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CUSC Alternative Form – Non Charging

CMP446 WACM1: ‘Export Capacity’ instead of ‘Registered Capacity’ for measuring Threshold

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 Grid 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 (Annex 07) 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 (Original Proposal)	Export Capacity (WACH1)	Installed Capacity (Original Proposal)	Export Capacity (WACH1)	Installed Capacity (Original Proposal)	Export Capacity (WACH1)	
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 threshold	5 Existing connection with 6MW installed capacity increasing to 12MW	6MW	0MW*	12MW	0MW	Yes	No	Different
A new generation connection	6 New generation connection with 4MW installed capacity and 4MW export capacity	N/A	N/A	4MW	4MW	No	No	Same
	7 New generation connection with 6MW installed capacity and 6MW export capacity	N/A	N/A	6MW	6MW	Yes	Yes	Same
	8 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	9 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
	10 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
	11 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
	12 Existing connection with 4MW installed capacity and 4MW export capacity increasing to 6MW installed capacity and 4MW export capacity	4MW	4MW	6MW	4MW	Yes	No	Different
Changes to an existing connection with both export and installed capacities above the 5MW threshold	13 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	14 Existing connection with 6MW installed capacity with 2MW export capacity increasing to 4MW export capacity	6MW	2MW	6MW	4MW	Yes	No	Different
	15 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
	16 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	17 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
	18 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

Table 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 a TIA must take place

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- All of the scenarios listed also apply to existing demand connections seeking to add generation
- Where the installed capacity is greater than the export capacity, export limiting schemes will be installed to limit the export from the customers site.

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:

“Export Capacity – For the purpose of paragraph 6.5.1(f) Export Capacity is the maximum continuous Active Power expressed in MW which is permitted to flow from a Power Station to a Distribution System”

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

“(c) In the case of a **Power Station**, the maximum amount of **Active Power** deliverable by the **Power Station** at the **Grid Entry Point** (or in the case of an **Embedded Power Station** at the **User System Entry Point**), as declared by the **Generator**, expressed in whole MW, or in MW to one decimal place. The maximum **Active Power** deliverable is the maximum amount deliverable simultaneously by the **Power Generating Modules** and/or **Generating Units** and/or **CCGT Modules** and/or **Power Park Modules** less the MW consumed by the **Power Generating Modules** and/or **Generating Units** and/or **CCGT Modules** in producing that **Active Power** and forming part of a **Power Station**.”

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?

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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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.