

A landscape photograph of a valley with mountains in the background. The sky is filled with dramatic, golden light from a low sun, creating long shadows and highlighting the clouds. In the foreground, several bright, glowing yellow and orange light trails curve across the valley floor, suggesting movement or energy. The overall mood is one of transition and forward momentum.

**Connections strategic change & impact to CUSC  
Meeting #5**

**24th October 2023**

# Agenda

Timing	Subject	Presenter
10:00 - 10:05	Introduction and Welcome	Camille Gilsenan
10:05 – 10:20	Actions Log	Secretariat
10:20 – 10:40	Five Point Plan	Kav Patel
10:40 – 11:00	BESS non-firm product	Will Kirk-Wilson
11:00 – 11:10	CUSC modifications	Joseph Henry
11:10 – 11:15	Connections Reform	Paul Mullen
11:15 – 11:20	Next Steps Recap	Secretariat
11:20 – 11:30	AOB	Camille Gilsenan



# **Introduction & ways of working**

**Camille Gilsenan, ESO**

# Outstanding Actions

ID	Description	Owner	Action	Update	Target Date	Status
004	Non-firm updates	WK/DR	Update sub-group as non-firm solution develops	This topic is an agenda item and the subgroup will be updated as the ESO progresses with the initiative.	5 Sept.	C/F
005	Non-firm and Capacity Market	WK/DR	Speak to DESNZ to confirm that they are aware that the non-firm initiative restricts Users from participating in the CM	Non-firm connection for accelerated storage is no different from the current non-firm connection contacts. On that basis, the ESO position is that that they can participate in CM, however, this is pending DESNZ confirmation.	5 Sept.	C/F
006	Non-firm and Capacity Market	WK/DR	ESO to consider if they need to do more to make it clear that a move to a non-firm product restricts operability in some markets, such as the Capacity Market	ESO has been engaging with DESNZ on this. See above action	5 Sept.	C/F
007	Non-firm – Curtailment information	WK/DR	What information will the rest of market have on the quantum of curtailment behind T boundaries, both ahead of time and real time?	The detailed process for notifying storage has not been developed yet and will be developed ahead of the first storage providers connecting under this initiative ~2026	5 Sept.	C/F
008	Non-firm – Curtailment times	WK/DR	How long is the curtailment to be active– in market timeframes for the products being used by the ESO, such as settlement period(s) in BM?	See above action	5 Sept.	C/F

# Outstanding Actions

ID	Description	Owner	Notes	Update	Target Date	Status
010	Non-firm - process	WK/DR	<p>As more non-firm is connected on the network, how is it decided which gets turned off first? What is the process? How transparent will this be?</p> <p>For example, if there are two non-firm connections at one node – will both be restricted to 50%? Or only one asset 100% restricted? (Is it all or nothing? Or can there be partial?) etc. This needs to be completely transparent.</p> <p>Additional information added post mtg by LH: Will you rotate sites, scale or something else?</p>	Any curtailment will be carried out using LIFO principles (last in, first off)	5 Sept.	C/F
012	Non-firm and TNUoS task force	CG	TNUoS taskforce have non-firm as out of scope however the ESO is trying to encourage it. Reach out to TNUoS taskforce to discuss why it may not be in their scope of work	ESO has discussed this briefly with OFGEM and it's been raised at TNUoS taskforce. More thought needed on this before the appropriate forum for discussion is confirmed.	5 Sept.	C/F
013	Late question – received post meeting from LW: Curtailment - interruptions	WK/DR	On sign-up, a User may agree to be interrupted x times per year. Should more sites subsequently connect, can NGENSO increase the triggers that interrupt me?	The non-firm agreement will detail the list of circuits that storage can be curtailed for. This will not be capped to an amount	5 Sept.	C/F

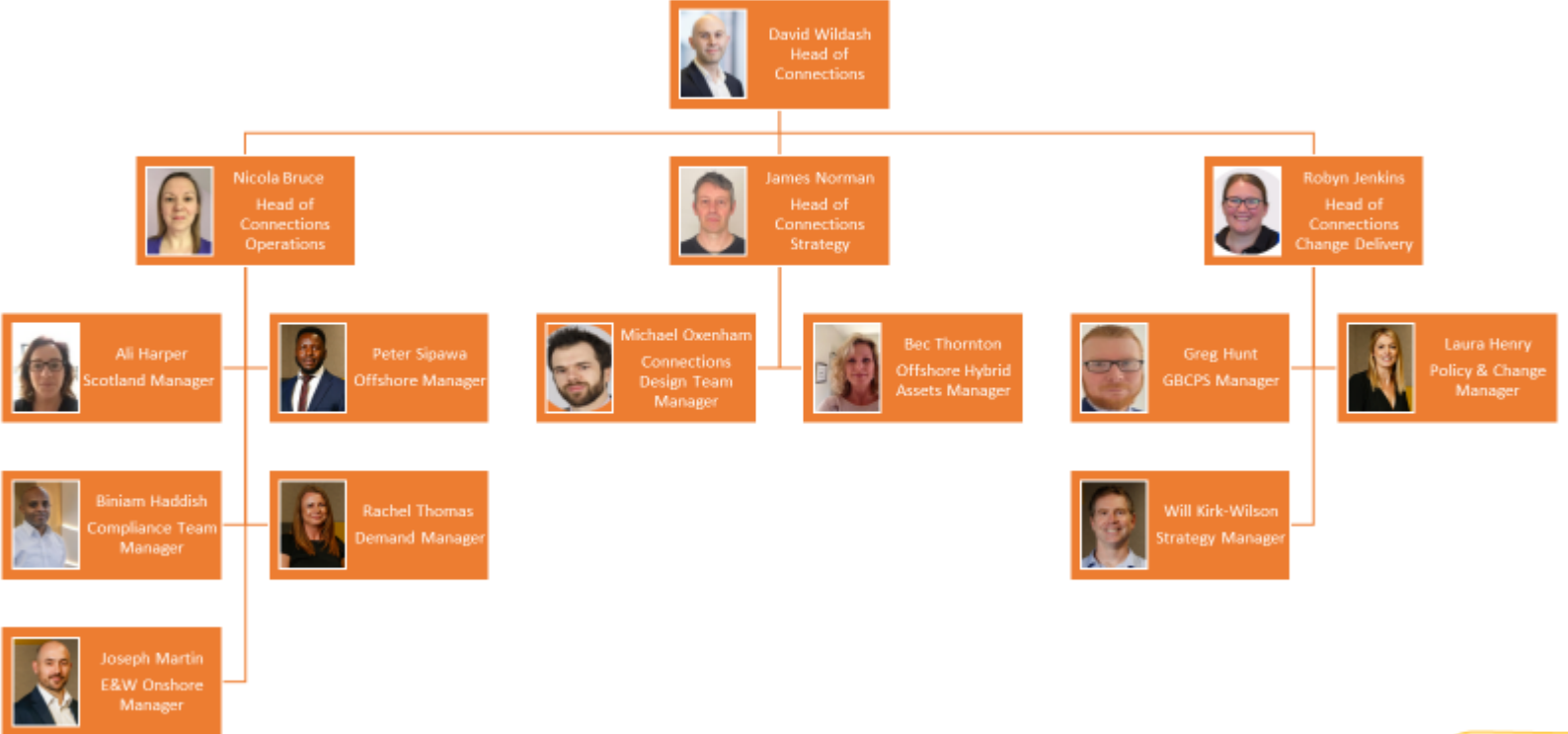
# Outstanding Actions

ID	Description	Owner	Notes	Update	Target Date	Status
014	TEC Amnesty	LH	Confirm the actual TEC amnesty figure achieved against the published expected 8.1GW		26. Sept	C/F
020	Storage modelling	WK/DR	Confirm if Storage 0MW treatment was for network planning or T&T Model	Storage is not treated as 0MW. Storage modelling for network planning is being made more reflective of actual storage behaviour.	26. Sept	C/F
022	Queue Management guidance document	JH	Set up session with QM workgroup members to review guidance document	Progress to be confirmed next week	24. Oct	NEW
024	Non-firm – trade and transfer of TEC	WKW/D R	Does the non-firm process impact the trade and transfer of TEC?	No it doesn't. Accelerated non-firm storage will still have TEC.	24. Oct	NEW
025	Connection applications	LH	To split out applications into new and mod apps		24. Oct	NEW
026	Connections organogram	LH	Provide most recent organogram	Slide attached within this pack	24. Oct	NEW
027	Terms of Reference	JH	Take to CUSC panel for review	CISG ToR is an agenda item for the October CUSC panel	24. Oct	NEW

# Outstanding Actions

ID	Description	Owner	Notes	Update	Target Date	Status
028	Constraint notifications	WKW/A Q	Review feedback received on constraint notifications from subgroup as a consideration throughout the development of the BESS non-firm product	The ESO has heard the concerns about notifications and this will be factored into the development of the notification process. See action 7.	24. Oct	NEW
029	Constraint notifications	ESO	Investigate if the ESO does or should publish constraints in real time.		24. Oct	NEW

# Connections Org Chart





# 5 Point Plan

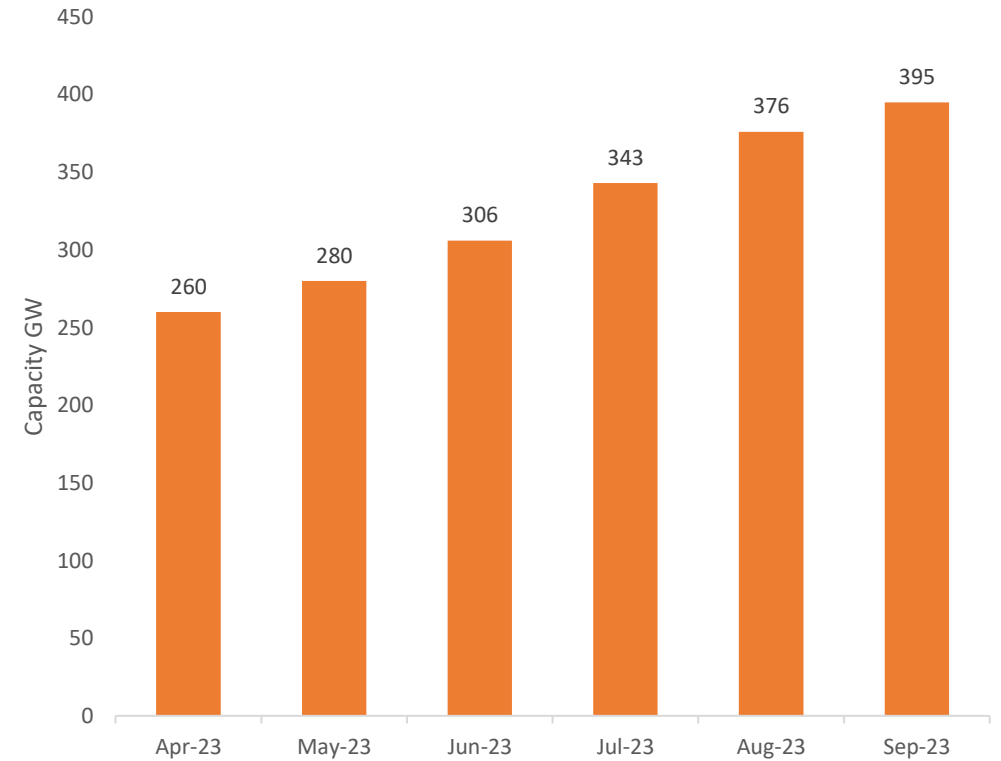
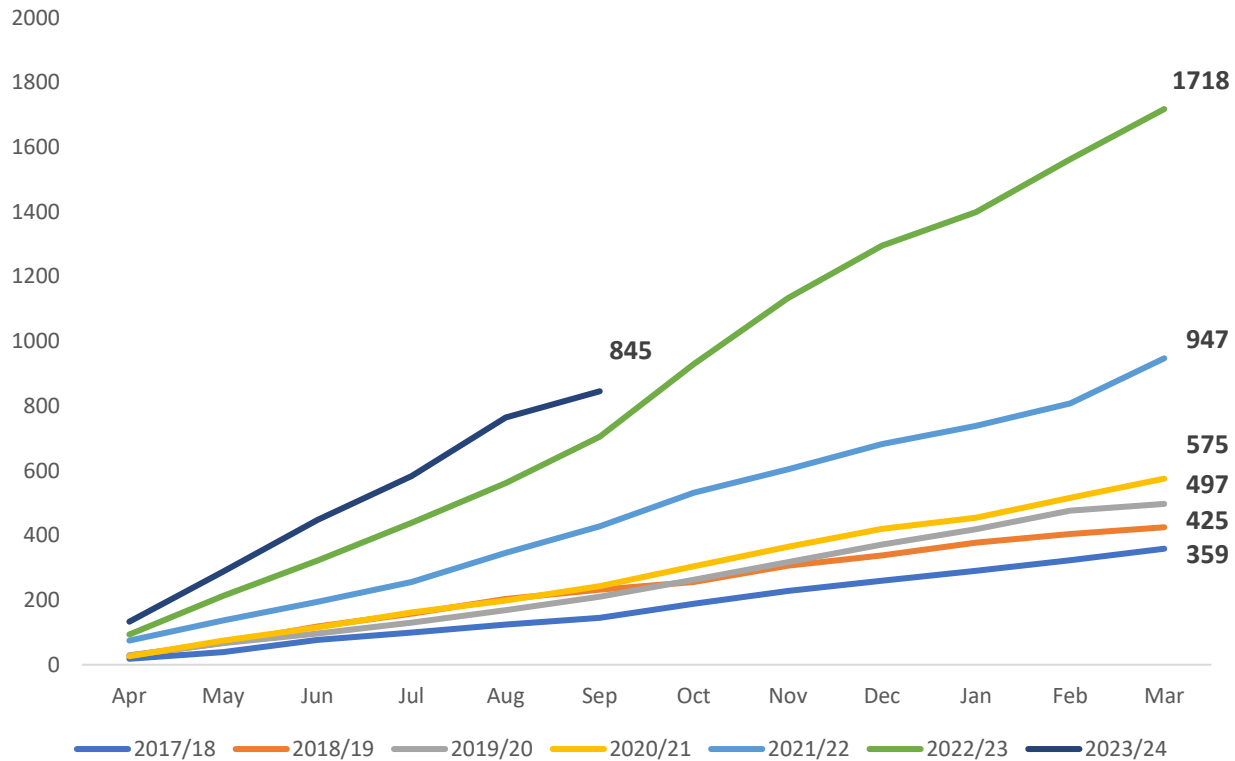


# Connection Applications

The number of licenced connection applications has increased over the last 5 years, with a marked increase over the last 2 years. This increase is driven mainly by new Offshore Wind and Battery Energy Storage applications.

The increase in applications has in turn increased the contracted background and connection queue to **404GW**, which is an increase of over **100GW** in the last 5 months.

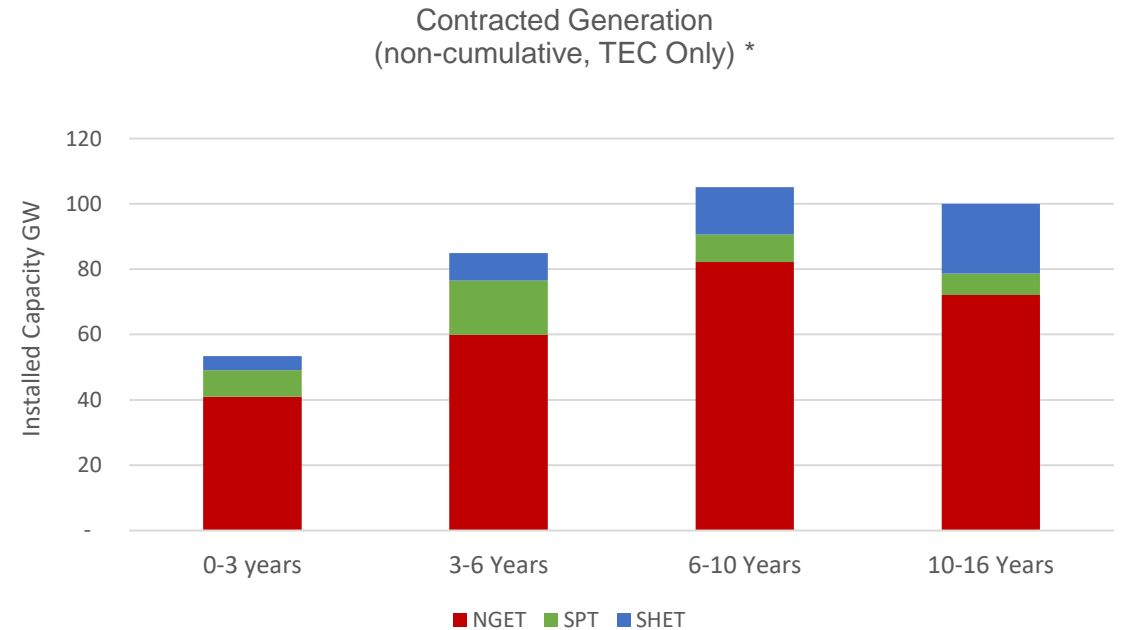
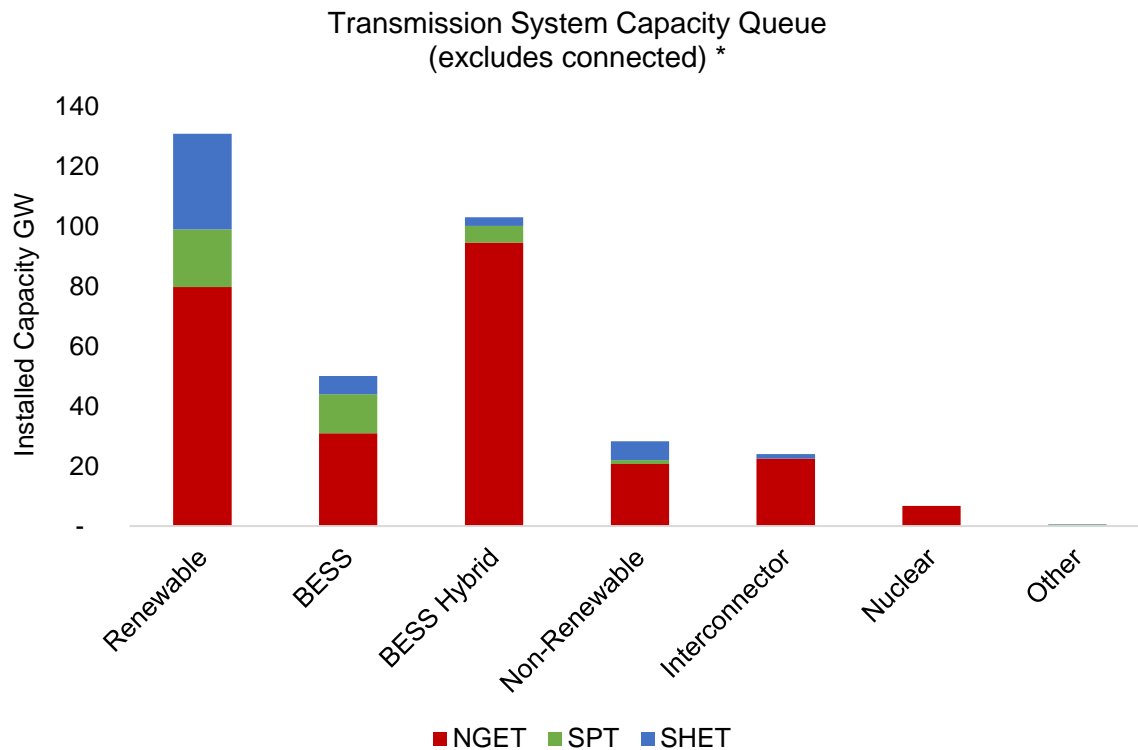
Licensed Applications Received



# Connections Queue

The contracted background is still growing, with more applications offsetting a falling acceptance rate.

Over **404GW** of generation projects are currently seeking to connect to the electricity transmission system, yet our data shows that up to **70%** of those projects may never be built. There is **113GW** currently in the distribution queue.



# Our 5 Point Plan

Our 5-Point Plan is a set of Tactical Initiatives ahead of the wider connections reform

1. TEC Amnesty
2. Construction Planning Assumptions Review
3. Treatment of Storage
4. Queue Management
5. Non-firm Offer Development



## TEC Amnesty

- First TEC Amnesty since 2013
- We received a total of **8.1GW** of applications
- Ofgem published a letter of comfort on 15th August confirming that the costs could be re-couped through TNUoS
- Final Step – we need to ensure customers still want to be a part of the amnesty
- Final figure for TEC Amnesty is 4.1 GW (4GW of capacity has dropped out)
- Current cost of the project is £32 Million (subject to changed based on Final Sums from TO's).
- Starting to terminate agreements for those that have confirmed



# CPA Review and Treatment of Storage

## Construction Planning Assumptions Review (CPA)

We are changing the assumptions that most projects in the queue will connect to reflect a 30-40% connection rate

## Treatment of Storage (BESS)

We are revising the way storage connections are modelled using insight resulting of a better understanding of its behavior. These changes will allow storage to connect quicker and support unlocking more capacity to connect others.

## Transmission Works Review (TWR)

Together the above changes are being reflected in the Transmission works review where we hope to improve connection dates and reduce works.

In England and Wales the two step offer process has been introduced to allow the TWR to be completed alongside the usual connections process

The existing connections process is still in operation in Scotland.



# Queue Management

- There is currently no mechanism in the CUSC to terminate projects that are not progressing.
- CMP 376 is the CUSC Mod which would give the ESO powers to terminate agreements that are not progressing
- Final work group report was submitted to Ofgem on the 7th June
- Awaiting Ofgem's decision – 10<sup>th</sup> November
- Currently developing a substantial guidance document and working with TO's on implementation



# Non-firm Offer Development

## Context

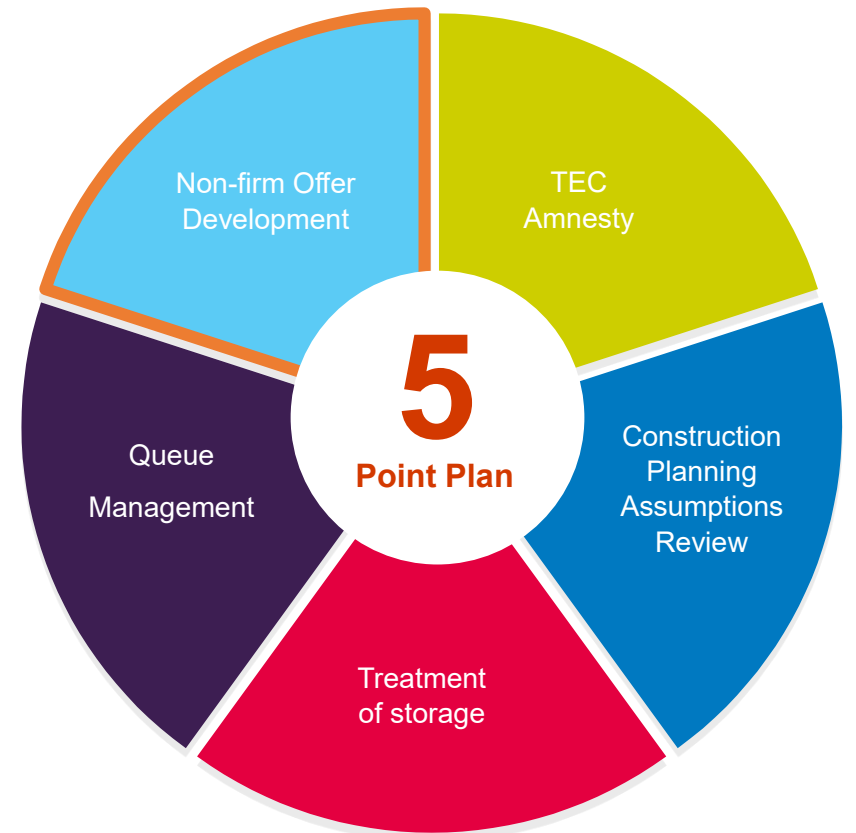
We published an [update](#) in June. It allows storage to connect once non essential enabling works are completed on a non-firm (customer choice) basis.

## What has happened since then

We have been working with the TOs and the DNOs (through the ENA's Strategic Connections Group) to develop the detail that underpins the policy. In addition we have analysed our [EOI](#) to understand the appetite for an accelerated non firm connection date for storage.

## Update

We will imminently launch tranche 1. This will be for ~20 customers (~10GW). Sites have been selected by NGET on suitability criteria. Customers will receive offers shortly and will have 3 months to sign. During that time, they will need to assess the 'firmness' of their connection. Tranche 1 is for E&W transmission. Distributed connected storage is being progressed together with the ENA through their [three point plan](#) (point 2 – changing how transmission and distribution coordinate connections).







**BESS Non Firm product**

**Will Kirk-Wilson, ESO**

## Network data guidance note

- To help potential connectees understand the level of curtailment they will face, we will be directing them to publicly available data and supplying site specific data.
- This is the *current policy direction but is still subject to discussions*.
- **GB model** – the demand, generation and network data comes from the ETYS, FES and TEC register.
- **Site specific** – *data will include*:
  - Outage data. This will be similar to existing non-firm data provisions.
  - Queue position data - TEC register data at time of connection.

Area	Description	Document Name	Location
Network	Network data (parameters, schematics and power flows)	Appendix A Appendix B Appendix C	<a href="https://www.nationalgrideso.com/research-and-publications/electricity-ten-year-statement-etys/etys-2022-documents-and-appendices">https://www.nationalgrideso.com/research-and-publications/electricity-ten-year-statement-etys/etys-2022-documents-and-appendices</a>
Generation	Generation background	<u>TEC register</u> Interconnector register Regional Breakdown of FES data (workbook)	<a href="https://data.nationalgrideso.com/connection-registers/transmission-entry-capacity-tec-register">https://data.nationalgrideso.com/connection-registers/transmission-entry-capacity-tec-register</a> <a href="https://www.nationalgrideso.com/data-portal/interconnector-register">https://www.nationalgrideso.com/data-portal/interconnector-register</a> <a href="https://www.nationalgrideso.com/future-energy/future-energy-scenarios/documents">https://www.nationalgrideso.com/future-energy/future-energy-scenarios/documents</a>
Demand	Scenarios of historic and future demand per Grid Supply Point	Regional Breakdown of FES data (workbook)	<a href="https://www.nationalgrideso.com/future-energy/future-energy-scenarios/documents">https://www.nationalgrideso.com/future-energy/future-energy-scenarios/documents</a>
Outage	List of relevant (to the connectee) asset outages	n/a	This site specific data will be shared separately with the relevant parties.
Queue Position	<u>Queue position</u>	TEC register at the time when the relevant party entered the queue.	This site specific data will be shared separately with the relevant parties.



## **CUSC modifications**

**Joseph Henry, ESO**

# Connections and CUSC Modifications - Recap



**At CISG subgroups 1 and 4, we discussed the need for CUSC modifications to support BESS Non-Firm**



## **5 Point Plan:**

**At Subgroup 4, the ESO confirmed its opinion that a CUSC modification was not needed to support Non-Firm as the ESO will operate within a refinement in the application of the policy**



## **5 Point Plan:**

**We are awaiting the decision of Ofgem on CMP376 (queue management).**

**Any other CUSC modifications identified will be raised at CISG**



## **Connections Reform:**

**Connections Reform mods will be discussed with Industry via Connections Delivery Governance Forums. These have previously been discussed at CUSC Panel and CISG subgroup.**

# Connections Reform



## Next Steps

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Considering additional feedback received at Connections Seminar (16 October 2023) prior to making final recommendations in November 2023.



### Email us

[Box.connectionsreform@nationalgrideso.com](mailto:Box.connectionsreform@nationalgrideso.com)

## Next steps

- Focus topic for next meeting
- Proposed date of next meeting is 14. November
- AOB

