduced. This effectively removes any incentive for units to add combined cycle capabilities despite the clear advantages that this would provide.

The addition of closed components would also support the alleviation of run-hour limitations for open-cycle gas units in Northern Ireland. Events in recent weeks have shown the impact that these restrictions can have on Security of Supply, particularly on a heavily constrained network such as in Northern Ireland. Therefore, supporting the addition of closed components and consequently, a removal of these limits would be highly positive from a Security of Supply perspective, and would represent an optimisation of existing generation in the Single Electricity Market ('**SEM**').

It is further noted that the methodology proposed within the modification is similar to the methodology currently applied to aggregated generation, whereby the unit's total de-rated capacity is calculated by summating the individually de-rated components of the unit, rather than de-rating the total. This means that this change would not be unprecedented, nor would it be inconsistent with existing de-rating methodology in the Capacity Market.

This response will now address individual points raised in the Capacity Workshop.

<u>Implementation of Modification</u>

It is noted that some Participants expressed concern on the difficulty of implementing this modification from a Market Operator and System Operator perspective. EPUKI does not agree with this position. As noted above, the calculation for de-rated capacity as proposed in this modification is very similar to the existing calculation applied to Aggregated Generator Units. Thus, there would be no need for the Market Operator to develop new or significantly different algebra or systems to implement this change.

Furthermore, the modification is explicitly only applicable to the calculation of de-rated capacity for modular units. Once the de-rated capacity of the unit is calculated, the treatment of these units would be the exact same as it currently is. Thus, there would be no requirement for the Market Operator to make changes to other systems, nor should there be any impact on the System Operators.

The Capacity Workshop report states that the proposal could "*pose complications*" for the System Operator with regard to the treatment of '*single point of failure*' and '*Annual Run Hour Limits / CO2 Verification*'. EPUKI wishes to highlight that the calculation of de-rated capacity should not have any impact on either of the above issues, and that the modification does not propose any changes to treatment of run-hour limits or verification processes. These complications are largely unfounded and have not been explained in the context of the modification. EPUKI requests that, in the absence of further rationale clearly linking this modification to either of the above issues, that these concerns are dismissed when the Regulatory Authorities are considering this modification.

Single Point of Failure

A participant stated that this modification would be inappropriate given that a modular unit could still be subject to a single point of failure and thus would not necessarily be more reliable. EPUKI considers this to be incorrect and an over-simplification. While all generators with a single connection point will have a single point of failure, the purpose of this modification is to apply a separate methodology for modular generator unit compared to a non-modular unit type. The connection point is typically the most reliable element of a generator set-up with very high availability and is seldom the cause for a unit becoming unavailable. To consider only the availability of the connection point and ignore everything behind-the-meter including the reliability of the generator technology itself would be irrational and inconsistent with existing de-rating methodology.

Additionally, it is not always true that a modular CCGT would be subject to a single connection point. For Ballylumford there are three individual units, two gas turbines and a steam turbine. Each of these units have separate connection points, with individual transformers and substation bays. Thus, while EPUKI remains of the view that a single connection point should not reduce a unit's de-rated capacity, there can also be cases where a modular unit has separate connection point making the concerns around a single connection point invalid.

When considering a CCGT which can operate in modular mode (i.e., the open-cycle component can operate independently) and a non-modular CCGT, there are far less points at which a single event can cause complete failure. For example, in a non-modular CCGT, any issues on the closed component would result in the complete unavailability of the unit.

Examples of this include cases where the open-cycle turbine and closed-cycle turbine are mounted on a single shaft with a shared generator. This means that any issue with the generator or any physical damage on the shaft would impact the availability of both turbines. Alternatively, where a unit lacks a bypass stack, it is not possible to discharge hot exhaust gases without sending them through the closed component. Without the cooling effect of the recovery cycle, this will damage the closed component as a result of overheating. These arrangements mean that non-modular CCGT types have significantly more single points of failure than modular unit types.

For a modular unit, if the closed component is unavailable, the open-cycle component can still operate and contribute to Security of Supply. This demonstrates two key principles:

1. Modular CCGT units are inherently more reliable than non-modular CCGT units. This greater reliability should be reflected in higher DRFs for modular unit types.

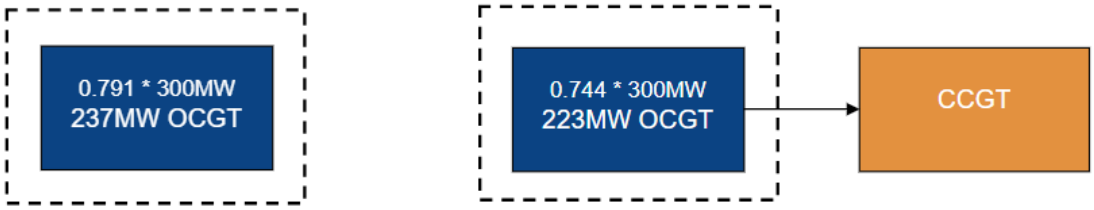
2. The addition of closed component capacity to an open-cycle generator which can operate, and export independently should not result in a DRF reduction for the open-cycle generator. Under existing rules, the addition of the closed component would result in a lower DFRF being applied to the open-cycle generator. This is not rational given that the addition of the closed component does not affect the availability or reliability of the open-cycle generator.

While EPUKI recognises the complexity of power stations and the potential for failure, the fundamental differences in reliability between a modular and a non-modular unit should not be ignored in the de-rating methodology.

Ballylumford has been run in open-cycle only mode for a number of days in October in order to facilitate maintenance work on the steam turbine. Previously these units were operated in open-cycle only mode in the aftermath of Storm Darragh when the stack at Ballylumford was damaged, preventing the operation of combined cycle generation. More generally, issues and maintenance on steam turbines have historically contributed to outages of CCGT units across the island. If these units were modular, this would not be the case as the units could continue to operate in open-cycle mode while issues were resolved, and/or maintenance carried out. These examples demonstrate the additional reliability and flexibility offered by modular CCGT units compared to traditional CCGTs which can operate in combined mode only.

Contribution of Steam Turbine to Total De-Rating Factors

In the Capacity Workshop, EPUKI expressed concern that the current de-rating methodology meant that an open-cycle turbine which adds a closed component will receive a lower DRF than if the same unit did not add the closed component (despite this addition not affecting open-cycle turbine reliability). This issue is illustrated below:



An OCGT unit would "lose" 14MW of de-rated capacity when its output is used to feed a separate CCGT component. (Source: T-4 2029/2030 Parameters).

At the workshop, the System Operators expressed the view that this assumption is incorrect and that any changes to the total de-rating of a combined unit, are the result of the DRF being applied to the CCGT component only. EPUKI believes that this view is incorrect, and it is not consistent with existing de-rating methodology (which would apply a single factor to the entirety of a unit). It is not possible to attribute a lower DRF to the combined cycle component of a CCGT as the total capacity of a unit is de-rated by a single DRF.

Impact on Other Codes

The System Operators expressed concern at the Workshop in relation to the potential impact of this modification on other codes and markets "*such as the Grid Code, the Trading and Settlement Code, and the Balancing Market*". EPUKI strongly refutes the position that this modification could result in any impact to other Codes, or to other elements of the Capacity Market.

The modification proposal, and legal drafting, is explicit in that it will apply only in relation to the calculation of de-rated capacity. The only change arising as a result of this modification is the number calculated in accordance with Section E.8 of the Capacity Market Code for a small subset of units. It is not clear how this could result in any impact on other Codes or markets.

EPUKI wishes to reiterate that modular unit types already exist and operate within the SEM. This modification merely proposes to amend the de-rated capacity associated with such units in the Capacity Market. It is therefore incorrect to suggest that this modification would have any impact on the Grid Code, Balancing Market, or any operational arrangements within the market. It is similarly incorrect to suggest that any changes to the above Codes or processes would be required to enable or facilitate this modification.

Annual Run Hour Limits and C02 Limits

The System Operators expressed that there were "*outstanding questions around Annual Run Hour Limits and C02 Limits"*. EPUKI disagrees that there are any outstanding questions around the above issues. Modular units already participate in the Capacity Market, and it is unclear why the application of run hour limits and C02 limits should differ for such units when compared to any other technology type. This modification would only change the calculation of de-rated capacity for modular units and thus would have no interaction at all with run-hour limits or C02 limits.

Nevertheless, the addition of a closed component to an open-cycle turbine is more likely to alleviate any potential issues with run-hour limits or C02 limits. It would therefore appear beneficial to encourage such developments, which is an objective of this modification. Although this point aside, EPUKI wishes to reiterate the point that this modification itself would have no bearing on run-hour limits or C02 limits, despite the concerns expressed by the System Operators.

Interaction with Multi-Year Capacity Delivery

One participant queried how this modification would work in the context of delivery across multiple Capacity Years / Auctions. EPUKI is satisfied that this modification could apply consistently with existing rules around multi-tranche delivery.

It is understood that under the existing rules, where a tranche of New Capacity is added to a separate existing tranche, (consisting of either Existing Capacity or New Capacity awarded in an earlier Capacity Auction), the de-rating calculation treats this no different to it would had the tranches delivered in the same year (i.e., the combined volume is subject to a single DRF to calculate the de-rated capacity).

This would not need to change to facilitate the proposed modification, the treatment would be the same only with the proposed amendment to the equation used to calculate the combined de-rated capacity. It is therefore envisioned that this modification would be compatible with both capacity delivered in a single tranche, and with incremental capacity. It does not appear that any further amendments or Code modifications would be required to facilitate this.

Alignment with Capacity Market Code Objectives

EPUKI believes that this modification proposal is strongly aligned with the Capacity Market Code objectives as set out in Section A.1.2. Specifically, this modification promotes the short-term and long-term interests of consumers of electricity with respect to price, quality, reliability and security of supply of electricity. This modification will encourage the development of modular generation boasting a number of benefits over non-modular forms of generation.

- Flexibility: a modular CCGT has the ability to operate in combined cycle mode or open cycle mode. This means that where the System Operator requires flexible thermal generation to start-up quickly and fill-in for intermittent generation, the unit can benefit from much quicker start-up times than combined-only generation units.

- Emissions: alternatively, where the System Operator requires modular units to run for longer periods, (due to sustained periods of low wind and solar, or shortages on the system), a modular CCGT can operate in closed-cycle mode providing reduced emissions and improved efficiency.

- Cost: this modification would incentivise the optimisation of Existing Capacity (by supporting the addition of modular capabilities), which is likely to be more cost-effective than investing in new generation to fulfil the same role. Additionally, this modification would mean that the de-rated capacity of a modular unit would be higher than it is currently (reflecting the improved reliability of the modular unit). This increase would offset the procurement of an equal volume of capacity in future Capacity Auctions.

- Reliability: as noted above, modular CCGT units provide greater reliability than non-modular units. While the modification would not change the actual contribution of these units from a reliability perspective (given that they already exist), it would reflect this increased reliability in the calculation of de-rated capacity and consequently incentivise the development of more reliable units.