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CUSC Alternative Form – Non Charging

CMP446 Alternative Request 1:

‘Export Capacity’ instead of ‘Registered Capacity’

Overview: As per the Original, but using ‘Export Capacity’ rather than the ‘Registered Capacity’ in relation to measuring the 5MW threshold.

Proposer: Garth Graham SSE Generation

I/We confirm that this Alternative Request proposes to modify the non - charging section of the CUSC only



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What is the proposed alternative solution?

During the first three Workgroup meetings there was an important and detailed discussion around item (h) of the Terms of Reference:

“Consider what the MW capacity relates to: for example, export capacity or installed capacity or developer capacity?”

At the third Workgroup meeting the Proposer confirmed that the Original proposal will be based on the project’s ‘Registered Capacity’ as defined in the Distribution Code.

However, a majority of the Workgroup members were of the view, at that time, that a more appropriate definition, of the 5MW threshold, would be one based on what network capacity would actually be utilised, by the project, as it would be this that could necessitate a Transmission Impact Assessment.

The table below illustrates the difference between the Original definition (Registered Capacity, shown as ‘Installed capacity’) and this Alternative definition (shown as ‘Export capacity’).

| Category | Example Scenarios | Existing | | New | | TIA Required? | | Outcome check |
|--|--|--------------------|-----------------|--------------------|-----------------|--------------------|-----------------|---------------|
| | | Installed Capacity | Export Capacity | Installed Capacity | Export Capacity | Installed capacity | Export capacity | |
| A new generation connection | 1 New generation connection with 0MW export capacity | N/A | N/A | 4MW | 0MW* | No | No | Same |
| | 2 New generation connection with 6MW installed capacity and 0 MW export capacity | N/A | N/A | 6MW | 0MW* | Yes | No | Different |
| Changes to an existing connection with 0 MW export and installed capacity below the 5MW threshold | 3 Existing connection with 2MW installed capacity increasing to 4MW | 2MW | 0MW* | 4MW | 0MW* | No | No | Same |
| | 4 Existing connection with 2MW installed capacity increasing to 6MW | 2MW | 0MW* | 6MW | 0MW* | Yes | No | Different |
| Changes to an existing connection with 0 MW export capacity and installed capacity above the 5MW | 5 Existing connection with 6MW installed capacity increasing to 12MW | 6MW | 0MW* | 12MW | 0MW* | Yes | No | Different |

NOTE: * An ENA Engineering Recommendation G100 (EREC G100) Export Limiting Scheme will be installed to limit the export from customer’s site to 0 MW.

Assumptions:

The term “existing connection” means sites which are already energised or are have a contracted DNO connection offer but not yet energised

All of the scenarios listed assume that there are no fault level issues at GSP, where fault level issues are known the connection cannot be energised until such time as rectified

All of the scenarios listed also apply to existing demand connections seeking to add generation

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| Category | Example Scenarios | Existing | | New | | TIA Required? | | Outcome check | |
|---|--|--------------------|-----------------|--------------------|-----------------|--------------------|-----------------|---------------|--|
| | | Installed Capacity | Export Capacity | Installed Capacity | Export Capacity | Installed capacity | Export capacity | | |
| A new generation connection | 1 New generation connection with 4MW installed capacity and 4MW export capacity | N/A | N/A | 4MW | 4MW | No | No | Same | |
| | 2 New generation connection with 6MW installed capacity and 6MW export capacity | N/A | N/A | 6MW | 6MW | Yes | Yes | Same | |
| | 3 New generation connection with 6MW installed capacity but only 3MW export | N/A | N/A | 6MW | 3MW | Yes | No | Different | |
| Changes to an existing connection with both export and installed capacities below the 5MW threshold | 4 Existing connection with 2MW installed capacity and 2MW export capacity increasing to 4MW installed capacity and 4MW export capacity | 2MW | 2MW | 4MW | 4MW | No | No | Same | |
| | 5 Existing connection with 2MW installed capacity and 2MW export capacity increasing to 6MW installed capacity and 6MW export capacity | 2MW | 2MW | 6MW | 6MW | Yes | Yes | Same | |
| | 6 Existing connection with 2MW installed capacity and 2MW export capacity increasing to 6MW installed capacity and 4MW export capacity | 2MW | 2MW | 6MW | 4MW | Yes | No | Different | |
| Changes to an existing connection with both export and installed capacities above the 5MW threshold | 7 Existing connection with 6MW of installed capacity and 6MW of export capacity increasing to 8MW of installed capacity and 8MW of export capacity | 6MW | 6MW | 8MW | 8MW | Yes | Yes | Same | |
| Changes to an existing connection with installed capacity only above the 5MW threshold | 8 Existing connection with 6MW installed capacity with but only 2MW export capacity increasing to 4MW export capacity | 6MW | 2MW | 6MW | 4MW | Yes | No | Different | |
| | 9 Existing connection with 6MW installed capacity with 2MW export increasing installed capacity to 8MW and export capacity to 4MW | 6MW | 2MW | 8MW | 4MW | Yes | No | Different | |
| | 10 Existing connection with 6MW installed capacity with 2MW export, increasing installed capacity to 8MW and export capacity to 6MW | 6MW | 2MW | 8MW | 6MW | Yes | Yes | Same | |
| Changes to an existing connection wanting to reduce capacity | 11 Existing connection with 6MW of installed capacity and 6MW of export capacity reducing to 4MW of installed capacity and 4MW of export capacity | 6MW | 6MW | 4MW | 4MW | No | No | Same | |
| | 12 Existing connection with 6MW of both export and installed capacity reducing export capacity to 4MW with no change to installed capacity | 6MW | 6MW | 6MW | 4MW | No | No | Same | |
| Assumptions: | | | | | | | | | |
| The term "existing connection" means sites which are already energised or are have a contracted DNO connection offer but not yet energised | | | | | | | | | |
| All of the scenarios listed assume that there are no fault level issues at GSP, where fault level issues are known the connection can not be energised until such time as rectified | | | | | | | | | |
| All of the scenarios listed also apply to existing demand connections seeking to add generation | | | | | | | | | |

There is currently a definition contained within the Grid Code that could be adapted for the purposes of this Alternative (noting that there is also a cross reference, within the baseline CUSC¹, to that Grid Code definition):

“Maximum Export Capacity - The maximum continuous Apparent Power expressed in MVA and maximum continuous Active Power expressed in MW which can flow from an Offshore Transmission System connected to a Network Operator's User System, to that User System.”

It may be appropriate to adapt this wording, for the purposes of this Alternative to CMP446 Original, along the following lines:

“Maximum Export Capacity - The maximum continuous Apparent Power expressed in MVA and maximum continuous Active Power expressed in MW which can flow from a power station - Offshore Transmission System connected to a Network Operator's User System, which is connected to the NETS to that User System.”

To aid understanding, the ‘counterfactual’ text, for Registered Capacity (sourced from the Distribution Code) is as follows:

¹ CUSC Section 11 **“Maximum Export Capacity - as defined in the Grid Code and in relation to a particular User, as defined in its Bilateral Connection Agreement;”**

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“The normal full load capacity of a Power Generating Module as declared by the Generator less the MW consumed when producing the same; ie for all Generators, including Customer With Own Generation, this will relate to the maximum level of Active Power deliverable to the DNO’s Distribution System. For Power Generating Modules connected to the DNO’s Distribution System via an inverter, the inverter rating is deemed to be the Power Generating Module’s rating.”

What is the difference between this and the Original Proposal?

As set out in the proposed alternative solution above, it is to use ‘Export Capacity’ rather than ‘Registered Capacity’ with respect to the 5MW threshold measurement.

What is the impact of this change?

| Proposer’s assessment against CUSC Non-Charging Objectives | |
|---|---|
| Relevant Objective | Identified impact |
| (a) The efficient discharge by the Licensee of the obligations imposed on it by the Act and by this licence*; | Positive As per the Original, but by linking it to usage of the NETS this is more a more efficient approach to the discharging (than the Original, or the Baseline). |
| (b) Facilitating effective competition in the generation and supply of electricity, and (so far as consistent therewith) facilitating such competition in the sale, distribution and purchase of electricity; | Positive As per the Original, but by linking it to usage of the NETS this is more a more efficient approach to competition (than the Original, or the Baseline). |
| (c) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency **; and | [Select impact] [Please provide your rationale] |
| (d) Promoting efficiency in the implementation and administration of the CUSC arrangements. | Positive As per the Original, but by linking it to usage of the NETS this is more a more efficient approach to implementation and administration (than the Original, or the Baseline). |

* See Electricity System Operator Licence

**The Electricity Regulation referred to in objective (c) is Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (recast) as it has effect immediately before IP completion day as read with the modifications set out in the SI 2020/1006.



When will this change take place?

Implementation date:

As per the Original.

Implementation approach:

As per the Original.

Acronyms, key terms and reference material

| Acronym / key term | Meaning |
|--------------------|--|
| CUSC | Connection and Use of System Code |
| DNO | Distribution Network Operator |
| MW | Megawatt |
| MVA | Megavolt-Ampere |
| NETS | National Electricity Transmission System |
| SSE | Scottish and Southern Energy |

Reference material:

- 1.