

Modification proposal:	Connection and Use of System Code (CUSC) CMP298: Updating the Statement of Works process to facilitate aggregated assessment of relevant and collectively relevant embedded generation (CMP298)		
Decision:	The Authority ¹ directs that WACM3 of this modification be made ²		
Target audience:	National Grid Electricity System Owner (NGESO), Parties to the CUSC, the CUSC Panel and other interested parties		
Date of publication:	4 January 2024	Implementation date:	10 working days after Authority decision

Background

The current Statement of Works (SoW) process, used to assess the impacts of distributed generation on the National Electricity Transmission System (NETS), can be inefficient and time-consuming. As the volume of embedded generation³ applications has increased in recent years, an alternative process, generally referred to as Appendix G, has been trialled and refined by Distribution Network Operators (DNOs), National Grid Electricity Transmission (NGET) and National Grid Electricity System Operator (NGESO).

Appendix G is an Appendix to the Bilateral Connection Agreement (BCA) between a DNO and NGESO. Appendix G gives visibility to the DNO, Transmission Owner (TO) and NGESO of available capacity at Grid Supply Points (GSP) and a consolidated view of the level of embedded generation seeking connection at these locations. Currently, the Appendix G process is not standardised, and there are different approaches to it across the industry.

The current process for identifying “relevant”⁴ embedded generation that affects the NETS is set out within the Connections and Use of System Code (CUSC) and consists of two steps: SoW and Project Progression (PP). DNOs are required to make a request for SoW to NGESO in relation to the potential impact of generation connections on the NETS. The DNOs are required to follow this process in order to ascertain whether the connection of embedded generation (<30MW in Scotland and <100MW in England and Wales) will have an impact on the transmission network and the extent of any reinforcement works that may be required. DNOs can choose to proceed straight to the PP stage where they have reasonable certainty that there is a transmission impact. Once the SoW application has been reviewed by NGESO (who progress it with the relevant TO) a letter is provided to the DNO to confirm the outcome of the process. Then, the DNO submits the PP data to NGESO which is used to assess the scale of the impact that the relevant embedded generation will have on the transmission system and is used to determine mitigation options.

¹ References to the “Authority”, “Ofgem”, “we” and “our” are used interchangeably in this document. The Authority refers to GEMA, the Gas and Electricity Markets Authority. The Office of Gas and Electricity Markets (Ofgem) supports GEMA in its day-to-day work. This decision is made by or on behalf of GEMA.

² This document is notice of the reasons for this decision as required by section 49A of the Electricity Act 1989.

³ (also known as distributed generation or distributed energy resources) refers to electricity generation or storage plants connected to a distribution network rather than the transmission network ([What is embedded generation? | ESO \(nationalgrideso.com\)](https://www.nationalgrideso.com/what-is-embedded-generation/)).

⁴Currently, embedded generation triggering reinforcements to the NETS of value >£10,000.

The modification proposal

The CUSC modification CMP298 aims to introduce the process known as Appendix G into the CUSC legal framework, to be known as 'Transmission Impact Assessment' (TIA), thereby clarifying the processes and products that the ESO and DNOs will follow and removing ambiguity in the terminology used. This modification is accompanied by an associated System Operator Transmission Owner Code (STC) change CM080, which seeks to formalise the Appendix G process into the STC framework. The change requires TOs to submit additional information on available capacity at GSPs and also determine the Evaluation of Transmission Impact (ETI⁵) Trigger Criteria⁶ for each GSP, which will in-turn determine if the TIA or the SoW process is required.

In accordance with the transmission licence, Section 8 of the CUSC provides a mechanism for parties to propose changes to better facilitate the achievement of the 'Applicable CUSC Objectives' (the 'ACOs'). The proposals and any alternatives (known as Workgroup Alternative Code Modifications or 'WACMs') are reviewed by industry participants through a consultation process, including workgroups, and the process is overseen by the CUSC Modification Panel (the 'Panel'). All CUSC modification proposals, other than modifications following the self-governance or fast track processes, can only be implemented upon approval by the Authority. CMP298 seeks to introduce the Appendix G process into the CUSC. The intention of the modification is for the process to function as an alternative to the existing SoW process in certain situations in which the current process is not considered fit for purpose, specifically in areas where there is significant embedded generation.

CMP298 proposes to change the existing definition of "relevant" embedded generation, which is currently based on a monetary limit of £10,000. The modification proposes to move to a set capacity size in megawatts (MW).

CMP298 was raised by NGENSO on 27 April 2018. The associated STC modification CM080 was raised on 8 December 2021. We issued a separate decision on CM080 on 4 January 2024.

Original Solution

The modification proposes to introduce a new TIA process (currently referred to as Appendix G) into the CUSC. This creates a framework where information about the capability of the NETS is obtained in advance and shared between the parties through the introduction of two key terms: Planning Limit⁷ (the "cap") and Materiality Trigger⁸ (the "checkpoint"). This framework enables DNOs to make connection offers to distributed generation applicants, within limits, supported by regular data submissions by DNOs to the NGENSO, where the Materiality Trigger is met. As the Planning Limit of GSPs will be

⁵ The ETI shall set the maximum values for the parameters identified in CUSC 4.3.1 to 4.3.4 (the "Trigger Criteria") which will require the Distribution Network Operator to apply for either a Statement of Works or Transmission Impact Assessment in order to connect any single or collectively relevant embedded generation.

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- 4.3.1 Active Power (MW)
- 4.3.2 Apparent Power (MVA)
- 4.3.3 Reactive Power (MVAR)
- 4.3.4 Amperage (KA)

⁷ The maximum power export that the NETS can accommodate (without further reinforcement).

⁸ A checkpoint to monitor progress before the Planning Limit is reached and the safety/security of the NETS is placed at risk.

known to parties (ie TOs, DNOs, NGESO and customers) ahead of time, the impact assessment under the existing SoW process will not need to be performed for each individual application.

Under the Original Solution, NGESO would accept/reject the data submitted by DNOs within five working days. Additionally, the Original Solution introduces new fees for the work that the TIA places on NGESO, with the fees being charged for the creation of TIA (or for a request to increase the Materiality Trigger); and for any re-work needed by the ESO where the data submitted does not meet the agreed requirements.

Alternative Solutions

Based on variations to the Original Solution, three alternative solutions were raised for CMP298:

- WACM1 is as per the Original Solution but DNO updates to Appendix G are deemed to be accepted unless NGESO confirm otherwise within five working days of submission by the DNO. This intends to substitute the NGESO approve/reject process used in the current Appendix G process. Where there are outstanding concerns with the data submitted by the DNO, NGESO shall issue a notification and meet with the DNO within five business days to discuss further to allow the parties to reach a resolution;
- WACM2 is as per Original Solution but it removes the need for a re-work fee that is to be charged by the NGESO to DNOs should the data submitted not meet the requirements of TIA;
- WACM3 is a combination of WACM1 and WACM2 and incorporates all aspects of both alternative solutions.

CUSC Panel⁹ recommendation

At the CUSC Panel meeting on 25 March 2022, the majority of the Panel considered that all of the CMP298 solutions (the Original Solution plus the three alternatives) better facilitated the CUSC objectives. The party voting in favour of the Original Solution, also stated that WACM3 better facilitates objectives of the CUSC than the status quo. The Panel's preferred option was WACM3, and the Panel therefore recommended its approval, citing efficiency gains as the main benefit of introducing the Appendix G into the CUSC. The Panel, in their majority, stated that the requirement on NGESO to approve the data adds an additional administrative step to the process, undermining the intent of the modification, and therefore, preferred WACM1 over the Original Solution which removes that step. The Panel also discussed implementation of WACM2 arguing that the re-work fee charged by NGESO is unjustified and increases the complexity of the process, bringing few benefits to Balancing Services Use of System payers. Ultimately, the Panel recommended WACM3 to be implemented, ie both WACM1 and WACM2. When voting, the Panel considered CUSC objectives (a), (b) and (d) to be better facilitated by the solutions, with a neutral impact on the rest of the objectives.

Similarly, respondents to the Code Administration Consultation voted in favour of all solutions on the grounds of efficiency, with the majority expressing preference for WACM3. Some of the respondents stressed the need for clarity around data requirements and responsibilities at early stages of the implementation process.

⁹ The CUSC Panel is established and constituted from time to time pursuant to and in accordance with section 8 of the CUSC.

Our decision

We have considered the issues raised by the modification proposal and the Final Modification Report (FMR) dated 6 April 2022. We have reviewed and taken into account the responses to the industry consultation(s) on the modification proposal which are attached to the FMR¹⁰. We have concluded that:

- all proposed solutions better facilitate ACOs (a) (b), and (d) than the baseline, with a neutral impact on ACO (c). Overall, implementation of WACM3 will best facilitate the relevant ACOs;
- directing that WACM3 be approved is consistent with our principal objective and statutory duties.

We set out below our assessment against each of the relevant ACOs.

Reasons for our decision

We consider WACM3 would better facilitate ACOs (a), (b) and (d) and have a neutral impact on other applicable objectives.

(a) the efficient discharge by the licensee of the obligations imposed upon it under the Act and by this licence

Workgroup and Panel view

The Panel members unanimously voted that the Original Solution and all the WACMs better facilitate ACO (a). This was explained by efficiency gains in NGESO and DNO discharge of licence obligations as a result of the streamlined process for providing connection offers and connecting distributed generation. The Panel members believed that the process would be improved as a consequence of multiple individual assessments being replaced by aggregated assessments, and therefore be more efficient.

Although all workgroup members agreed that all solutions better facilitate ACO(a), some workgroup participants argued that the approve/reject process introduced under the Original Solution acts against the efficiency objective of the CUSC. This is because it undermines the intent of the modification to streamline and expedite the process as DNO updates to Appendix G will need to be referred to NGESO for approval, adding an extra step to the process which they do not believe to be necessary.

¹⁰ CUSC modification proposals, modification reports and representations can be viewed on NGESO's website at: <https://www.nationalgrideso.com/industry-information/codes/connection-and-use-system-code-cusc/modifications>

Our view

The Original Solution

Under Appendix G (or TIA, once it has been introduced into the CUSC), the SoW process does not need to be triggered for each individual connection application. This is due to the shared access to information on the available capacity of GSPs. Currently, this can only be checked once the SoW and PP processes have been initiated.

The availability of the information on GSP utilisation is dependent on regular DNO data submissions to NGESO by DNOs. DNOs can continue to make offers until Planning Limit of the GSP is reached, without starting the 2-step process¹¹ each time when faced with clustered embedded generation applications, conducting an aggregated assessment instead.

In our view, the modification streamlines the connections process and reduces the time needed by the DNO to provide a connection offer, ultimately facilitating the obligation to provide an offer within 90 days.

WACM1

We believe that codification of the NGESO's obligation to comply with the five working day window to review and reject DNO data, as per the Original Solution, will result in an efficient and transparent process. However, we also believe that removing the need for DNOs to wait for a period of time, potentially exceeding the five working day window for NGESO's approval of the DNO data will prove more beneficial. WACM1 proposed to introduce a dispute process by exception, where NGESO can raise concerns where the DNO has provided inaccurate data and criteria of the TIA have not been met. NGESO will be allowed to trigger this dispute process, having a further five days to engage in bilateral talks with the DNO if needed.

WACM1 better facilitates ACO (a) for the following reasons:

- any errors identified in the initial review, which is to be concluded within five working days, can be rectified by triggering the disputes process by exception. The process is based on bilateral discussions allowing parties to jointly reach a resolution, thus avoiding delays resulting from lack of clear communication and understanding between the parties;
- removing the obligation on DNOs to wait for NGESO's approval of data expedites the process leading to faster connections as it minimises the risk of delays caused by lengthy review of the data submissions.

WACM1 is expected to positively impact the efficient discharge of both DNO and NGESO licence obligations.

¹¹ SoW and PP.

WACM2

We do not believe that the re-work fee charged to DNOs, forming part of the Original Solution is a justified mechanism better facilitating ACO (a) for the following reasons:

- reviewing data submissions by DNOs to facilitate efficient discharge of licensee obligations forms part of NGENSO duties and no additional fee should be charged for providing this service;
- considering the re-work fee will constitute an estimated small cost for BSUoS payers (£65k per annum across all DNOs), it is appropriate for the cost to be socialised. Charging DNOs creates the likelihood of the companies passing the fee on to customers when providing connection quotes. Therefore, we believe the impact on better cost reflectivity remains ambiguous.

WACM3

As we consider that both WACM1 and WACM2 constitute a more efficient solution to the process, we believe combining them will lead to a more efficient discharge of licensee obligations. Therefore, we believe WACM3 better facilitates ACO(a).

(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

Workgroup and Panel view

The Panel members unanimously voted that the Original Solution and all the WACMs better facilitate ACO(b). This is due to standardisation of the processes across networks and areas, and timelier understanding of the transmission impact of embedded generators. The Panel reasoned that this would inform investment decisions and lead to more embedded generators connecting sooner, allowing for increased competition as a result. These views were broadly shared by the Workgroup members.

Our view

The Original Solution

Due to widely available information on GSPs' capacity, customers can make more informed investment decisions and connect, knowing where headroom capacity is available, and no significant reinforcements are needed. There is a signalling function in this modification. Customers will know the capacity of each GSP on Appendix G/TIA ahead of time, as this information will be published by the NGENSO on a monthly basis. This will assist stakeholders to understand where the gaps are (interested parties will still need to engage with DNOs to understand the options).

We believe standardisation of the Appendix G process across regions in GB will make the connections process more transparent to customers, increase investor confidence and result in better decision-making processes and accelerated connections.

WACM1

We believe that codification of the NGESO's obligation to comply with the five working day window to review and reject DNO data and raise any issues via the disputes process by exception, streamlines and simplifies the data review process. It sets expectations with respect to the duration of NGESO review process, contributing to increased transparency of the process. Simultaneously, as lack of compliance with the newly codified TIA process will constitute a breach of CUSC obligations, arrangements under this solution will facilitate holding NGESO to account in the event of a delay or any errors not being picked up within five days following submission by the DNO. This will in turn minimise delays, leading to faster connections, and positively impacting competition.

WACM2

Although we understand the reasoning as to why the party responsible for the need for the re-work fee should bear the associated cost, we believe that the proposed re-work fee would undermine the benefits of a streamlined TIA process and an efficient discharge of DNO and NGESO licence obligations. This is because it adds to bureaucracy and complexity of the process, providing relatively few benefits in exchange. Increased costs to DNOs and a lengthy TIA process might affect timelines, consequently negatively impacting treatment of connections customers. This could hinder competition in the market. Overall, we consider that the re-work fee adds ambiguity and additional administrative costs which diminish the benefit of cost reflectivity.

DNOs should demonstrate due diligence to follow the process correctly and ensure provision of accurate data to minimise the risk of delays in provision of a connection offer to customers.

WACM3

As we consider both WACM1 and WACM2 constitute a more efficient solution to the process, we believe combining them would facilitate effective competition. Therefore, we believe WACM3 better facilitates ACO(b).

'Large' generators

An issue raised in consultation was the impact of CMP298 on 'Large' generation, which will not be captured by this modification as Appendix G applies only to small and medium generators. This specifically affects customers in Scotland, where threshold for 'Large' generation is lower than in other parts of GB. Consequently, it was stated that the new TIA process will not be offered to 'Large' generation customers, negatively impacting competition in the market.

Our view

While we agree that provisions capturing 'Large' generators should be made, we believe this is outside the scope of this modification as this modification intends to formalise the existing Appendix G process which applies to small and medium generators. Therefore, despite not covering 'Large' generators, we believe the modification better facilitates ACO(b) than the current arrangements. Moreover, modification proposal GC0117 is revising the approach to 'Small', 'Medium' and 'Large' generation by unifying thresholds

for new generation across GB. We believe it is more appropriate for GC0117 to consider these inconsistencies across the industry.

(d) promoting efficiency in the implementation and administration of the CUSC arrangements

Workgroup and Panel view

The majority of Panel members considered that the Original Solution, as well as all the WACMs better facilitate ACO (d). The justification used was that it introduced a standardised process into the CUSC. The remaining Panel members deemed the impact of this modifications and its alternative proposals neutral against this objective. The Workgroup members echoed the views of the Panel, with the majority evaluating the Original Solution and WACMs positively and the remaining few considered them neutral against ACO (d). Similarly to other relevant objectives, Workgroup members stated that all solutions were preferred over the baseline.

Introducing the new process for charging the small re-work fee has been deemed inefficient by respondents and eight out of nine Panel members were in favour of removing this additional administrative cost. Therefore, the preference was for progressing WACM1 and WACM2 jointly, as WACM3.

Our view

The Original Solution

The baseline has been deemed inefficient and time-consuming by multiple parties across the industry, particularly in areas with high embedded generation activity. As the CUSC modification CMP298 proposes to reduce the number of steps required to provide an embedded connection offer, we believe this will reduce bureaucracy, administrative costs and promote efficiency in the implementation and administration of the CUSC arrangements.

WACM1

We believe that WACM1 simplifies the process by removing the additional step where the DNO is required to engage with NGESO in each instance of data submission to confirm the requirements of the TIA process have been met. Therefore, this solution better promotes efficiency in implementation of the CUSC arrangements than the baseline.

WACM2

We believe that WACM2 is a more efficient solution as it removes a re-work fee of a relatively low materiality and removes administrative burden to redistribute a relatively small cost, clarifying and simplifying the process codified in the CUSC to the parties to the CUSC.

WACM3

As we consider both WACM1 and WACM2 constitute a more efficient solution to implementation and administration of the CUSC arrangements, we believe combining them would lead to the most optimal solution. Therefore, we believe WACM3 better facilitates ACO(d).

Decision notice

In accordance with Standard Condition C10 of the Transmission Licence, the Authority, hereby directs that WACM3 CMP298: *Updating the Statement of Works process to facilitate aggregated assessment of relevant and collectively relevant embedded generation* be made.

Tessa Hall

Head of Electricity Connections

Signed on behalf of the Authority and authorised for that purpose