



# ESO Customer Connections Seminar

23 April 2024

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*This document contains the slides from all sessions that took place at the Customer Connections Seminar on 23 April 2024. Key session content is listed below:*

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- **You Said... ESO Did:** progress since the last seminar 10 – 15

## Breakout Sessions:

- **Connecting the Dots:** our plan for further and faster connections reform 18 – 29
- **Let's Talk Tactics:** how we're shaping the near future across transmission and distribution 30 – 32
- **A Conversation with Connections Operations:** overview and Q&A panel 33 – 35
- **Compliance in a Nutshell:** roles, responsibilities and challenges 36 – 47

# Agenda

1. Registration	09:15 - 10:00
2. Welcome	10:00 - 10:10
3. You Said... ESO Did: progress since the last seminar	10:10 - 10:30
4. Connections Reform: panel discussion with ESO, Ofgem and DESNZ	10:30 - 11:15
5. Break	11:15 - 11:45
6. Breakout Session 1 (Choice of 4)	11:45 - 12:30
7. Breakout Session 2 (Choice of 4)	12:30 - 13:15
8. Lunch	13:15 - 14:15
9. Breakout Session 3 (Choice of 4)	14:15 - 15:00
10. Break	15:00 - 15:30
11. Ask the Industry: panel discussion with ESO and Networks	15:30 - 16:30
12. Closing Remarks	16:30 - 16:45
13. Networking	16:45 - 18:00
<b>* Drop-in Rooms</b>	<b>11:15 - 16:45</b>



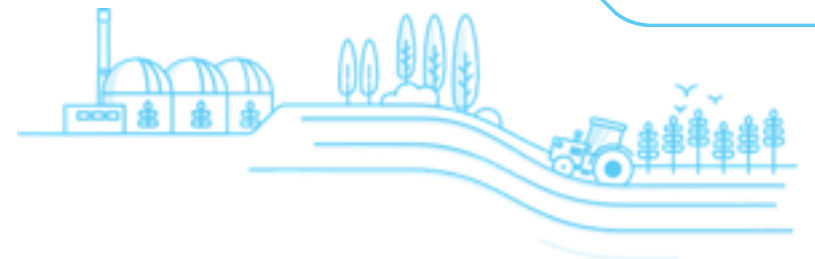
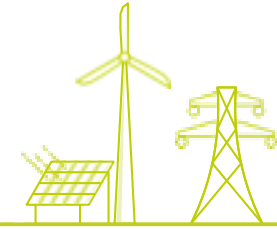
# Agenda

## Breakout Sessions

	Room
A Conversation with Connections Operations	Spay
Connecting the Dots... further faster reform	Ballroom 1&2
Let's Talk Tactics... shaping the future across T&D	Ballroom 3
Compliance in a Nutshell	Tay

## Drop-ins Rooms

	Room
Connections Contract Managers	Don
Meet the Compliance Team	Don
The Art of the Digital... Connections 360, portal	Dee



# Thank YOU

For every attendee here today, we will donate £4 to Glasgow City Mission



*'We offer spirit-led, faith-filled community to vulnerable adults and children within the city, by fighting against poverty and disadvantage in Glasgow'*



**David Wildash**

Head of Customer Connections, ESO

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## Opening Thoughts



# Meet the Connections Team





**Nicola Bruce**

Head of Connections Operations

This role has a huge customer focus, and will look to drive forward greater customer service by delivering on our existing processes, helping build stronger relationships with our TO delivery partners and meeting existing licence obligations.



**Robyn Jenkins**

Head of Connections Change Delivery

Accountability for delivery of the Connections Portal Project and managing the coordination and delivery of all reform activities and creating new processes for the Connections operations team. This will include delivering on the 5 point plan commitments.



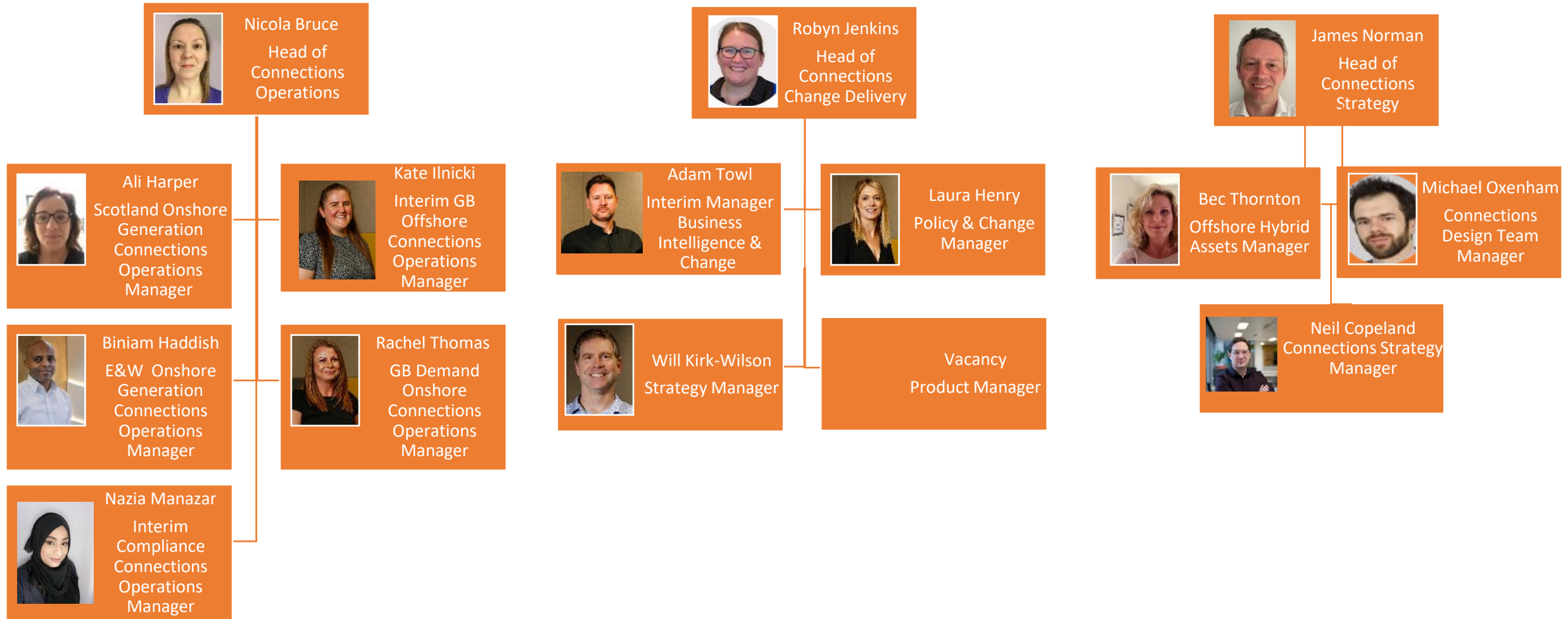
**James Norman**

Head of Connections Strategy

Delivering the next level of design of the reform, while thinking about the longer term strategic direction of the connections process and related policy development and how it interacts with other major reform programmes across the ESO. Accountable for whole system connection design and policy, including thinking on connection competition.



# Customer Connections





ESO Customer Connections Seminar

# You Said... ESO Did

Progress since the last Customer Seminar (October 2023)

23 April 2024

# You Said...

# ...We Did

**'Lack of resources'**

- **New leadership structure**
- **Increased headcount**
- **Scotland office base**



**'Team seem understaffed  
and overstretched'**

# You Said...

**'Slow response times to emails and queries'**



# ...We Did

**New process to manage queries via the portal**

- **Query numbers**
- **Query types**
- **Response times**
- **Customer Satisfaction**

# You Said...

# ...We Did

**‘Lack of transparency  
on decisions’**



## Connections Forum

- **Standing items:**  
Connections by numbers, recent developments, Q&A
- **243 attendees March**
- **220 attendees April**
- **Next Forum 13 May**

# You Said...

**‘Process improvements needed to the portal and data accuracy’**



# ...We Did

- **December – Stakeholder feedback Portal deployment**
- **December – Single Sign on introduced**
- **January – Queue Management functionality introduced**
- **April – Letter of Authority available on portal applications**
- **Coming soon: Connections 360**

# You Said...

# ...We Did

**‘Connections process  
delays and hard to  
navigate’**



- **New advisory group (CPAG)**
- **Extensive stakeholder engagement**
- **‘First Ready, First Connected (TM04+)’ published**





ESO Customer Connections Seminar

# Connections Reform: ESO, Ofgem, DESNZ

23 April 2024

# Connections Reform Panel

**Slido #4218672**



**Ali Harper**

Scotland Onshore Generation Connections  
Manager, ESO



**James Norman**

Head of Connections Strategy, ESO



**Paul Hawker**

Head, Electricity Network Connections,  
Department for Energy Security and Net Zero



**Tessa Hall**

Head of Electricity Operations, Ofgem



ESO Customer Connections Seminar

# Connecting the Dots (breakout)

... our plan for further and faster connections reform

23 April 2024

# Agenda

- Session Format
- Target Model Option (TMO) 4 – Dec 23
- What has changed?
- TMO4+
- Implementation Timeline
- Recent and Next Steps

#1311622



James Norman

Head of Connections Strategy

# Format

- Presentation
- Your questions answered in the background
- Quick Fire Slido Round
- Table Discussions

#1311622



# Target Model Option 4

TMO4 – December 2023

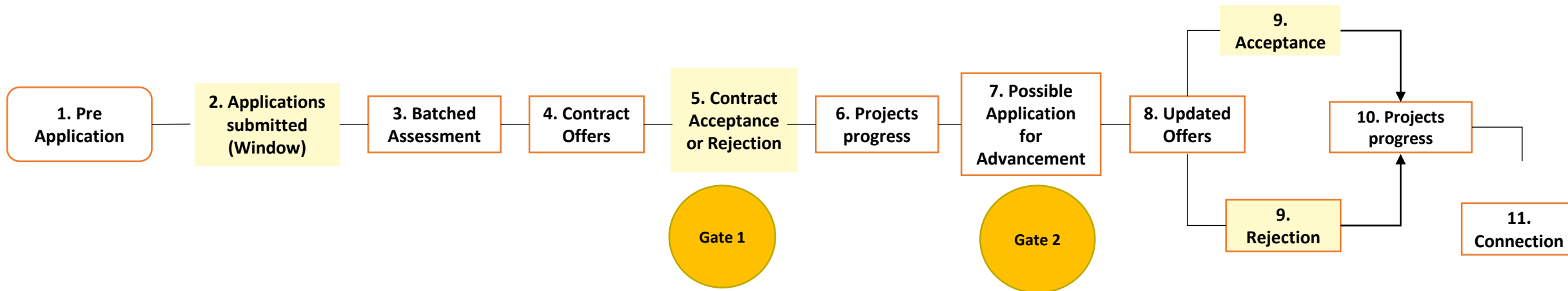


# Target Model Option (TMO) 4 – Dec 23

#1311622

Annual Application Window – Pre-Application Stage to Gate 1

Reactive Queue Management + and Contract Management



Final Recommendations – December 2023

Whether queue position would be allocated at Gate 1 or Gate 2

Appropriate milestone for Gate 2

Application window frequency and duration



# What Has Changed?

Connections Reform



# What has changed?

- **Total connections queue could reach 800GW by the end of 2024**
- **Industry interventions successful, but outpaced by growth**
- **Considered options for further and faster reform**

**Recommendation**  
**Extend reformed process to**  
**contracted projects**

#1311622



# TMO4+

Gate to whole queue approach



## TMO4+ Key Points

First ready, first connected approach

Queue positions, connection dates and points = Gate 2

Indicative connection dates and points = Gate 1

No user commitment or queue management milestones for contracted projects Pre-Gate 2

Existing queue given time to demonstrate Gate 2

### Analysis predicts:

- Could potentially more than halve the size of the queue, enabling earlier connection dates for projects that have met Gate 2.
- Earlier connection dates (projects that met Gate 2).

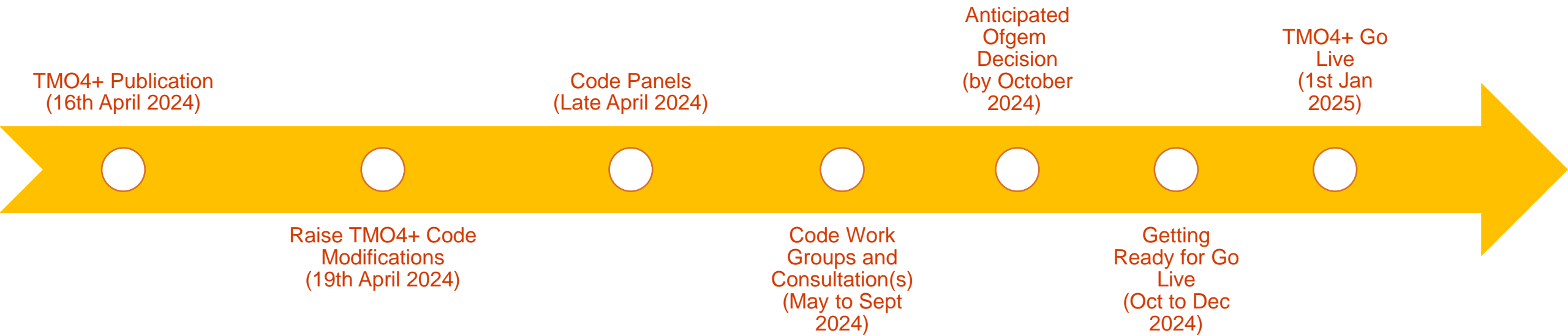
# Implementation





# Implementation

#1311622



We will continue to provide updates at industry forums and via governance groups.  
Industry will have the opportunity to participate in the Code Modification Workgroups and/or respond to consultations.

# What could this mean for me?

(Digital Resource and useful links)



#1311622

## Q&A

Quick Fire Slido Round

Table Discussions





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# Let's Talk Tactics (breakout)

...how we're shaping the near future across transmission and distribution

23 April 2024

Phase 1 of Technical Limits – Jan 24  
30GW across 72 GSPs

10 GW BESS accelerated – Jan 24

CMP376 QM – ongoing Implementation Throughout 2024

CMP 427 LOA mod implemented- 28 Mar 24

CAP Milestone delivery Package 2- Apr 24

Reform Mods (incl LoA Phase 2) Raised – Apr 24

Technology Change Paper- May 24

CMP 330 / 374 Contestability Mod- May 24 Ofgem decision

Second Step Offer Completed - 31 May 24

# 2024 and beyond...

CAP- Capacity - bay allocation- spring/summer 24

IDNO paper- spring/summer 24

Transmission works review Contract updates – Summer 24

CMP328- distribution impact assessment - Withdraw / new code mod- spring/summer 24

CAP - Decide longer-term approach to allocate capacity complementing strategic network planning- spring/summer 24

CAP - Explore more stringent measures to improve certainty of progression- spring/summer 24

CAP - Recommendations to optimise existing network capacity- spring/summer 24

CAP - Effectively allocate network capacity released in the short term- spring/summer 24

Accelerating Storage in Scotland – Jul 24

Phase 1 of Scottish Technical Limits – Mar / Jul 24  
216MW across 26 GSPs

Rollout of Phase 2 of Technical Limits – Mar / Aug 24  
16 GW across 80 GSPs

Rollout of Reallocation of Capacity – Mar / Aug 24

Accelerating Storage further in England & Wales – Autumn 24

Reformed process proposed 'go live' – Jan 25

CMP417 - securities for demand- Q1 25 Ofgem decision

Monitoring and Exit of 'Zombie Projects' – Dec 23: Nov 25

# Roundtable introduction

**Sli.do Code-  
Letstalktactics**



**TABLE 1- Letter of Authority (LoA)**  
**Folashadé Popoola (ESO)**

The Letter of Authority (LoA) is a new mandatory requirement that new onshore transmission connection applicants must submit alongside existing application criteria in order to be considered valid and complete.



**TABLE 2- Policy/Strategy**  
**Laura Henry (ESO)**

Policy overview of all tactical policy and connection actions that the ESO is progressing with TOs, Ofgem and DESNZ ahead of the wider Connections Reform agenda.



**TABLE 3- Connections Action Plan (CAP)**  
**Ruth Matthew (ESO)**

Connections Actions Plan (CAP) overview of the actions taken by the ESO against the key CAP themes:

- Raise entry requirements
- Remove stalled projects
- Better utilise existing network capacity
- Better allocate available network capacity
- Improve data and processes



**TABLE 4 - Storage**  
**Jo Greenan (ESO)**  
**Annette Sloan (SSEN)**  
**Gareth Williamson (SPT)**  
**Atia Adrees (ESO)**



Storage table covers two initiatives:  
1) improved modelling assumptions  
2) non-firm connection arrangement / accelerated storage policy



**TABLE 5 ENA/ESO**  
**David Boyer (ENA)**

**Rob Matta (SPEN) or Michelle Sandison (SSEN)**  
**Will Kirk- Wilson (ESO)**  
**Alex Markham (ESO)**

The ENA has identified priority areas to support customers connecting at distribution. eg Technical limits, connections reform (DFTC), distribution queue management, greater flexibility for storage customers and charging.





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# A Conversation with Connections Operations (breakout)

...overview and Q&A

23 April 2024

Slido: #1608976

# Roundtable introduction



**Head of Connections Operations**  
**Nicola Bruce (ESO)**



**Scotland Onshore Generation  
Connections**  
**Ali Harper**



**GB Offshore Connections**  
**Kate Ilnicki (ESO)**

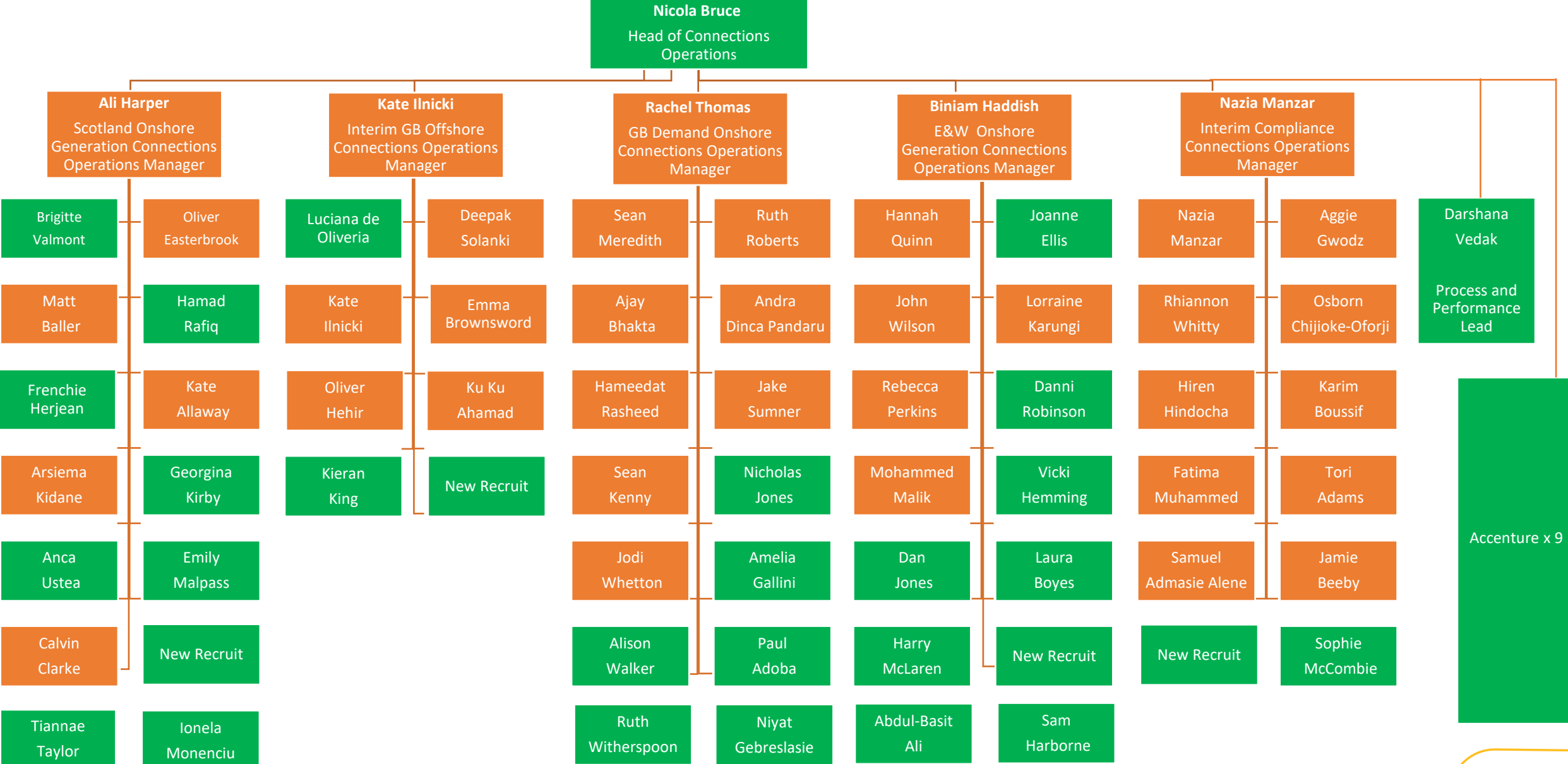


**GB Demand Connections**  
**Rachel Thomas (ESO)**



**E&W Onshore Generations**  
**Biniam Haddish (ESO)**

# Connections Operations







ESO Customer Connections Seminar

# Compliance in a Nutshell

...roles, responsibilities and challenges

23 April 2024

Slido #1842378



# Connections Operations Compliance & Engineering Compliance

**Nazia Manazar**

Interim Connections Compliance Operations Manager

**David Lacey**

Engineering Compliance Team Manager

**Arnaldo Rossier**

Senior Compliance Engineer



# Compliance – Our teams



We ensure Customers that want to connect to the Transmission System comply with the necessary codes and contractual clauses.

## Compliance Operations Team

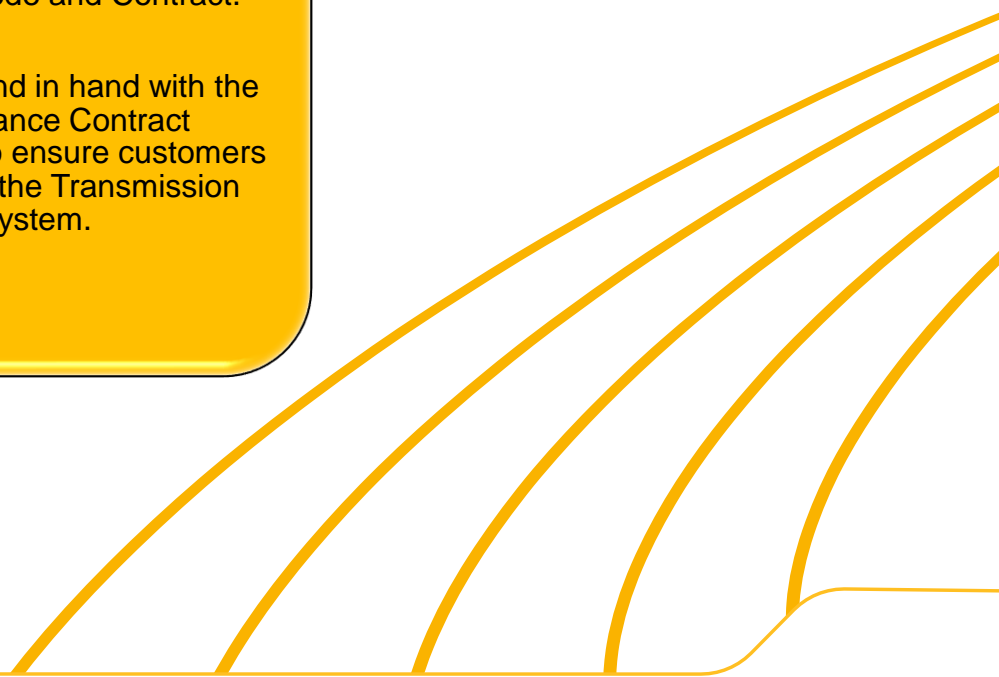
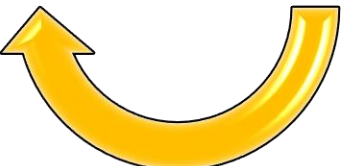
Contract Compliance Managers (CCM) manage the end to end compliance process and own the customer relationships.

We work closely with the engineers to ensure a smooth transition through the compliance process.

## Engineering Compliance Team

Engineers manage the technical aspects of the connection in accordance with the Grid Code and Contract.

We work hand in hand with the Compliance Contract Managers to ensure customers connect to the Transmission system.



# Compliance – Broader ESO Involvement



\*1 includes:

NAP,  
Network Modelling

\*2 includes:

Systems Support and Insight,  
Technical Operations Policy,  
System Restoration / Black Start

\*3 includes:

COAT,  
Operability Intelligence,  
Operability Policy

# Role of Engineering Compliance



- **Generate Compliance Statement**
- **Review DRC Generator Data submissions**
- **Review Simulation Studies**
- **Review RMS / EMT model submissions**
- **Support Customer engagement meetings**



- **Witness Factory Testing (HVDC links, grid forming)**
- **Confirm GC compliance for ION (A&B) certificate (s)**
- **Witness site testing (Sync plant – AVR/PSS only)**
- **Review Site Test Data Submissions**

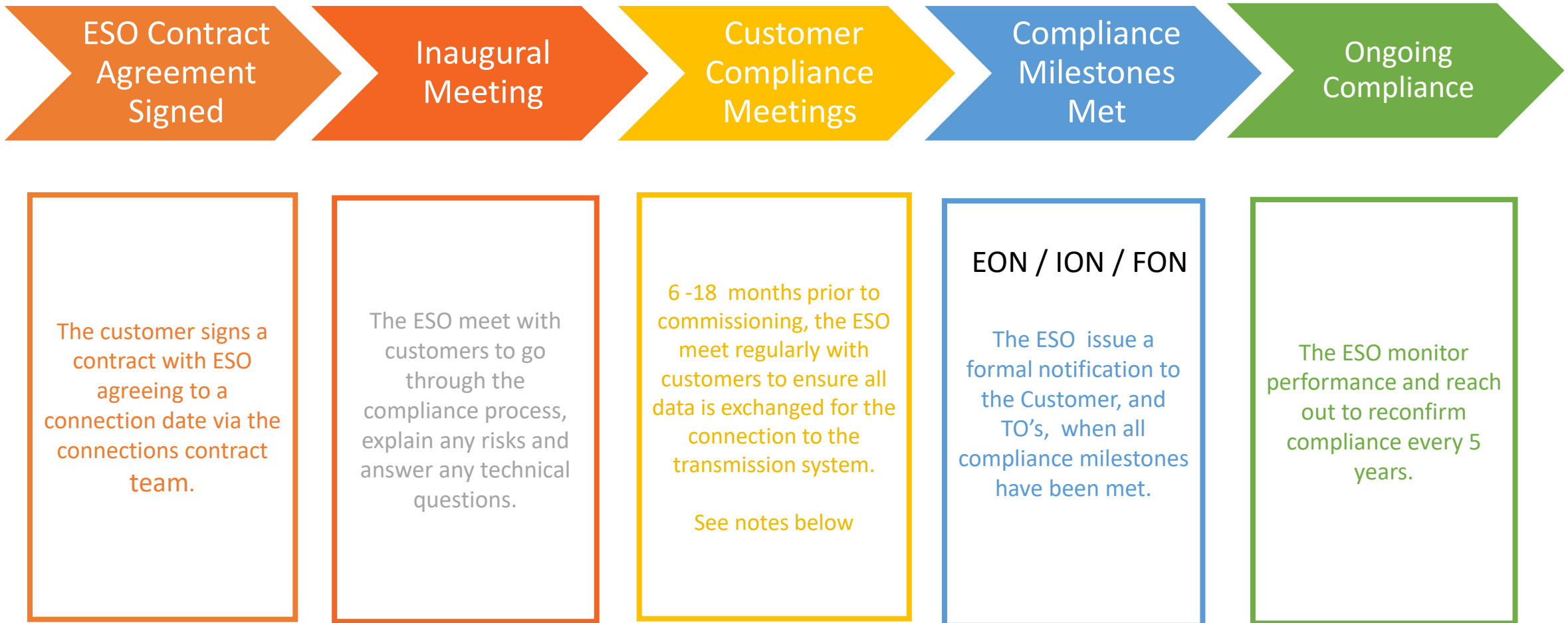


- **Model verification assessment**
- **Review Final Validation Report submission**



- **Confirm GC compliance for FON certificates**
- **Complete MSA Table**
- **5 year repeat plan – data review**
- **Generator fault ride through investigations**
- **Loss of infeed – generator response investigations**

# Compliance Process



1. Please be aware of turn around times for document submissions which, in cases, can be up to 3-4 weeks
2. Specific requirements relating to modelling and delivery timeline are summarised later in the presentation

# Compliance – Risks to your project (where we see delays!)





# Key Challenges

ESO Perspective

Let us hear your perspective

Project delays and changes

UDFS submissions

Model Submissions

Data Format / pressure to turn submissions round quickly



# Models: Why are they Important?

GB  
Network  
model  
underpins  
key  
license  
activities

They support key activities the ESO undertake

Network  
Development

Outage  
Planning

Operability  
Assessment

Compliance  
Assessment

Fault  
Investigations

**It's vital that the model is representative of the plant installed**

# Models: Review & Validation

Engineering Compliance will act as the primary interface for reviewing the models. We will confirm:

- Software version is correct
- Model is validated with appropriate documentation

Key requirements:

- All directly connected sites are required to provide RMS and EMT models
- Modelling requirements on Embedded generation will be confirmed by the Compliance Engineer at an early stage in the contract
- RMS models are required to be open-source and not contain DLL's, EMT models may be encrypted.
- RMS and EMT models are required to cover the full scope of the project. Manufacturer's models covering component parts cannot be accepted.

# Model Submission Requirement

Unless otherwise specified in the Bilateral Agreement, the timescale for fulfilling the model submission requirements is **3 months prior to the issue of the ION and 1 month prior to the issue of a LON.**

From 2024 onwards, Customers will be reminded of their obligations in writing at periods leading up to the submission date. This is to minimise complications close to the ION date.



# Forward Look:





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# Ask the Industry: ESO and Networks

23 April 2024



# Ask the Industry Panel

**Slido #6115310**



**Alison Harper**

Scotland Onshore Generation Connections Manager, ESO



**Lynne Bryceland**

Head Of Transmission Commercial, SPT



**Oliver Driscoll**

Head of Customer Experience, SSENT



**Paul Lowbridge**

Head of Customer Management, NGET



**David Boyer**

Director, Electricity Systems, ENA



**Nicola Bruce**

Head of Connections Operations, ESO



**Robyn Jenkins**

Head of Connections Change Delivery, ESO



## David Wildash

Head of Customer Connections, ESO

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## Closing Remarks

# Markets Forum

We are delighted to announce details of our next Markets Forum

If you can't join us on the day, you'll be able to watch a live stream of the main event. Tickets are limited, so choose your preferred [sign-up](#) option

**Location:** 200 SVS, Glasgow

**Date:** 14 May 2024

An overview of our key market priorities and industry panel with optional end of day event to continue the conversation with our Senior ESO Leaders and colleagues in a dedicated networking session



- We are intending to share updates for both Electricity and Gas in this forum as part of our Whole Energy System approach
- If you have specific questions or topics you would like to see addressed, please contact: [box.MarketsEngagement@nationalgrideso.com](mailto:box.MarketsEngagement@nationalgrideso.com)

**Thank you for  
attending**

**Join us  
for networking**

**Register for 13  
May Connections  
Forum**

