Transmission Charging Methodologies Forum and CUSC Issues Steering Group

Meeting 137 - 3 August 2023

ESO

Agenda

1	Introduction, meeting objectives and review of previous actions **Claire Huxley - ESO**	10:30 - 10:35
2	Code Administrator update **Milly Lewis - Code Administrator ESO**	10:35 - 10:45
3	TNUoS Task Force verbal update **Paul Jones**	10:45 - 10:55
4	TCMF Sub-group – Enduring Fixed BSUoS verbal update **Alice Taylor - ESO**	10:55 - 11:00
5	CISG Connection subgroup first workgroup verbal update **Alison Price and Joseph Henry – ESO**	11:00 - 11:05
6	Control room fax machine replacement **Bernie Dolan / Jim Hunt - ESO**	11:05 - 11:15
7	Detailed update on the TNUoS 10year projection **Nick Everitt - ESO**	11:15 - 11:25
8	Comfort break	11:25 - 11:35
9	OTNR Update: Overview of Proposed CUSC modification **Nitin Prajapati, ESO**	11:35 - 11:45
10	TCMF feedback **Claire Huxley - ESO**	11:45 - 11:55
11	AOB and Meeting Close **Claire Huxley - ESO**	11:55 - 12:10

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!)

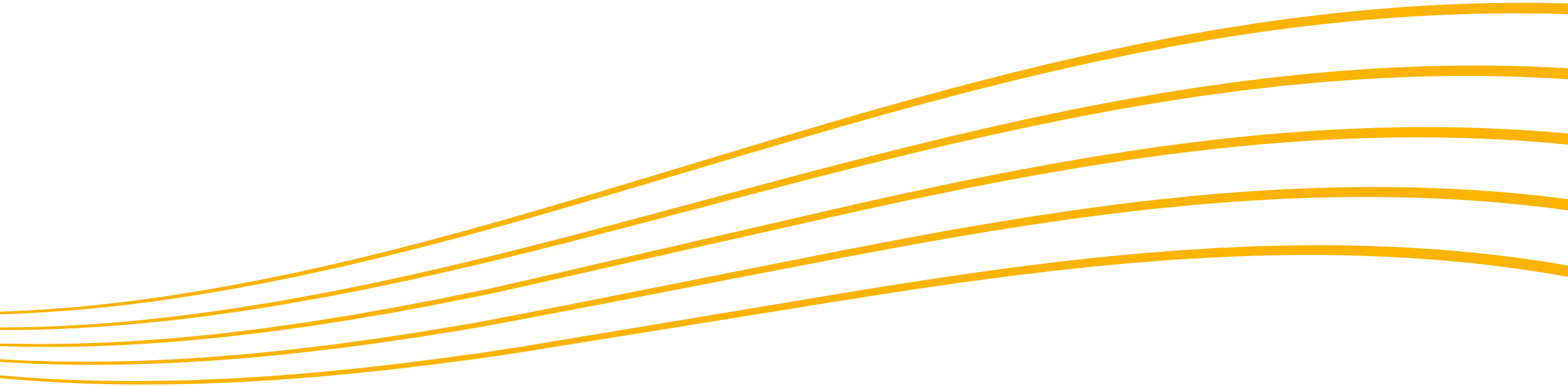
Expectations
Be respectful of each other's opinions and polite when providing feedback and asking questions
Contribute to the discussion
Language and Conduct to be consistent with the values of equality and diversity
Keep to agreed scope

Review of previous actions

ID	Month	Description	Owner	Notes	Target Date	Status
23-4	July 23	Process deep dive in relation to calculating TNUoS Expansion Constants data.	Nick Everitt		07/09/2023	Open
23-7	July 23	Update on CMP315/375 in relation to TNUoS Expansion Constants data	Claire Huxley		03/08/2023	Open
23-8	July 23	Detailed update on the TNUoS 10year projection	Nick Everitt		03/08/2023	Open

Code Administrator Update

Milly Lewis – Code Administrator ESO



Key Updates since last TCMF

New Modifications	• **CMP415 Amending the Fixed Price Period from 6 to 12 months** • **CMP417 Extending principles of CUSC Section 15 “User Commitment Methodology” to all Users**
Decisions	• **None**
Implementations	• **None**

Authority Expected Decision Date

Decisions Pending

Modification	Final Modification Report Received	Expected Decision Date
CMP288 'Explicit charging arrangements for customer delays and backfeeds'	10/08/2022	31/07/2023
CMP292 'Introducing a Section 8 cut-off date for changes to the Charging Methodologies'	16/08/2019	25/08/2023
CMP298 'Updating the Statement of Works process to facilitate aggregated assessment of relevant and collectively relevant embedded generation'	06/04/2022	29/09/2023
CMP331 'Option to replace generic Annual Load Factors (ALFs) with site specific ALFs'	12/07/2023	18/08/2023
CMP344 'Clarification of Transmission Licensee revenue recovery and the treatment of revenue adjustments in the Charging Methodology'	08/02/2023	29/09/2023
CMP376 'Inclusion of Queue Management process within the CUSC'	07/06/2023	15/09/2023
CMP398 'GC0156 Cost Recovery mechanism for CUSC Parties'	11/07/2023	06/10/2023
CMP412 'CMP398 Consequential Charging Modification'	11/07/2023	06/10/2023

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

Key Updates ahead of the next TCMF

August Consultations

- **CMP392** (Transparency and legal certainty as to the calculation of TNUoS in conformance with the Limiting Regulation) Code Administrator Consultation will run 04 August 2023 end **5pm 04 September 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) Code Administrator Consultations will run concurrently in August 2023
- **CMP413** (Rolling 10-year wider TNUoS generation tariffs) Workgroup Consultation will run 30 August 2023 end **5pm 20 September 2023**

Other

- **CMP330/CMP374** (Allowing new Transmission Connected parties to build Connection Assets greater than 2km in length & CMP374: Extending contestability for Transmission Connections) and **CMP414** (CMP330/CMP374 Consequential Modification) – Final Modification Reports to be submitted to Ofgem on 10 August 2023
- **CMP379** (Determining TNUoS demand zones for transmission - connected demand at sites with multiple Distribution Network Operators (DNOs)) Second Draft Final Modification Report will go to the August CUSC Panel.

Useful Links

For updates on all “live” Modifications please visit our “Modification Tracker” here

Ofgem’s expected decision date / date they intend to publish an impact assessment or consultation, for code modifications/proposals that are with them for decision is here

For summary of key decisions at latest Panel please click here

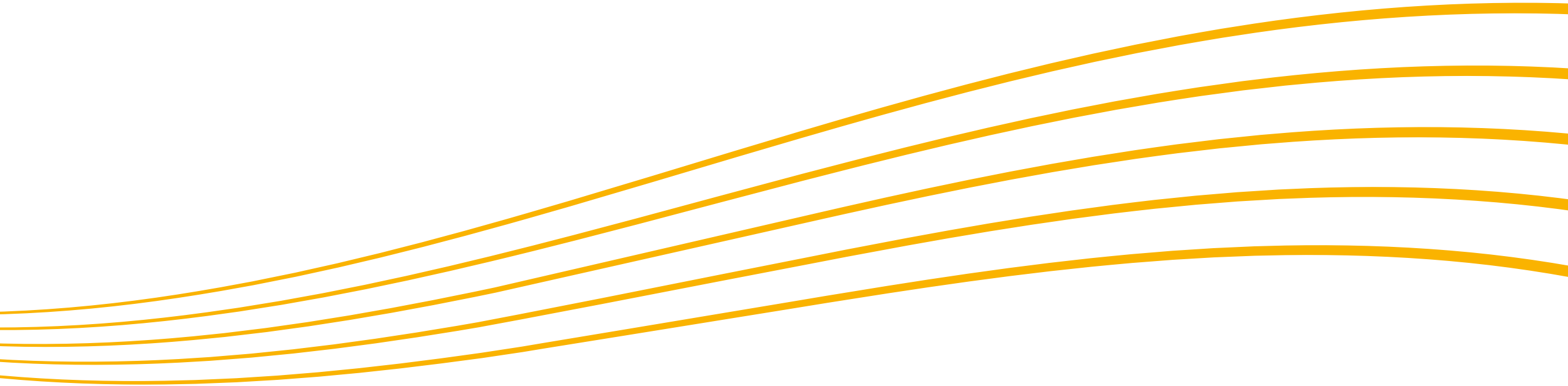
For current prioritisation stack please click here

CUSC 2023 - Panel dates

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

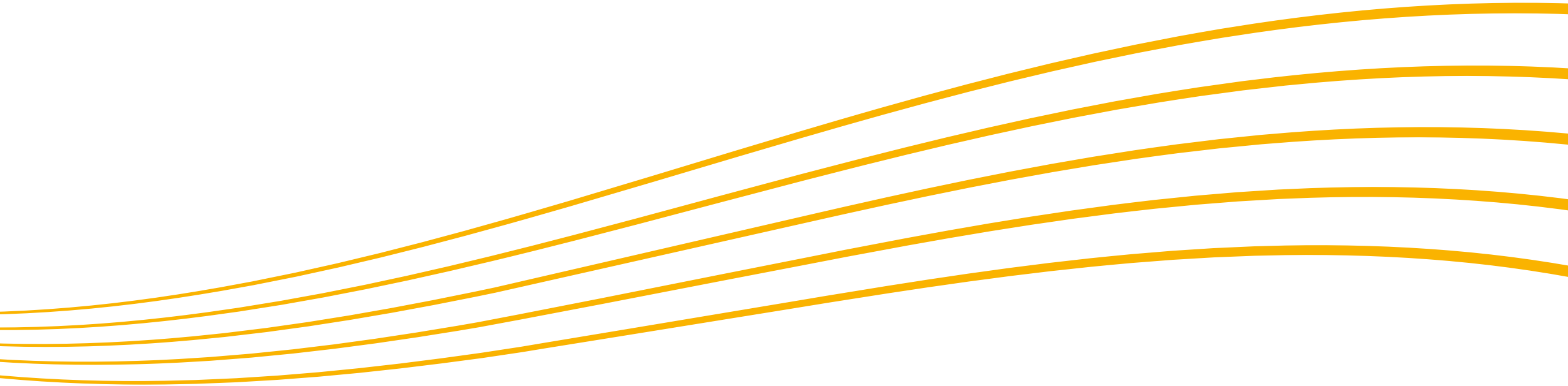
TNUoS Task Force verbal update

Paul Jones



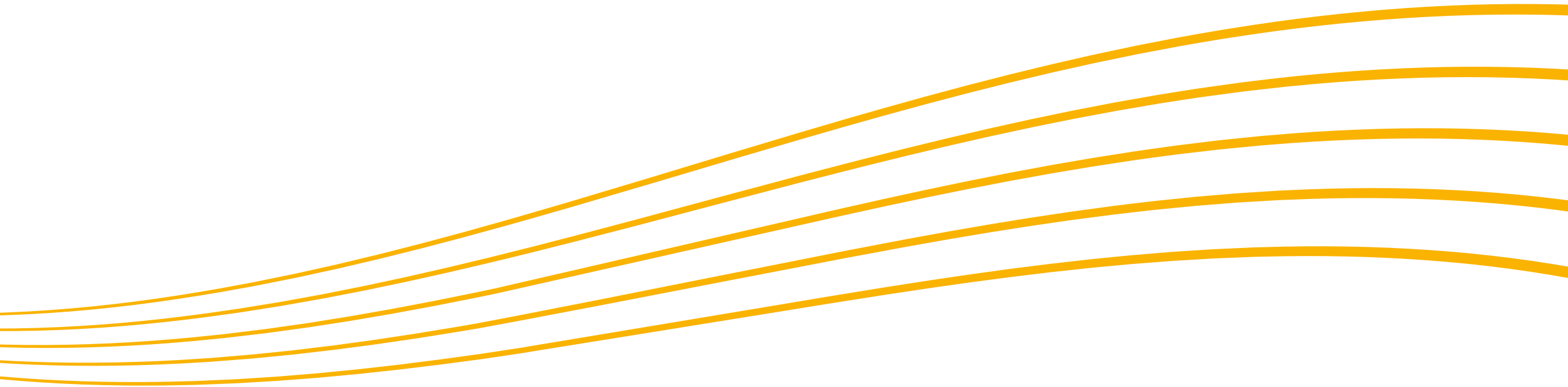
TCMF Enduring BSUoS subgroup verbal update

Alice Taylor - ESO



CISG Connection subgroup first workgroup verbal update

Alison Price and Joseph Henry - ESO



Control Room FAX Replacement

Jim Hunt / Bernie Dolan - ESO

August 2023

TCMF Update

ESO

Problem Statement : Summary

Overview

ESO currently use Fax machines (located in the Control rooms) to send and receive data from Primary and some secondary BMUs. Some of these data support critical functions such as System Restoration by transmitting data such as Unit Availability. The existing fax machines are ageing, hardware support contracts are ending (or have ended) and replacement parts are difficult to source. The paper output is also time-consuming to manage (file) and report on / audit.

Problem Statement

The Control rooms currently use fax machines to send and receive data from primary and secondary BMUs. The telecommunications network that the fax machines use (BT's PSTN) is due to be decommissioned at the end of 2025, leaving ESO with the only option of upgrading the fax machines to use digital lines (a solution that still does not address the ageing hardware / paper management workload issue) or finding a replacement for the services provided.

Recommended approach

Assess the viability of designing / building (or purchase) and an API-based, multi-user cloud-enabled platform that all Units can use to send and receive data. The use of APIs enables the existing software vendors to build integrations into their software platform thus minimising the impact to exist Users and enables new market participants to more easily engage with ESO. The adoption of an API-based architecture also aligns with the ESO Architecture strategy.
Note that this functionality will be used across multiple industry partners who have varying degrees of technical capabilities. Engagement with the User community will be essential to ensure the solution delivered meets their (and ESOs) needs.

Operational Considerations

- The fax machines provide the following functionality :
- Transmission of data from BMUs that are critical to system restoration planning e.g. Notices of availability
- Receipt of transmissions (for all market participants)
- An audit trail
- Provision of functionality that is not available in BM
- Note : Faxes are *not* used during System Restoration events: this is initially conducted using phone lines to instruct BMUs and establish the required power islands in line with the System Restoration Plan

- **Note** : The Control Room users need to act on data received and confirm that it has been received e.g. Unit availability data used for System Restoration Planning (BlackStart); this requires an async messaging capability and access to the platform and data from within the CNI control room

Design standards

The new platform / services must provide the following :

- A standards-based architecture : e.g. an API-based platform
- Able to be adopted / integrated by other Industry service providers (open standard)
- A means of providing access to all (current and future) market participants in a way that is affordable and does not pose as a barrier to market entry (IP capable)
- Reliable (at least 99.99% available)
- Secure ; use of encryption
- Provide stringent identify and access management
- Assured : Provides non-repudiation / delivery assurance features
- Extensible and Scalable : can be extended to meet future needs

Control Room interaction

Control Room User Interaction : The Control Room users will need to review and approve certain transactions that are being sent electronically (what is termed Priority 1 faxes); meaning that any 'portal' that gathers these data will need to have a near-synchronous presentation of data to the CNI environment. This will require careful consideration of secure access to CNI or presentation of the data to the Control Room via the non-CNI business network (noting the constraint this imposes on data consumption by Critical National Infrastructure (CNI) systems.

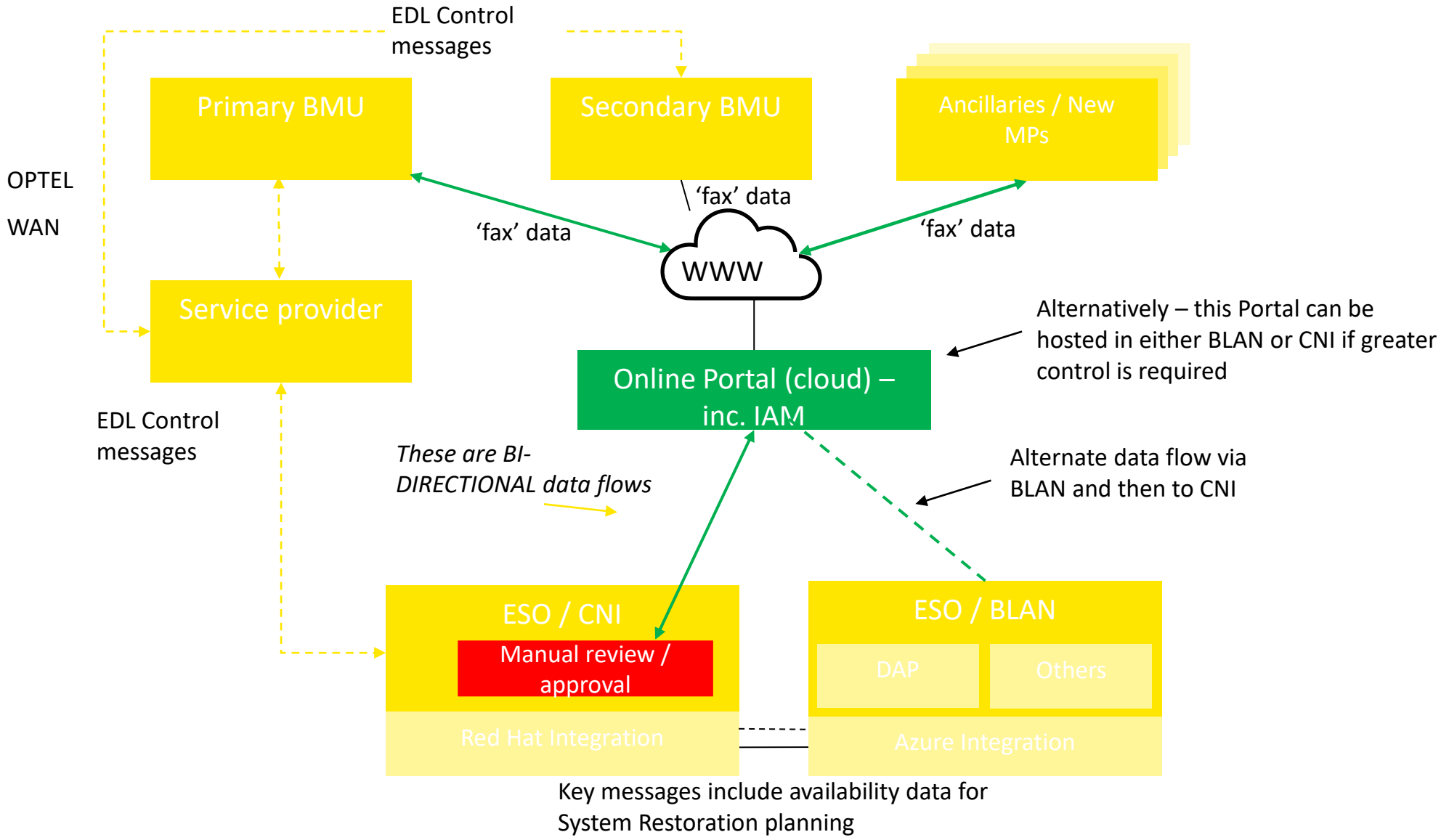
Strategic Options

Option Name	Description	Advantages	Disadvantages
Do nothing	Leave the current platform in place; no adaptations	Minimal *initial* cost, little change	Will cease to function after PSTN network decommissioned in 2025. Significant disruption to ESO market, significant threat to Grid stability and system restoration capabilities. Regulatory breach. **Significant** remediation costs and fines.
Retain and update the fax machines to use digital telco lines	Update fax machines to use digital transceivers	Enables fax machines to continue to be used. Virtually no disruption to existing Users. Low cost. Enables us to focus on delivery of OBP and NCMS whilst maintaining the fax service	Management of paper output still resource intensive. Presents a barrier to new market participants.
Hybrid : Extend EDT Msgs for BMUs and build / buy an API-enabled Portal for all other users (segmented user base)	Create new services in EDT/EDL for Primary BMUs and create a Web portal for Secondary BMUs and ancillaries,	Leverages investment in EDL/EDT Creates a modern, scalable online portal which will facilitate the easy adoption of ESO services for new market entrants	Retains and extends the use of an obsolete protocol (FTP), Duplicates functionality across disparate platforms Connections into Warwick datacentre will need to be removed and re-established elsewhere; added complexity for FSO separation.
Expand on *existing* web-enabled platforms such as WAAPI or Single Markets Platform	Develop WAAPI further to include the messages currently transmitted by faxes.	Build once, re-use many times Native API compliance ; easier adoption by new Market entrants No NG Datacentre dependency / future migration. No FSO-specific complexity. Could leverage the DEP expertise. Provides single source for audit purposes	Needs to be built from scratch Availability (RTO/RPO) capabilities need to be evaluated to ensure a fit with ESO's needs

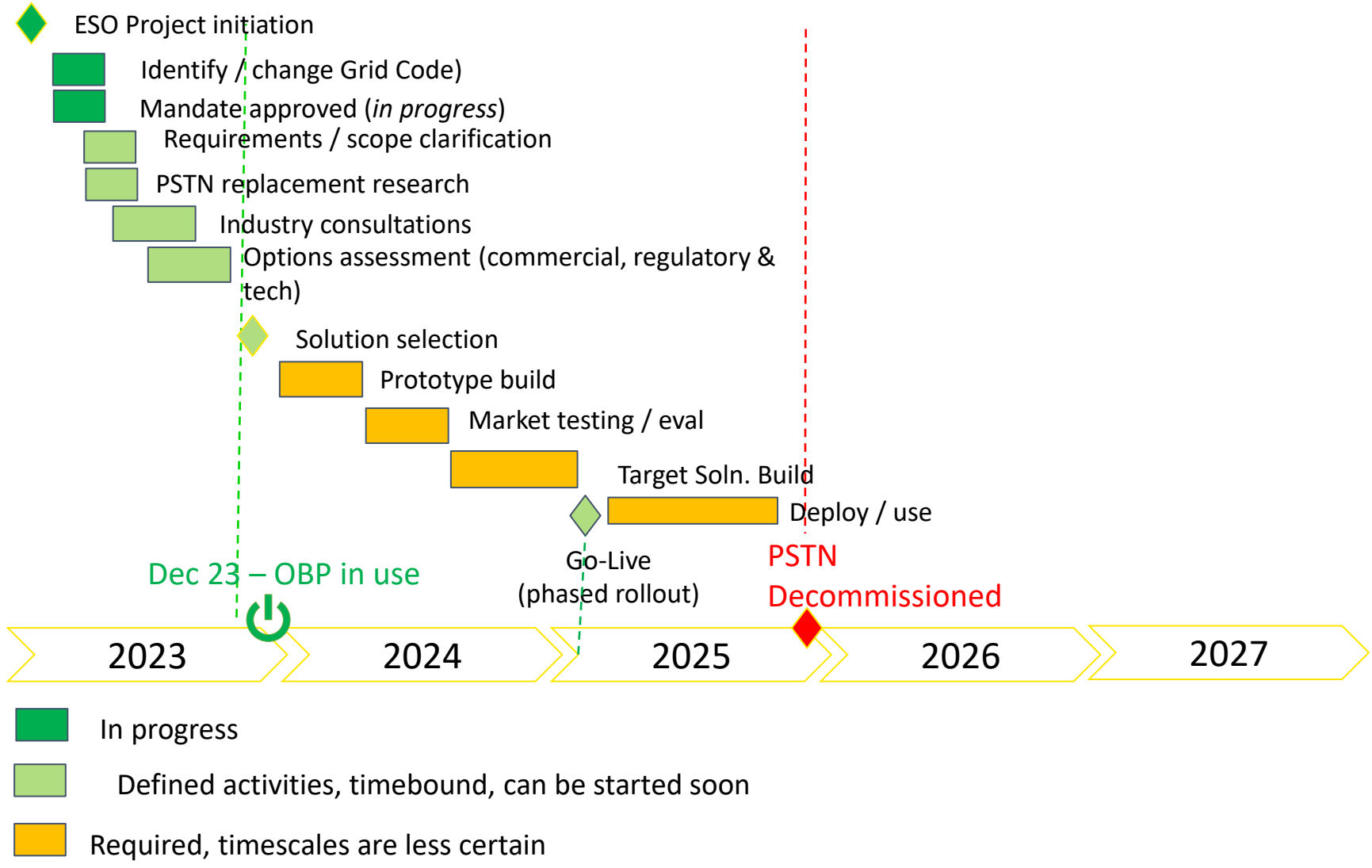
Strategic options (cont)

Technology	Description	Advantages	Disadvantages
COTS 'Trading' platform	Use a COTS trading platform such as Bloomberg's 'Terminal' platform	Existing platform Developed with non-repudiation by default (useful for Acks of messages) Generally designed to be secure and support high-volumes of messages	3rd Party operation (security concerns) ? Ability to be customised to meet ESOs requirements) Licence model – per user based ($20K per user) Requires Bloomberg-supplied hardware, potentially acting as barrier for wide-spread user adoption (especially the smaller, market entry users)

Potential High-level logical Architecture



Indicative Transitional Timelines



Notes :

- Timescales are draft, more detailed planning exercise required.
- ISDN / PSTN activity included due to dependency overlap with faxes
- Beyond 2026 it is possible that digital adapters can be used to extend the life of fax machines but the devices themselves are becoming more difficult to maintain / keep running

Supporting Information

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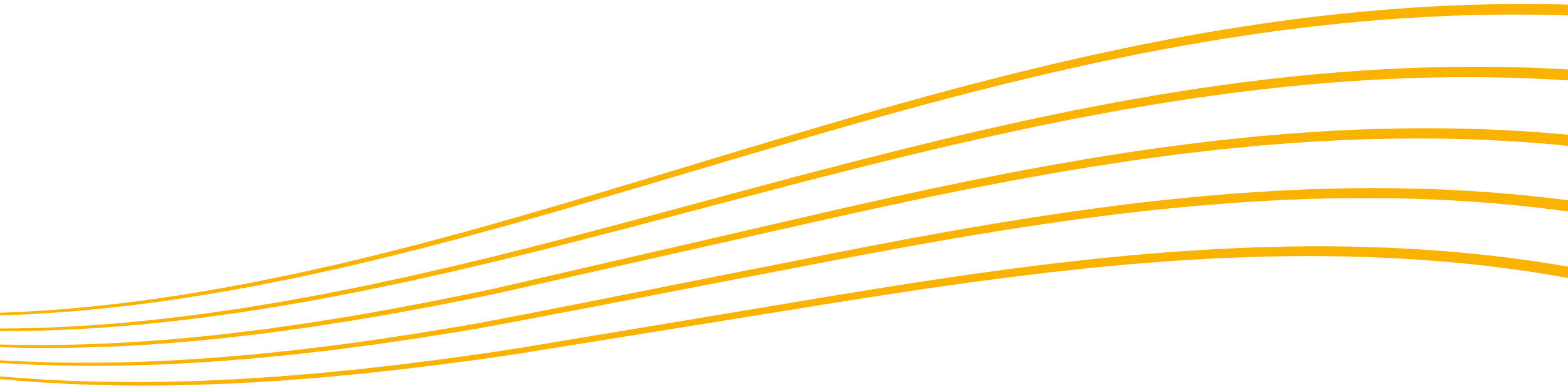
Availability measures : future platform

Service Criticality	Critical
Service Availability What hours do the business require the solution to be available	24 / 7
Recovery Time Objective [RTO] In the event of an outage, how long can the business cope without this system	12 hours (based on Primary BMUs with frequency monitoring capabilities supported by phone lines for instructions / critical updates)
Recovery Point Objective [RPO] On restoration of service, what amount of data loss can be tolerated?	TBD (likely to be <1 Day)

Note that in the event the faxes are not available, critical instructions can still be sent using EDL and phones (via Vodafone network) can be used for additional comms)

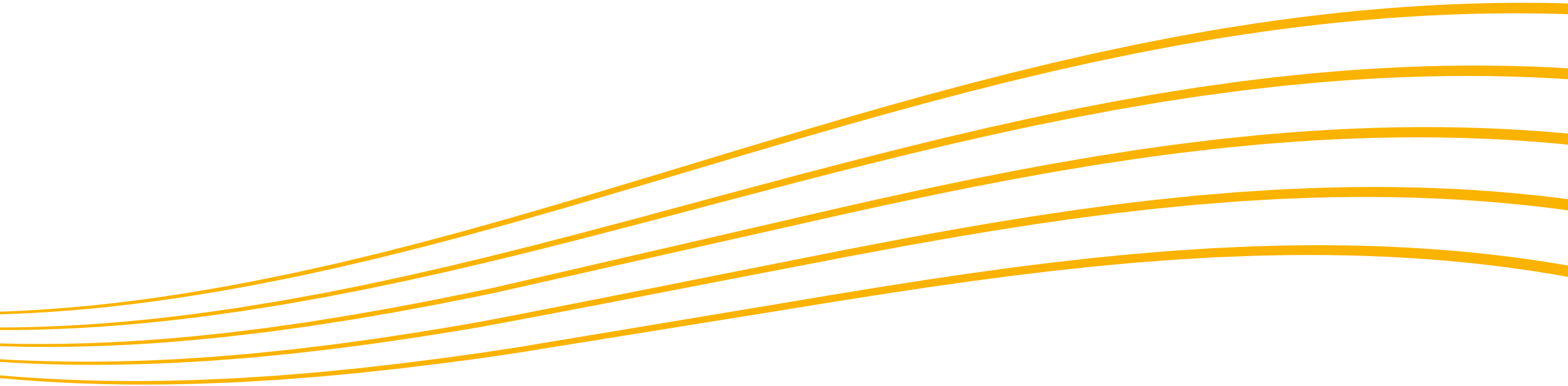
ESO Deck Template / Illustrations

Comfort Break



Detailed update on the TNUoS 10year projection

Nick Everitt - ESO



10-year TNUoS tariff projection

Progress so far

Target publishing date – 31st August.
We aim to publish the tariff report and the associated data tables.
We will not circulate the DCLF-ICRP model, due to the data we use on generation background and circuit costs.

10-year TNUoS tariff projection

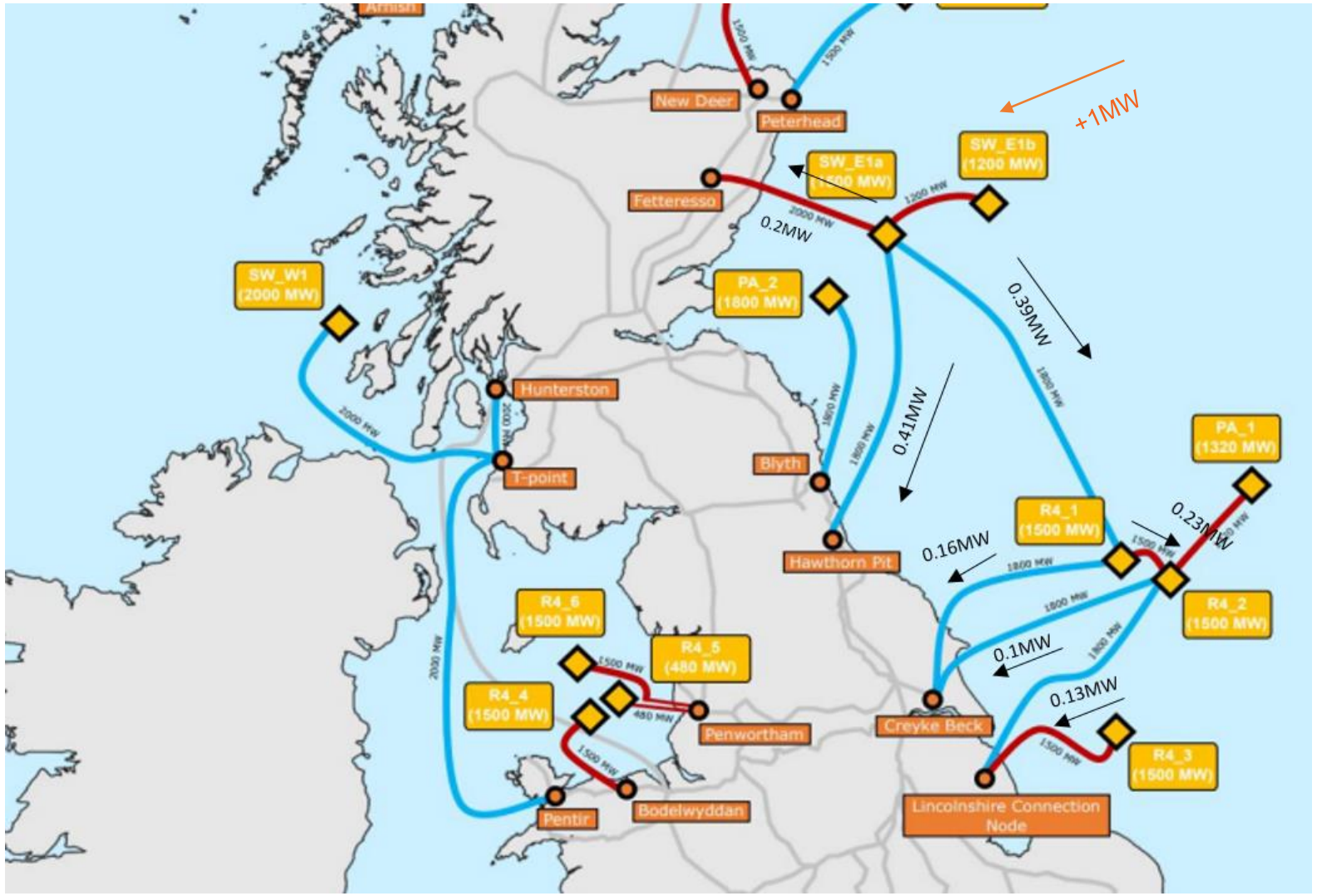
Further details

Obtaining data	Building the models and running analysis
Generation (FES2023)	Based on FES “best view” (LW), not “contractual background”. We are also considering scenario sensitivities
Demand (FES2023)	
Include HND circuits and ASTI HVDCs	Modelling meshed HVDC network (HND)*
Revenue**	
Other data (TDR site counts and consumptions, onshore local circuits modelling etc) – retain the 2028/29 baseline	

* Following the discussion on June TCMF, the option we took forward is option 1 (see the next slide)

** Revenue – high level assumptions associated with ASTI spending and Future OFTO revenue

Option 1 – 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

OTNR Update

Overview of Proposed CUSC modification:

A review of the Generation Zoning Methodology to Incorporate Offshore Assets

Nitin Prajapati - ESO

nationalgridESO

CUSC Modification Proposal Overview

A Review of the Generation Zoning Methodology to Incorporate Offshore Assets

Background and Methodology Challenge:

- There are currently 27 Generation zones which provide a level of tariff stability and balance the nodal marginal costs fluctuation derived from locational signals.
- The offshore generators and offshore assets in the Holistic Network Design (HND) fall outside the existing 27 generation zones and therefore the CUSC is not clear how the Wider tariff would be applied to offshore generators that are connected via non radial offshore transmission.
- Linked to this is the decision on CMP324/25 which advised:
    - *'Given the significant interaction between this modification (CMP325/4) and CMP353, and any future reform to the Expansion Constant (EC) methodology, we would expect NGESO to revisit the issue of rezoning alongside the development of any future change to the expansion constant.'*
- The EC has a material bearing on the marginal costs at each node, therefore a key factor in determination of generation zones. The EC is currently being reviewed by CMP315/375, so it is an appropriate time review the zoning methodology along side the application of the wider tariff for offshore generators.
- This ensures we consider onshore and offshore zones in one review, noting the interactions and dependencies, to help develop a holistic solution.

CUSC Modification Proposal Overview

Overarching Principle

It important to build on the existing principles outlined in section 14.15 if CUSC to provide **locational signals** '*to reflect the costs of capital investment in, and the maintenance and operation of a transmission system*' to develop new offshore zones/s for assets in the Holistic Network Design (HND).

Approach to the Solution

- Finding a balance between cost reflectivity, predictability and stability. Locational signals help provide cost reflectivity, and reviewing the number of nodes in a zone will help provide stability and predictability in the long term.
- Utilising the operational boundaries as a basis to determine the generation zones to help provide a platform for a balanced impact across all generators (onshore and offshore) of the network.
- Determine the methodology to apply resistance to DC circuits, with consideration of using the current approach utilised for HVDC sub-sea bootstraps.

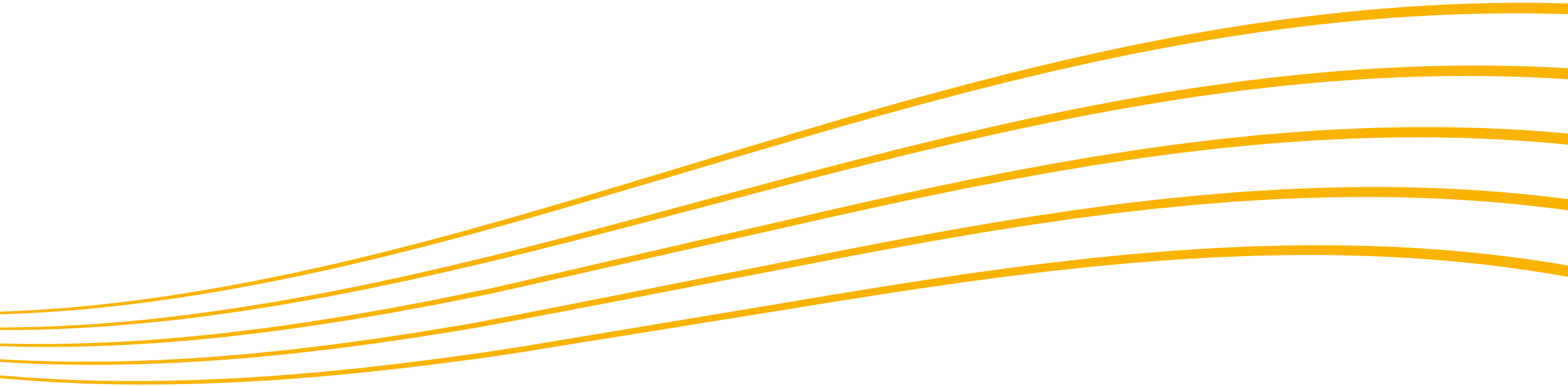
Finally, the solution should also consider the outcome of the EC review.

Implementation Approach/Considerations

- Inclusion of HND Wider Circuits within the Transport and Tariff model.
- Level of complexity of amending the Transport and Tariff model will be determined by the approach outlined above.

TCMF Feedback – MOVED TO SEPTEMBER 2023 TCMF

Claire Huxley - ESO



TCMF feedback

August 2023

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Feedback

We want to make sure that TCMF is useful to as many of you as possible. With that in mind, we recently sent out a survey to understand what works well and where it could be improved.

7 responses

Average score of 8.0 on a scale of 1-10

What should TCMF continue doing?

Updates on proposed mods, current status of live mods, info about billing/tariff issues mid-year

Carry on as is! I think some of the members' expectations are wrong, as the 'real' action on CUSC mods or major reforms, eg connections reform, does and should take place in their respective fora. TCMF is and should be a light touch way of industry keeping up with and being able to find out a bit more about the massive breadth of regulatory flux that will always be taking place at any one time.

Summarising relevant activity in the transmission charging space and providing a forum for discussion and testing new reform proposals.

bringing key industry changes to people's attention; providing a space for 'blue sky' thinking

Provide early sighting of actual and potential significant industry developments, not necessarily whole charging based. (But most have charging implications anyway)

allowing attendees to provide questions / comments so that it is a 'two way' discussion

Meeting monthly, providing an overview of CUSC charging mods and wider reform, talking about transmission charging, encouraging discussion in the meeting

What should TCMF stop doing?

Underestimating how much discussion or debate there will be on certain topics and then having to curtail important discussions. Also not sharing slides, just having a one-slide placeholder/title for "verbal updates" which can't then be referenced later

I think it is maybe important to set out some terms of reference and then reminding participants of these when they stray into detailed and strong opinions about things and try to use TCMF to debate things which are being considered properly elsewhere, eg in CUSC mod working group

Nothing

curtailing useful discussion

its ok

Using acronyms without explaining them, perhaps not cover connections reform in any detail (could signpost the CISG), overpopulating the agenda so that there is no time to discuss

Feedback

What amendments should be made to TCMF?

Shorten the code admin update, get an ofgem update on the agenda, be more realistic about the timing

None

As new attendee pointing to where background and learning can be found.

extend session length a little, introduce longer comfort break to allow this

Since the ESO has a central view on the industry, perhaps "canvass" the TCMF with suggestions for "TCMF+2 months" to gauge whether there is any interest. Always far easier to respond than initiate

What should TCMF start doing?

See previous responses

Teach in sessions on the why behind the what I of change initiatives. Help me get up to speed on key issues and processes.

Link Government policy back to implications for charging e.g. net zero = more low carbon=more offshore. Does the charging framework we have now best promote this? If not how might it be reformed? As a starter, the major reforms offshore will impact onshore charging - but many onshore users do not understand how - perhaps a high level overview?

Slow things down a bit, provide a micro-summary and maybe some context when referring to a CMP number, consider using more frequent real-time mini-polls (e.g. Menti) to get feedback from attendees on understanding of presentations and comments on content

Any other comments?

reinstate hybrid meetings - in-person chats are really valuable

I think people should be a bit more gracious about the fact that many of you make yourselves available to present and take questions!

Thanks for the time and effort to facilitate these sessions

It is a very useful, responsive and flexible forum. The use of "sub groups" which do not have the tight formality of work groups is a welcome development. However, care needs to be taken regarding the way in which "output" from these initiatives is captured by established processes and communicated to the whole user base.

TCMF is an extremely useful forum but still has opportunities for improvement

TCMF feedback

No	You said	Suggestion
1	Provide sufficient time for adequate discussion	We try to pre-empt the time allocation appropriately and on occasion we do get this wrong. Where this has occurred, we provide further time in subsequent forums, take questions offline and present this back, or try to provide time in AOB. We will continue to do this, and welcome feedback when we haven't met your expectations.
2	Meeting invite is till 1pm, the agenda does not normally run til this time so it creates confusion.	Meeting invites are sent out for the year ahead. This far in advance it is not possible to ascertain the agenda items and timings needed. We will update the calendar invite to align with the agenda timing when the agenda gets finalised.
3	The meeting has no breaks and it's rather long	We have introduced a comfort break after an hour of content, to allow for a rest.
4	Deepdives of topics would be useful	We want to make sure the content is appropriate for all attendees, and that there is sufficient time for all agenda items. We welcome requests for deepdives, and would ask that this is raised in AOB so it can be captured. One request is for offshore vs. on-shore charging – the has been passed onto the team and will be included in the August agenda.
5	Hybrid meetings would be welcomed	Quarterly hybrid meeting – suggest between Warwick, Wokingham, London & Glasgow (once locations have been confirmed).
6	Develop & refresh Terms of Reference	Agreed – will add this to the action tracker and share round in September.
7	Continue to use sub-groups as a way of deep-diving an issue	We agree that sub-groups are a useful way to develop ideas around a particular issue. We also agree that there needs to be a clear link to governance.
8	Simplify and explain context of updates	We will ask presenters to avoid using acronyms, and the Chair will remind people at the beginning of this. For existing modifications/projects, presenters will provide a short overview to ensure the context is clear, and provide links to where existing information can be found.
9	Consider more frequent, real-time feedback	We can implement a Microsoft form to gather feedback at the end of each TCMF, and welcome use of the chat function if there is not space to contribute verbally. As Chair, managing verbal conversations and contributions in the chat function is currently achievable.

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AOB & Close