



**Transmission Charging  
Methodologies Forum and  
CUSC Issues Steering  
Group**

**Meeting 139 - 5 October 2023**

# Agenda

1	Introduction, meeting objectives and review of previous actions <b>Claire Huxley - ESO</b>	10:30 - 10:35
2	Connections and 5 Point Plan update <b>Alex Curtis - ESO</b>	10:35 - 10:45
3	TNUoS Task Force verbal update <b>Christian Parsons - ESO</b>	10:45 - 10:55
4	CISG Connection subgroup verbal update <b>Alison Price - ESO</b>	10:55 - 11:00
5	GB Connection Reforms update <b>Dovydas Dyson - ESO</b>	11:00 - 11:15
6	Comfort break	11:15 - 11:20
7	10year TNUoS projection update <b>Nick Everitt - ESO</b>	11:20 - 11:35
8	TCMF Terms of Reference update <b>Rachel McLeod - ESO</b>	11:35 - 11:40
9	Code Administrator update <b>Milly Lewis - Code Administrator ESO</b>	11:40 - 10:45
10	AOB and Meeting Close <b>Claire Huxley - ESO</b>	11:45 - 12:00

# TCMF Objective and Expectations

## Objective

Develop ideas, understand impacts to industry and modification content discussion, related to the Charging and Connection matters.

Anyone can bring an agenda item (not just the ESO!)

## Expectations

Explain acronyms and context of the update or change

Be respectful of each other's opinions and polite when providing feedback and asking questions

Contribute to the discussion

Language and Conduct to be consistent with the values of equality and diversity

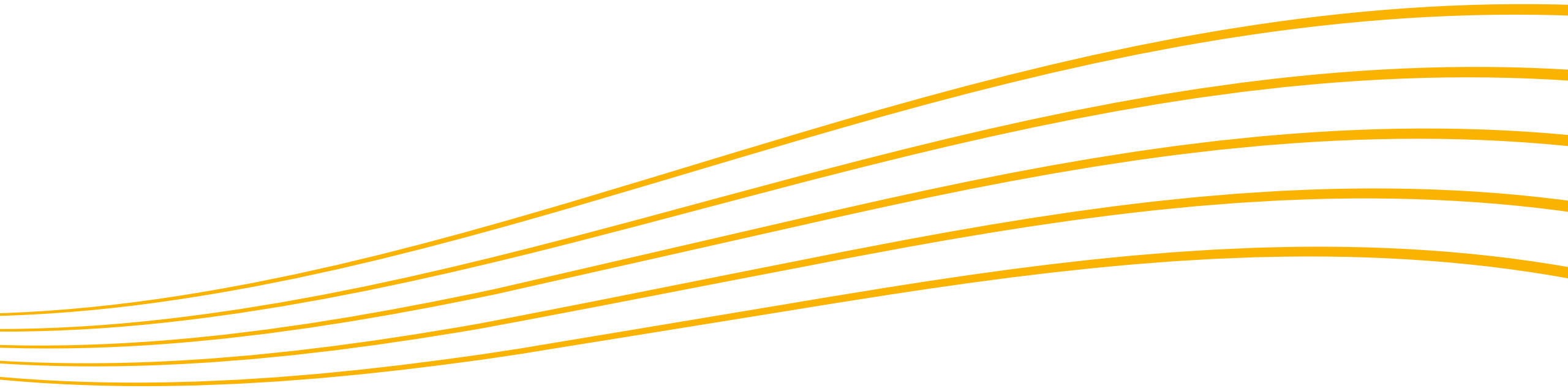
Keep to agreed scope

## Review of previous actions

ID	Month	Description	Owner	Notes	Target Date	Status
23-6	July 23	Process deep dive in relation to calculating TNUoS Expansion Constants data.	Nick Everitt	Nick Sillito covered this during the CMP315/CMP375 agenda item at the September TCMF.	07/09/2023	Closed
23-7	July 23	Update on CMP315/375 in relation to TNUoS Expansion Constants data	Claire Huxley		03/09/2023	Closed

# Connections and 5 Point Plan update

Alex Curtis - ESO

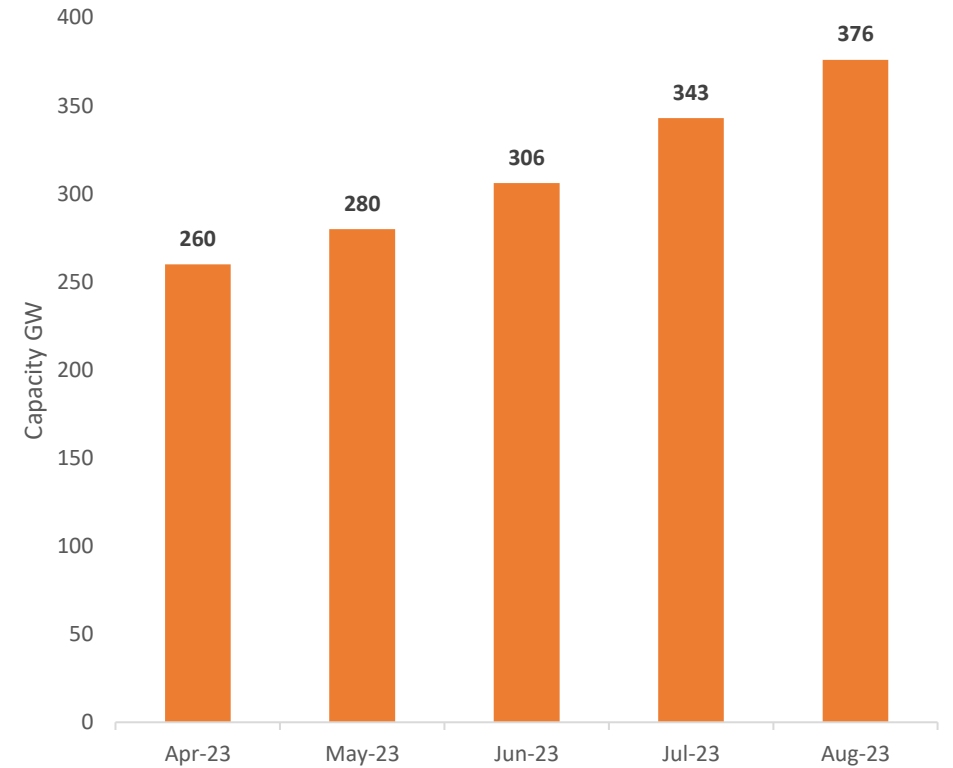
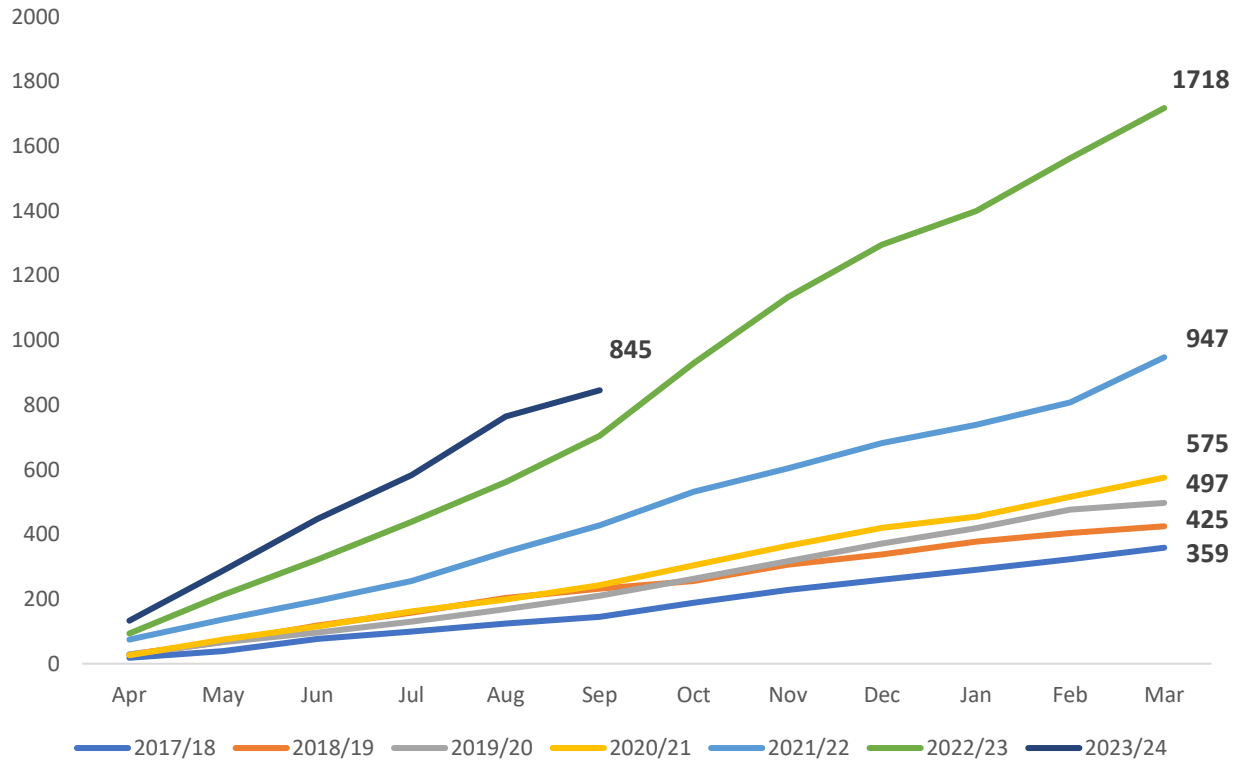


# Connection Applications

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 376GW, which is an increase of over 100GW in the last 5 months.

Licensed Applications Received

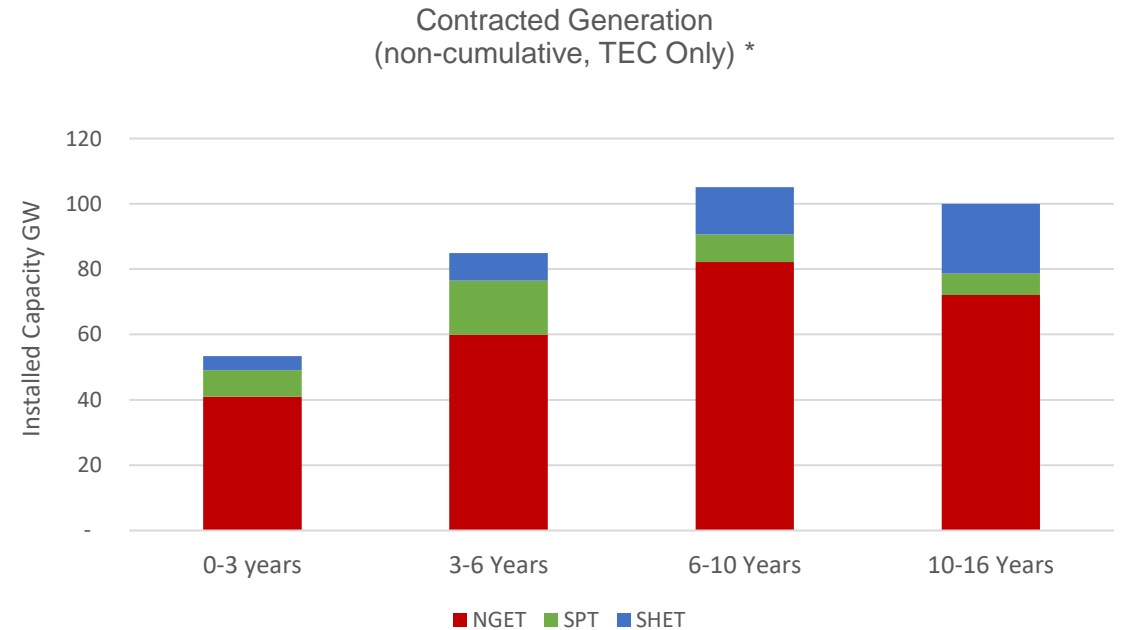
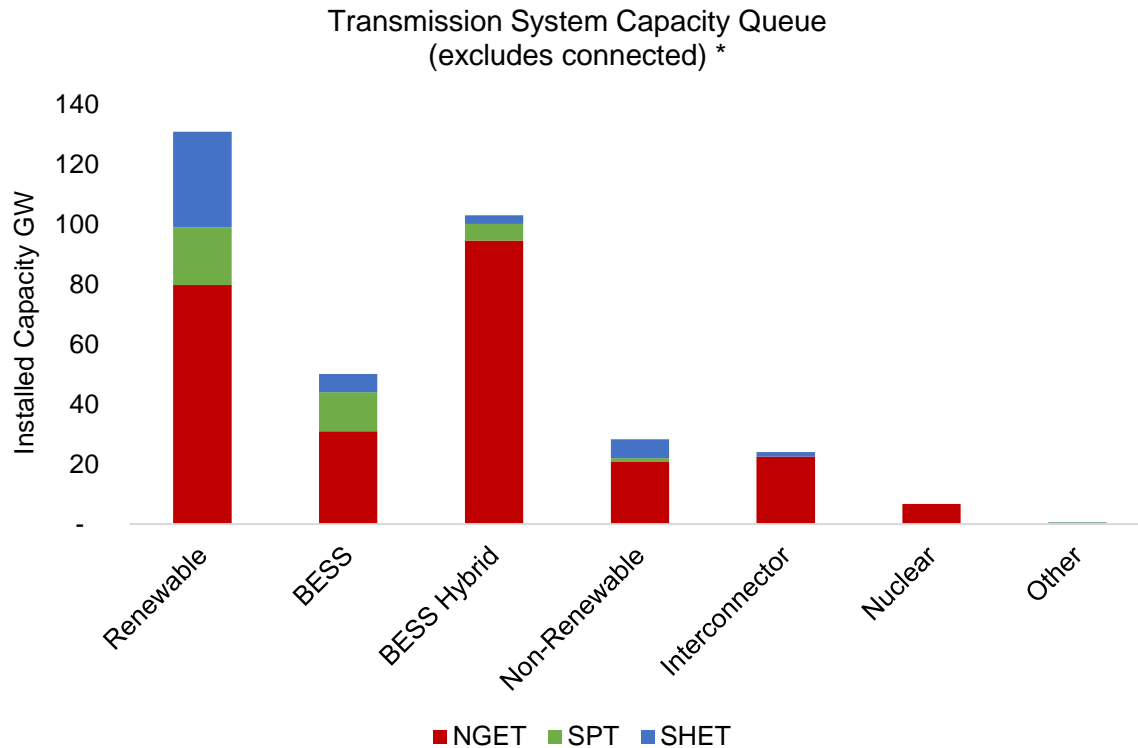


\*transmission connected capacity only – excludes 83GW of connected capacity

# Connections Queue

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

Over **395GW** 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. **113GW** currently in the distribution queue.



\*Data from TEC Register on 31/05/23

# 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- ensure customers still want to be a part of the amnesty
- 1.8GW has dropped out
- Starting to Terminate agreements for those that have confirmed



# CPA Review and Treatment of Storage

## Construction Planning Assumptions Review (CPA)

We are reducing the assumptions in relation to how many projects in the queue will connect from 100% to 30-40%

## Treatment of Storage (BESS)

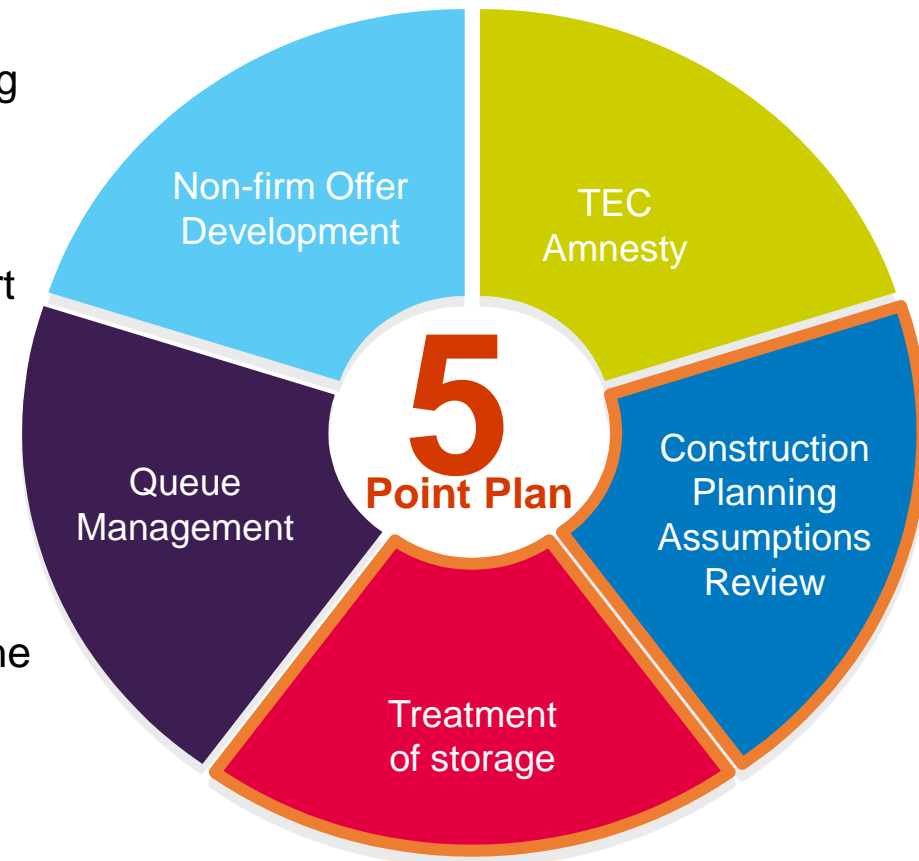
We are revising the way storage connections are modelled using insight resulting of a better understating of its behavior. The storage projects are dispatched to OMW because that's typically the output of the modelling for those samples but there have been CPAs where some storage projects were dispatched to a non-zero value. These changes will allow storage to connect quicker and support unlocking more capacity to connect others.

## Transmission works review (TWR)

Together the above make the Transmission works review where we hope to be able to reduce 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 launched [our non-firm policy](#) in June. It allows storage to connect once enable works are completed on a non-firm (customer choice) basis.

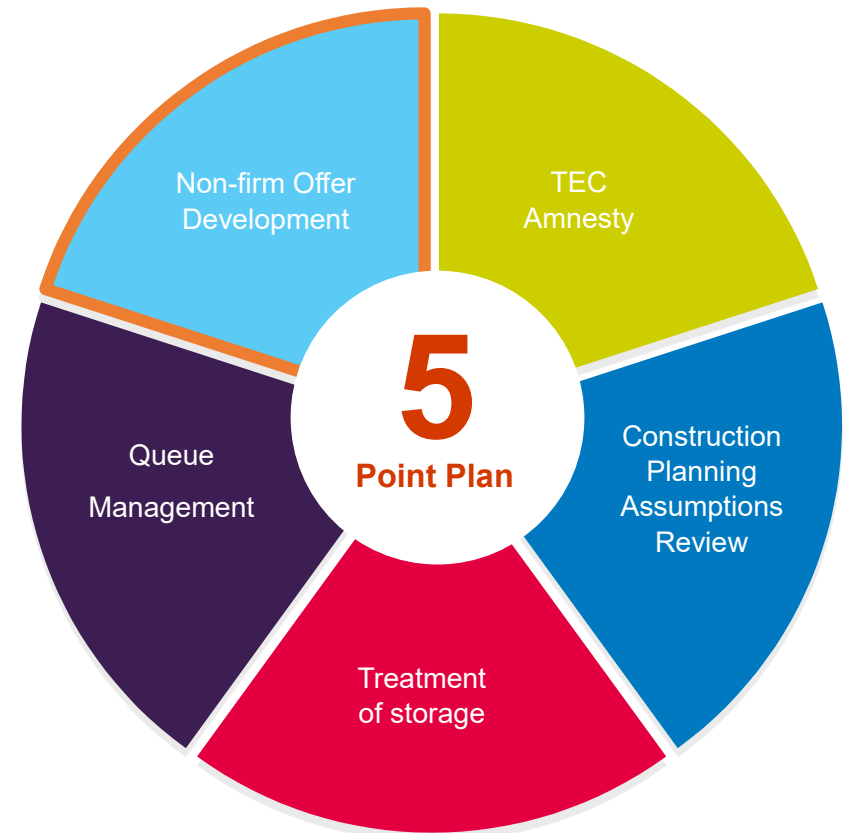
## What has happened since then

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 the [EOI](#) to understand the appetite for an accelerated non firm connection date for storage.

## Update

Our intention is to launch a tranche 1 to see if there is appetite for such a product. Initially this will be for ~20 customers (~10GW) at sites aligned to tranche 1 selection criteria. Customers will soon receive offers and will have 3 months to sign. In 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). The ENA is running a webinar 11<sup>th</sup> October for more info.



TNUoS Task Force verbal update

Christian Parsons - ESO

# CISG Connection subgroup verbal update

Alison Price - ESO



# GB Connection Reforms update

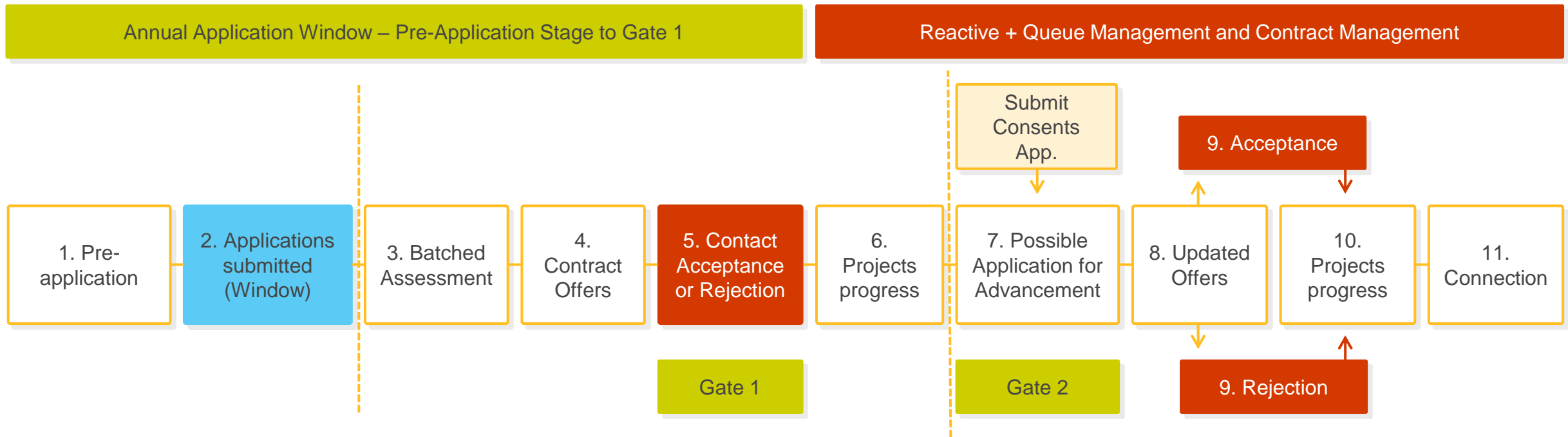
Dovydas Dyson - ESO



# Initial Recommendation Summary

Our initial recommendation is for Target Model Option 4.

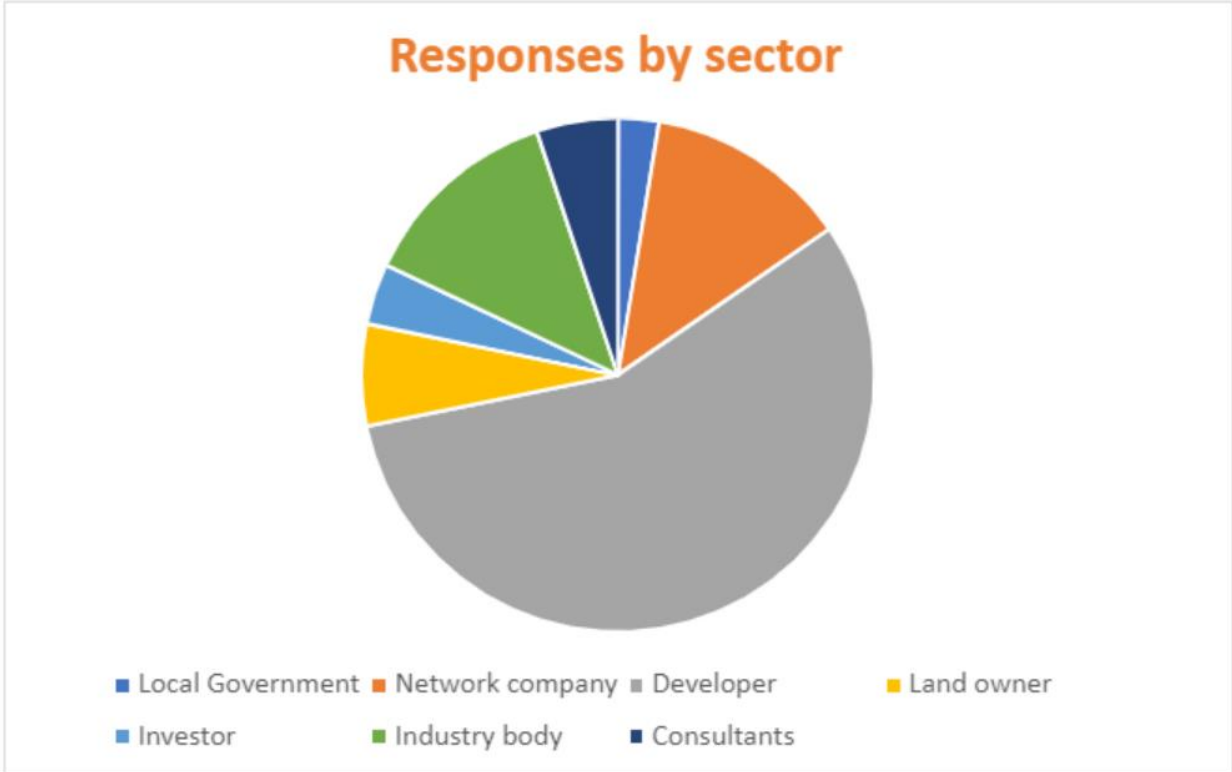
- It has an early window for coordinated network design and a later gate for potential acceleration of progressing projects.
- Various other improvements throughout the process based on feedback.





# Connections Reform Phase 2 Consultation Responses

We [consulted](#) between 13 June 2023 and 28 July 2023 and received 78 consultation responses from a broad range of stakeholders (see *below*) and the non-confidential responses are published [here](#)



# Connections Reform Phase 2 Consultation Responses

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## **Foundational Design Options and Key Variations**

The majority of stakeholders who provided a clear view agreed with our initial positions on the three foundational design options and key variations. This includes:

- Agreement with our initial proposal to not separate capacity and connections and introduce auctions;
- Not mandating centralised deployment of generation and large demand (but future-proof the connections process to facilitate centralised deployment if it were introduced in future).

## **Target Model Options (TMOs)**

The majority of stakeholders who provided a clear view agreed that the options we presented as the shortlist of potential future end to end process models (i.e. the TMOs) were a reasonable range of options. Few alternative options were suggested with no commonality of alternatives.

# Connections Reform Phase 2 Consultation Responses

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## Views on the TMOs

Of the four options presented to stakeholders, there was some outright support for our preferred option (TMO4, comprising an annual early-stage application window and two formal gates).

There was also some conditional/cautious support for TMO4 with the main concerns being:

- Requests for more frequent application windows and/or reduced application window duration;
- More detail on how Reserved Developer Capacity would work in practice (general support for the principle); and
- When Gate 2 occurs (i.e. the gate that allows the opportunity to advance connection dates) – we had suggested this might be when the application for Planning Consents has been submitted but there wasn't any consensus on the most appropriate timing for this gate.

Combining outright support and conditional/cautious support would result in majority support for TMO4.

Minority support for TMOs 1, 2 and 3 and some variation suggestions.

## Connections Reform Phase 2 Consultation Response

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**Quick Wins** - On areas we noted as potential quick wins (i.e. an improved Pre-Application Stage and the introduction of a 'Letter of Authority' to submit a connection application), there was near unanimous support and a lot of suggestions about how to design/implement such improvements.

- An exception relates to the Pre-Application Stage fee, where (whilst there was still majority support overall) there were mixed views.

**Implementation** - Mixed views, with some stakeholders advocating the need for pace, and some noting the need for more detailed development of the end-to-end process and for continued stakeholder engagement.

**Transitional Arrangements** - Minimal suggestions about the appropriate transitional arrangements before 'go live' of the of the reformed connections process, although some stakeholders provided helpful views.

## Next Steps

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We have reviewed the consultation responses and will continue to further consider the feedback over the next few weeks to refine our proposals prior to making final recommendations by November 2023.

We will be taking updates to our external governance groups (DPEG and Steering Group) over the coming weeks and we will also be providing updates and running a table session on key topic areas at Customer Seminars on 16 October 2023.



### Email us

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



# Comfort Break

# 10year TNUs projection update

Nick Everitt- ESO



# TNUoS Tariffs Five Year Projection for 2029/30 – 2033/34

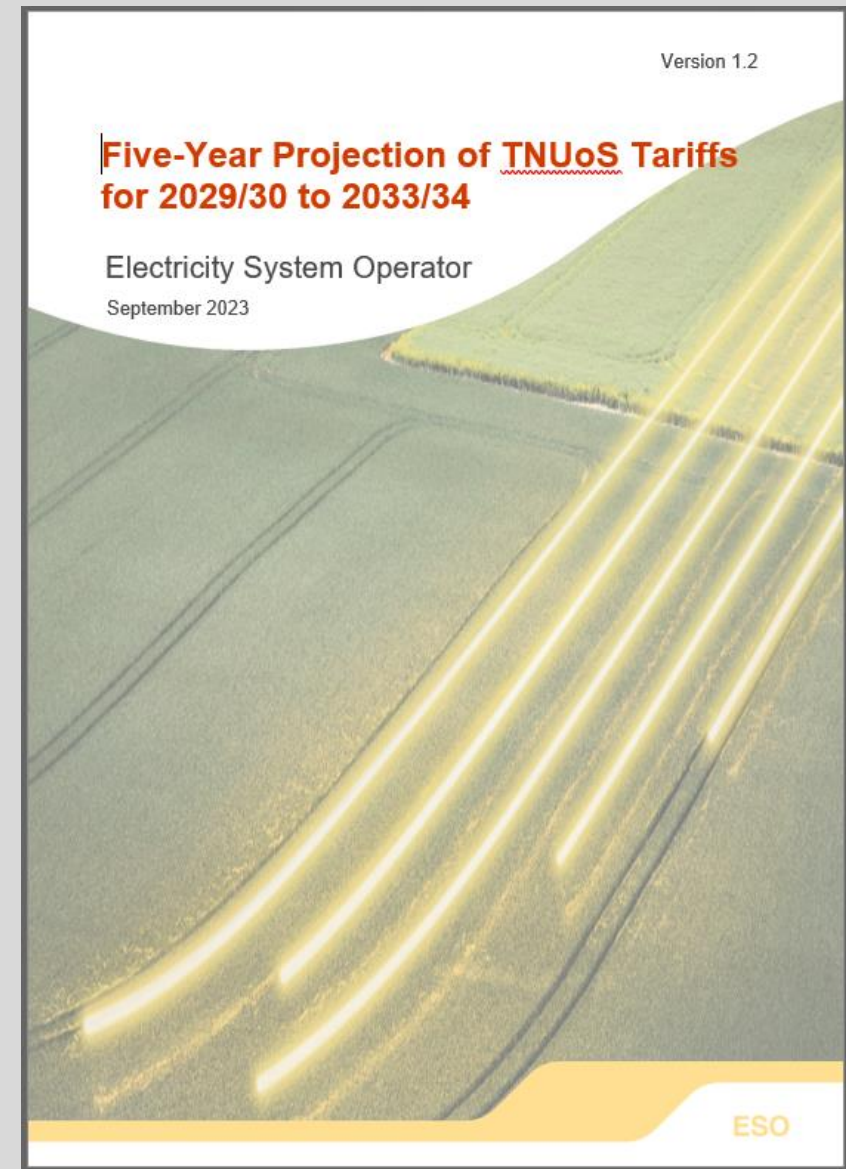
ESO Revenue Team

October 2023 - TCMF



# Resources

Item	Date/Link
TCMF Update	<a href="#">08/06/2023</a>
TCMF Update	<a href="#">03/08/2023</a>
Comms - Report Publication Date Update	<a href="#">25/08/2023</a>
Comms - Report Publication Date Update	<a href="#">14/09/2023</a>
Comms - Report Publication Date Update	<a href="#">20/09/2023</a>
Comms - Report and Tables Published	<a href="#">25/09/2023</a>
Comms - Webinar Media, updated Report and Tables	<a href="#">27/09/2023</a>
Report v1.2	<a href="#">29/09/2023</a>
Tables File v1.2	<a href="#">29/09/2023</a>
Webinar Slide Pack v1.2	<a href="#">29/09/2023</a>
Webinar Recording	<a href="#">25/09/2023</a>
Question and Answers Document	Coming Soon
TCMF Update	05/10/2023



# Background

The Pathway to 2030 Holistic Network Design helps to unlock the UK Government's ambition for 50 GW of offshore wind by 2030, by setting out a single, integrated approach that supports large scale delivery of electricity from offshore wind, to where it is needed across Great Britain.

This ambition raises the question of what impact this would have on TNUoS tariffs. Following requests from industry, we discussed provision of a TNUoS 10 year projection at the April TCMF meeting, to give insight on the tariff impact from significant future network development:-

- Holistic Network Design (HND - single, integrated design that supports the large-scale delivery of electricity generated from offshore wind); and
- Accelerated Strategic Transmission Investments (ASTI)
- Significant network reinforcement works will be required under the HND (£32bn for offshore network infrastructure) and ASTI (£20bn) to connect up to 50GW of offshore wind by 2030

The projection of the 2029/30 – 2033/34 TNUoS Tariffs, along with our already published 5 year view, provides industry with a view of tariffs for the next 10 years.

This projection is provided on a one-off basis, and its purpose is to illustrate the future trend of TNUoS tariffs, if the methodology remains unchanged, over the next 10 years whilst accepting that significant uncertainties and assumptions underly all numbers within the projection and that there is ongoing reform to change the current charging methodology which is used

# Modelling Approach

- We recognise the uncertainties in the next 10 years, and the constraints we face
  - New price control periods
  - Energy policies
  - New technologies and challenges
  - Charging/Modelling methodology changes
  - Unavailability of some detailed network data
  - Generation and demand background: scenarios instead of forecast
- We have therefore focused on the wider tariffs (locational elements) changes
  - Identifying the trends
  - Identify the main factors which drive tariff changes
- The modelling approach is different for the 10 year projection mainly due to unavailability of suitable data. More details on the modelling approach can be found in the report.

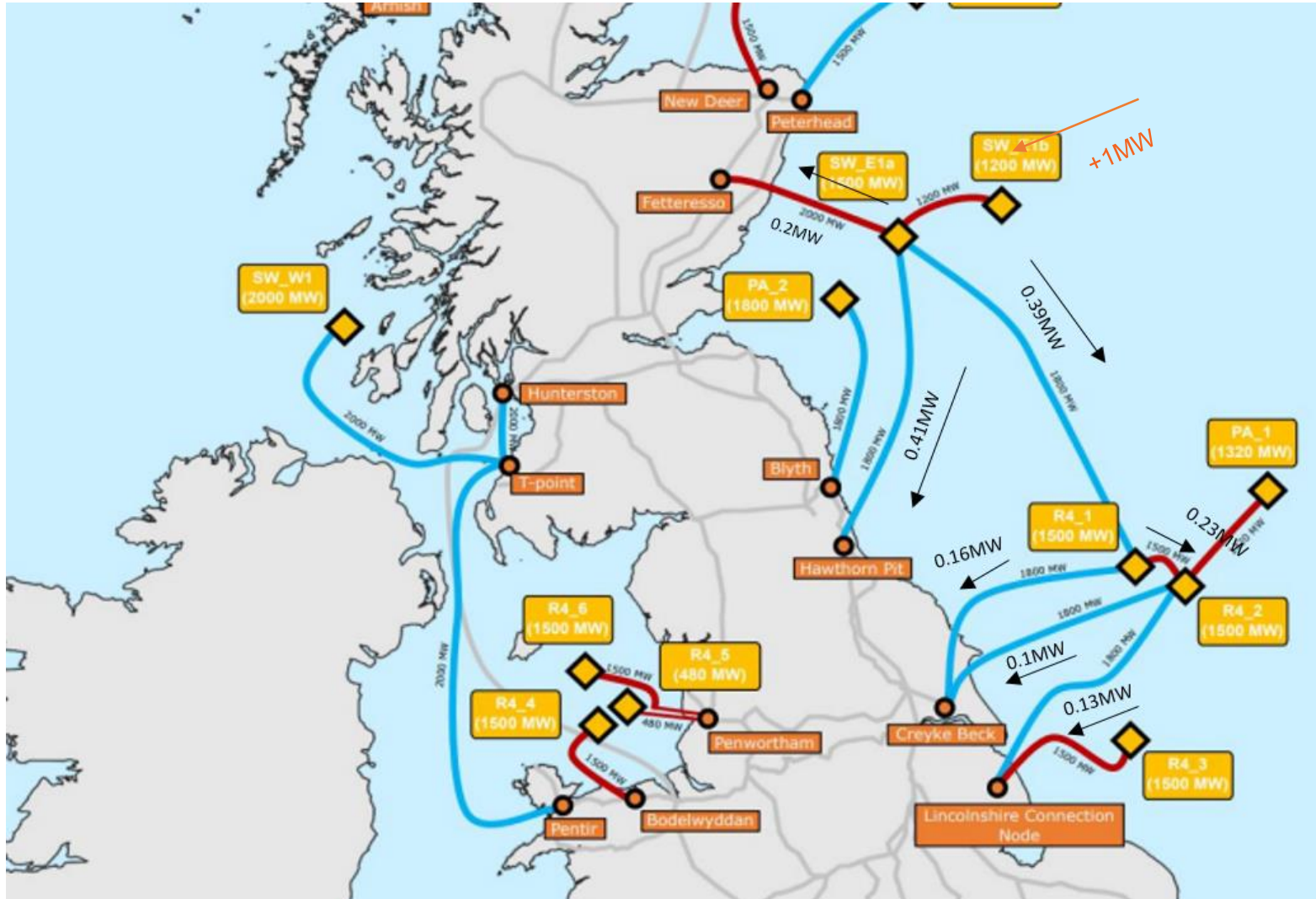
## Sensitivities

We have also included a sensitivity analysis by replacing the FES “leading the way” generation background with an alternative one known as “Falling short”.

# Input changes in this tariff publication

		April 2023 Five Year View	September 2023 Five Year Projection
Locational	DNO/DCC Demand Data	DNO/DCC forecast	ESO FES Demand Data
	Contracted TEC	Latest TEC Register	ESO FES Generation Data
	Network Model	ETYS network data	Incremental changes under the HND and ASTI
	Inflation	Forecast	2%
Non-locational	OFTO Revenue (part of allowed revenue)	Forecast	Forecast
	Allowed Revenue (non OFTO changes)	TO forecast	ESO assumption
	Demand Charging Bases	Monte-Carlo forecast	Extrapolation using the year-on-year trend under FES demand forecast
	Generation Charging Base	NGESO best view	ESO FES generation data
	Generation ALFs	Unchanged	Unchanged
	Generation Revenue (G/D split)	Forecast	Unchanged
	TDR Site Count and Consumption Data	Forecast	Unchanged

# Treat DC circuits as if they were AC circuits



- Indicative flows by +1MW at SW\_E1b.
- Results are indicative.
- Results change with generation, demand, network topology and parameters.
- CMP419 Generation Zoning methodology review raised. In scope is the HND configuration

# Key findings

## Total Revenue

- The total TNUoS revenue is projected at £7.73bn for FY29/30, (an increase of £2,416m from 2028/29). This is projected to increase to £7.9bn in 2033/34.

## Generation

- Generation revenue is projected to be **£1.62bn** for FY29/30; it is projected to grow to **£2.08bn** by FY33/34, mainly driven by the increase in offshore generation local charges.
- The generation charging base for FY29/30 has been projected as **117.7GW** based on the FES “Leading the Way” scenario, increasing to **157.9GW** in FY33/34.
- The average generation tariff for 2029/30 is projected at **£17.86/kW**; it is expected to grow to **£26.82/kW** in 2033/34.

## Demand

- Demand revenue to be collected through demand is projected at £6.12bn for 2029/30 (an increase of £2.1bn from 2028/29 charging year). This has been driven by the increase of total TNUoS revenue. From FY29/30 the demand revenue is projected to decrease year on year to £5.53bn in FY31/22 then increase to £5.82bn by FY33/34, in-line with the year-on-year variation in total revenue.

## Consumer Bill

- The total cost for the average end consumer is projected to be £79.45 per household in 2029/30 (7.45% of the average annual electricity consumer bill), an increase of £27.73 compared to the equivalent forecast figure for 2028/29. The total TNUoS charge is expected to decrease to £71.96 by 2031/32 then increase to £77.63 by 2033/34.

# Feedback 1

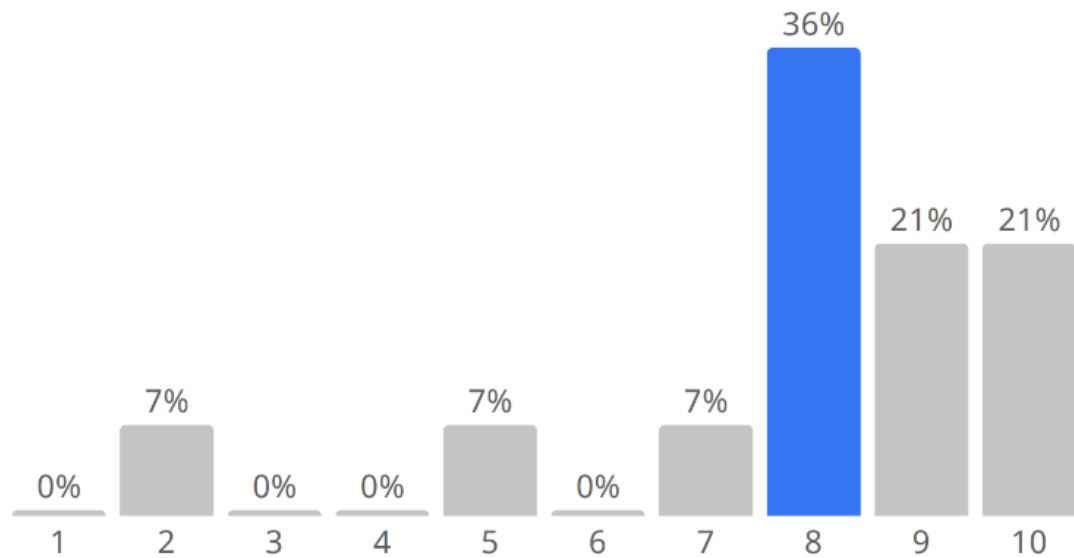
Rating poll

Survey (1/3)

How useful did you find the Five-Year Projection of TNUoS Tariffs Report?

0 1 4

Score: 7.9



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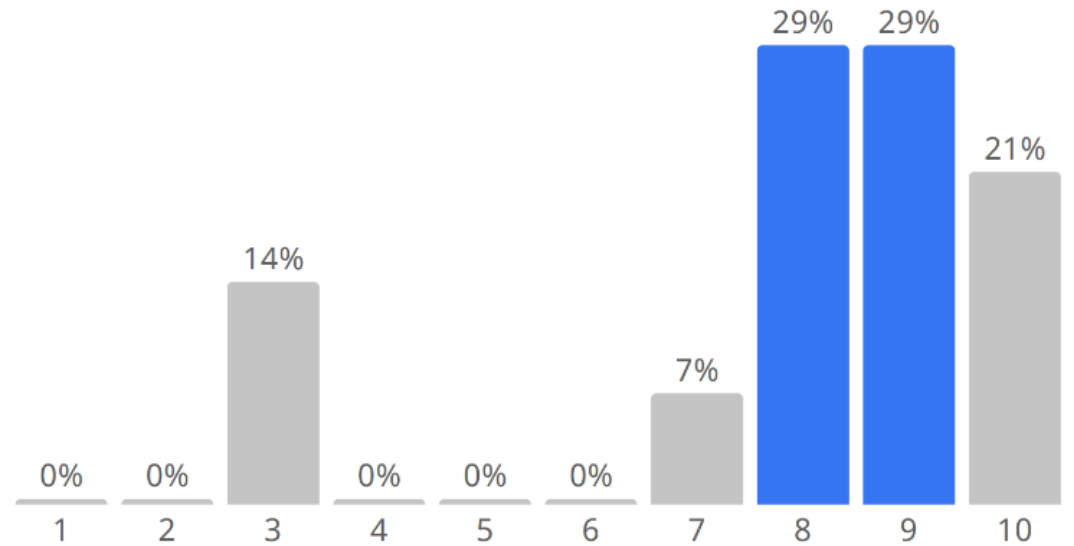
Rating poll

Survey (2/3)

How useful did you find today's webinar?

0 1 4

Score: 7.9



slido

# Feedback 2 – What could we do better?

Release report in advance so that attendees can more effectively contribute

Continue striving to strengthen assumptions

Many thanks to ESO team and Harriet for your explanations.

Longer time for Q & A please

Include written explanation in presentation of key inputs which result in significant variations in wider tariffs

Pause for questions at the end of each section instead of talking at people throughout - means you've moved on by the time we get to the question and we have to revisit. Share info well in advance so people can digest it beforehand. If you do this

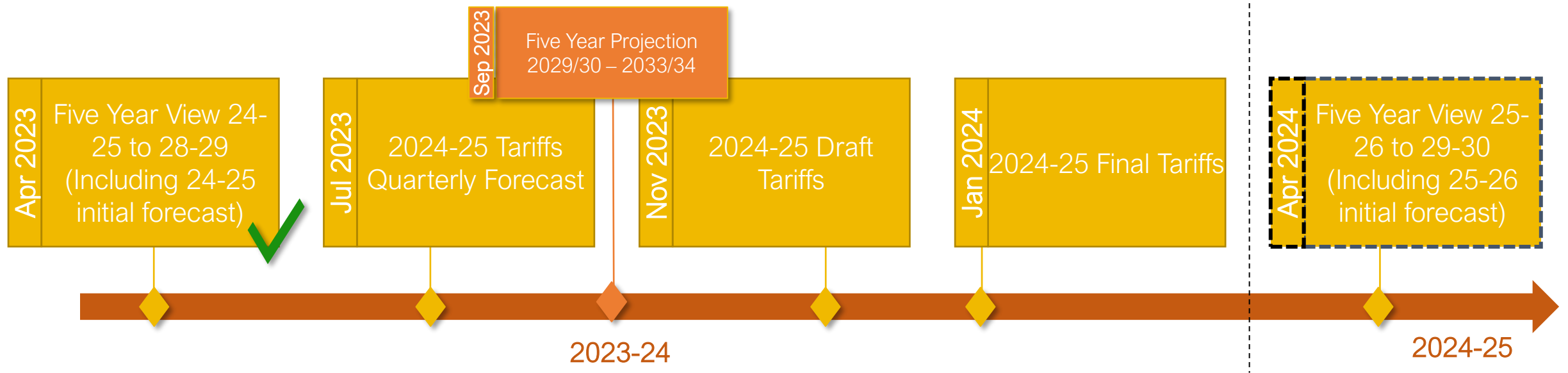
Take a little more time on each slide to allow more note taking

10-year TNUoS forecast is valuable for industry, however, to provide benefit to industry there needs to be transparency on key inputs, for example: – What is the assumed generation mix (capacity and location). – What assumptions have been made on bootstraps (where do they connect and how does the cost of the bootstrap relate to the expansion constant). – If aligning forecasts to FES and NOA, then which FES and NOA documents were used, which FES scenario, and where are the forecasts used listed in these documents. – What assumptions are being made on the design of the offshore grid, and how this impacts charging. A 10-year TNUoS forecast would be valuable to industry, as it allows industry to have a better understanding of the direction of travel of future TNUoS charges. A key ask would be for the models associated with the forecast to be provided, as this would have valuable benefits. It would allow industry to test their own scenarios and could reduce uncertainty through a better understanding of the direction of travel of future TNUoS charges. It will also provide a better understanding of the types of modelled parameters that may cause charges to change in the future. It would also help consider implications of future CUSC Mods by better understanding what their impact is likely to be.

Pause for questions at the end of each section instead of talking at people throughout - means you've moved on by the time we get to the question, and we have to revisit. Share info well in advance so people can digest it beforehand. If you do this publication again, make it 10 years not 5 year where we then have to go find the last 5 year and paste spreadsheets together to get a 10 year view. Really time consuming for us to all individually do when you already have the data.



# Tariff Timetable



- The next publication will be the draft forecast of tariffs for 2024/25 which will be published in November 2023.
- The final tariffs for 2024/25 will be published in January 2024 and will apply from April 2024.

# TCMF Terms of Reference update

Rachel McLeod - ESO

# Code Administrator Update

Milly Lewis - Code Administrator ESO



# Key Updates since last TCMF

## New Modifications

- **CMP420 Treatment of BSUoS Revenue Recovery, and creation of a BSUoS Fund**

## Decisions

- **CMP288 Explicit charging arrangements for customer delays and backfeeds**

## Implementations

- **None**

# CUSC Modification Panel Election Results 2023/25

<b>Elected</b>	<b>Company</b>	<b>Seat</b>
Joe Colebrook	Innova Renewables Limited	CUSC Users' Panel Member
Binoy Dharsi	EDF	CUSC Users' Panel Member
Joe Dunn	Scottish Power	CUSC Users' Panel Member
Andrew Enzor	Cornwall Insight	CUSC Users' Panel Member
Garth Graham	SSE	CUSC Users' Panel Member
Kyran Hanks	Waters Wye	CUSC Users' Panel Member
Paul Jones	Uniper	CUSC Users' Panel Member
Mark Duffield	National Grid Interconnectors	CUSC Users' Panel Member Alternate
Lauren Jauss	RWE	CUSC Users' Panel Member Alternate
Grace March	Sembcorp	CUSC Users' Panel Member Alternate
Cem Suleyman	Drax	CUSC Users' Panel Member Alternate

# Authority Expected Decision Date

## Decisions Pending

Modification	Final Modification Report Received	Expected Decision Date
<a href="#">CMP298</a> 'Updating the Statement of Works process to facilitate aggregated assessment of relevant and collectively relevant embedded generation'	06/04/2022	20/10/2023*
<a href="#">CMP330&amp;CMP374</a> 'Allowing new Transmission Connected parties to build Connection Assets greater than 2km in length and Extending contestability for Transmission Connections'	10/08/2023	08/03/2024
<a href="#">CMP331</a> 'Option to replace generic Annual Load Factors (ALFs) with site specific ALFs'	12/07/2023	30/10/2023*
<a href="#">CMP344</a> 'Clarification of Transmission Licensee revenue recovery and the treatment of revenue adjustments in the Charging Methodology'	08/02/2023	08/12/2023*
<a href="#">CMP376</a> 'Inclusion of Queue Management process within the CUSC'	07/06/2023	10/11/2023*
<a href="#">CMP379</a> Determining TNUoS demand zones for transmission - connected demand at sites with multiple Distribution Network Operators (DNOs)	07/09/2023	16/10/2023
<a href="#">CMP398</a> 'GC0156 Cost Recovery mechanism for CUSC Parties'	11/07/2023	31/10/2023*
<a href="#">CMP412</a> 'CMP398 Consequential Charging Modification'	11/07/2023	31/10/2023*
<a href="#">CMP414</a> 'CMP330/CMP374 Consequential Modification'	10/08/2023	08/03/2024

The Authority's publication on decisions can be found on their website below:

<https://www.ofgem.gov.uk/publications/code-modificationmodification-proposals-ofgem-decision-expected-publication-dates-timetable>

\* Dates moved since last update

# Key Updates ahead of the next TCMF

## October Consultations

- **CMP315** (TNUoS Review of the expansion constant and the elements of the transmission system charged for) and **CMP375** (Enduring Expansion Constant & Expansion Factor Review Code Administrator Consultations) scheduled to run from **31 October until 5pm 21 November 2023**

## Other

- **CMP392** (Transparency and legal certainty as to the calculation of TNUoS in conformance with the Limiting Regulation) Final Modification Report will be issued to Ofgem on **13 October 2023**.
- **CMP408** (Allowing consideration of a different notice period for BSUoS tariff settings) and **CMP415** (Amending the Fixed Price Period from 6 to 12 months) Final Modification Reports will be issued to Ofgem on **13 October 2023**.

## Useful Links

Updates on all Modifications are available on the Modification Tracker [here](#)

Ofgem's expected decision dates/ date they intend to publish an impact assessment or consultation, for code modifications that are with them for decision are available [here](#)

The latest CUSC Panel Headline Report is available [here](#)

The latest prioritisation stack is available [here](#)



## CUSC 2023 - 2024 - Panel dates

	Panel Dates	Papers Day	Modification Submission Date	(TCMF) CUSC Development Forum
September	29	21	14	7
October	27 (Face to Face Meeting)	19	12	5
November	24	16	9	2
December	15	7	30 November	23 November
January	26 (Face to Face Meeting)	18	11	4
February	23	15	8	1
March	22	14	7	29 February
April	26 (Face to Face Meeting)	18	11	4
May	31	23	16	9
June	28	20	13	6
July	26 (Face to Face Meeting)	18	11	4
August	23	15	8	1
September	27	19	12	5
October	25 (Face to Face Meeting)	17	10	3
November	29	21	14	7
December	13	5	28 November	21 November

# AOB & Close