

GC0117: Improving transparency and consistency of access arrangements across GB by the creation of a pan-GB commonality of Power Station requirements

22 November 2023

Online Meeting via Teams

WELCOME



Agenda

Topics to be discussed

Welcome

Objectives and timeline

Actions review

Primacy Rules between the DNOs and ESO

Legal Text

WAGCM Update

Workgroup Report

Terms of Reference Review

Workgroup Vote

Any Other Business

Next Steps

Workgroup Membership

Role	Name	Company
Proposer	Garth Graham	SSE
Workgroup Member	Mike Kay	Electricity North West
Workgroup Member	Richard Woodward	National Grid Electricity Transmission (NGET)
Workgroup Member	Chris Marsland	AMPS
Workgroup Member	Isaac Gutierrez	Scottish Power Renewables
Workgroup Member	Graeme Vincent	SP Energy Networks
Workgroup Member	Alan Creighton	Northern Powergrid
Workgroup Member	Richard Wilson	UK Power Networks
Work Group Member	Paul Youngman	Drax
Work Group Member	Antony Johnson	National Grid ESO
Workgroup Member	John Lucas	Elexon
Workgroup Member	Tim Ellingham	RWE
Workgroup Member	Andrew Akani	Western Power Distribution
Workgroup Member	Roddy Wilson	SHE Transmission
ESO Rep	David Halford	NGESO

Code Modification Process Overview



Expectations of a Workgroup Member

Contribute to the discussion

Be respectful of each other's opinions

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

Do not share commercially sensitive information

Be prepared - Review Papers and Reports ahead of meetings

Complete actions in a timely manner

Keep to agreed scope

Your Roles

Help refine/develop the solution(s)

Bring forward alternatives as early as possible

Vote on whether or not to proceed with requests for Alternatives

Vote on whether the solution(s) better facilitate the Code Objectives

Terms of Reference

Workgroup Term of Reference

- a) Implementation and costs;
- b) Review draft legal text should it have been provided. If legal text is not submitted within the Grid Code Modification Proposal the Workgroup should be instructed to assist in the developing of the legal text;
- c) Consider whether any further Industry experts or stakeholders should be invited to participate within the Workgroup to ensure that all potentially affected stakeholders have the opportunity to be represented in the Workgroup. Demonstrate what has been done to cover this clearly in the report
- d) Consider EBR implications
- e) The current transmission and generation characteristics in Scotland compared to those in England and Wales and whether the rationale for the thresholds being set at the current levels still applies given the current and projected generation composition and transmission infrastructure;
- f) Cross code impacts (BSC, CUSC and DCode) and impact on EBR;
- g) Consider any emerging thinking from the Open Network project;
- h) Any interaction with generator licensing thresholds or requirements;
- i) The impacts for stakeholders including NGESO, iDNOs, TOs, DNOs and generators;
- j) Implications for new connectees in relation to data exchange, planning, market engagement and any other areas of change;
- k) The implications associated with implementing any changes retrospectively so that they apply to existing connectees rather than just for new connectees; and
- l) The implementation options together with the associated costs and benefits.

Timeline for GC0117

Stage	Dates
Workgroup 22	22/11/2023
Workgroup Report to Panel	06/12/2023
Post Workgroups	
Code Administrator Consultation	19/12/2023 - 19/01/2024
Draft Final Modification Report to Panel	14/02/2024
Final Modification Report to Panel to check Votes	27/02/2024
Final Modification to Ofgem / Appeals Window opened	07/03/2024
Implementation Date	TBC

Action Review

Action	WG	Owner	Action	Comment	Due by	Status
70	WG16	DD/DH	Investigate potential cost impact on industry from this modification by investigating the potential number of Generators that could fall into the ‘Large’ threshold going forwards as a result of the Original Proposal.	Under discussion with FES team	ASAP	Open
90	WG20	GV	Investigate how GEMS works in South Scotland	NA	WG21	Open
95	WG20	ML	Reach out to Open Networks Team regarding workplan		WG21	Proposed to close- no further work completed since February 2022
96	WG21	CM/JB	Review spreadsheet and share any feedback	NA	31/10/23	Proposed to close – additional feedback received
97	WG21	RW	Write section on Connections Reform for Workgroup Report	NA	20/10/22	Open
98	WG21	DH	Provide summary of information regarding consequential modifications and the decision made to delay them until after an Ofgem decision on GC0117	NA	20/10/22	Proposed to close - included in Workgroup Report
99	WG21	TJ	Investigate implication on categorisation of High Priority SGU	Appendix B of the System Restoration Plan covers Large Power Stations and also in OC6.1.6. In summary this specifies that Large Power Station sites should be protected from disconnection. Note also that under the EU Emergency and Restoration Code Article 15 (7(b)) requires that the disconnection of power generating modules, especially from those providing inertia should be protected. As part of the GC0148 (EU Emergency and Restoration) we discussed this and I even developed some wording but the DNO's were in agreement that the current low frequency demand disconnection scheme already met this requirement. It is covered in the GC0148 report	20/10/22	Proposed to close -, verbal update to be provided in meeting
100	WG21	ML	Capture Workgroup discussions in Workgroup Report	NA	20/10/22	Proposed to close - included in Workgroup Report
101	WG21	TJ	Review legal text prior to next Workgroup	NA	20/10/22	Proposed to close as issued 07/11/2023 and part of papers
102	WG21	TJ	Investigate the interactions between Embedded Power Stations in the BM behind an Active Network Management (ANM) Schemes as compared with Embedded Power Stations not in the BM and behind an ANM Scheme – Appendix G	NA	20/10/22	Proposed to close - Stuart to provide update in meeting

Update to GC0117 Group Primacy Rules & DER Visibility

November 2023
Stuart Fowler (ESO)

Agenda

- Progress and key messages
- Increment 2- Plan
- Data Exchange
- Use Case Prioritisation proposals
- Expected evolution of the process
- DER Visibility

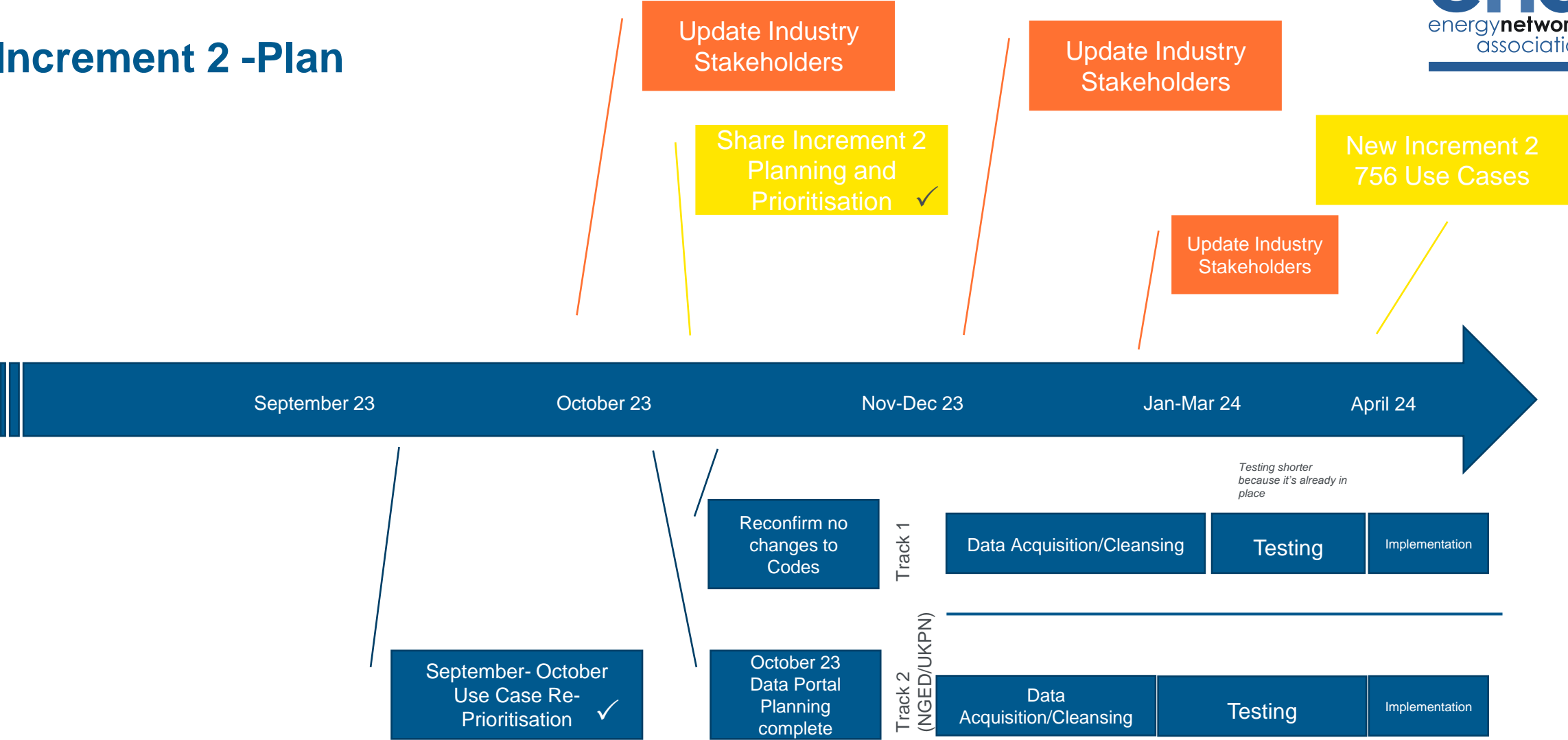
Key Messages

- Focus over last 6 months has been to try and increase the pace (there are 2,646 Use Cases)
- Focussed on enabling data and processes first and the Use Cases second
- A lot of work has been needed to determine the right approach to this
- However, we are starting to see some light at the end of the tunnel
- Work though is still needed within both ESO and DNO's but the intention is to move first with those DNO's that can use technical solutions to data exchange and allow others to catch up when needed
- Still need to ensure that as we increment up that we do not fall foul of any Legal/Codification or privacy challenges but this is factored into the planning that we have done
- Keen to explore how we change the messaging and planning to focus on flex coordination first and then let primacy rules come out of being coordinated
- DER Visibility is essential to Coordination and Primacy

Increment 2 -Plan

External

Internal



Data Exchange

Enabling Static Data

LV Connectivity Model (would outages be applied in real time? [switch positions in real time/status of breakers in real time] [Static-Semi])
 Embedded Register (1MW+) [Static-Semi]- this will contain Postcode, GSP, Address data and other data
 MPAN to BMU ID referencing [Static]
 LMS/ANM capacity and associated provisions (inc. ANM Zone & other flexible connections) [Real time status]
 Metering data- ? we need to explore the benefits of sharing this

ESO Data

- List of Aggregated Units
- Completion of mapping exercise
- Electrical Location (GSP?)
- Available capacity of ECR
- Our products and services should have real time information (like MWD) to provide visibility through control

OS Co-ordinates - Site, and connection to DNO network
 Postcode - Site, and registered office

RDP

Data	Source	Destination	Timescale
Individual DER metering data	UKPN	ESO	Real-time
DER unavailability report	UKPN	ESO	Weekly (as minimum)
DER unavailability signal	UKPN	ESO	Real-time
Data relating to potential merit order of DER dispatch if initiated / required	ESO	UKPN	Daily
Indication of which constraints could be activated for the following day	ESO	UKPN	Daily
Updated view of constraints that could be activated	ESO	UKPN	Intra-day
Post event data to support WS2 analysis including (but not limited to) DER bids, Data for all parties signed up to ESO services, Transmission Generation data, Interconnector	ESO	UKPN	Post-event

ANM Flexible Connections - Aggregate d ESO data

Process (WPA WSA-PS)	Service/ Data	Data to Share (ENA WSA-PS)
3.1 DNO Forecast	• DSO Flexibility Services (AB) • Forecasted ANM action/ catalyst • DNO planned outages	Forecasted Risk of conflict
3.2 ESO Forecast	• TCM (RDP) DER participants	TCM participants TCM Price - If static price is agreed - N/A
2 ESO Conflict Assessment	• ESO planned outages	Forecasted CM2 requirement
3.1 TCM Scheduling Process	• MW dispatch service	

ON21-WS1A-P5 Primary Rules for Service Conflicts (7) - Saved to this PC

MWD

RDP MW dispatch project scoping

Data ID	Data Group	Description	Source	Destination	Use Cases*	Benefit/ Justification	Level of complexity/ Effort (UKPN Data)	Functions	Workstream	Commentary on what can be achieved	Current status	Level	Template	Exchange frequency	Data Source	Format	Type	Additional background	Business requirement
U00	MW Dispatch individual	Forecasted flexible (MW dispatch) individual DER output per technology/fuel type, for example, wind, solar, biomass, hydro output etc.	UKPN	ESO				SCHEDULED ING & DISPATCH H	WS3	Aggregated data can be shared day ahead or intra-day - frequency as defined by this data For MVP approach, this is not essential, this can be further explored in WS3.		individual	TBC at design stage	TBC at design stage	TBC at design stage	TBC			
01	ALL - Aggregate d GSP data	Total aggregated DER output per technology/fuel type, for example, wind, solar, biomass, hydro output etc.	UKPN	ESO				SCHEDULED ING & DISPATCH H	WS3	There is resource impact for this data For MVP approach, this is not essential, this can be further explored in WS3.		aggregated	TBC	TBC	TBC at design stage	TBC			
02		Flexible (MW dispatch) aggregated DER output per technology/fuel type, for example, wind, solar, biomass, hydro output etc.	UKPN	ESO				SCHEDULED ING & DISPATCH H	WS3	There is resource impact for this data For MVP approach, this is not essential, this can be further explored in WS3.		aggregated	TBC	TBC	TBC at design stage	TBC			
03		Non flexible aggregated DER output per technology/fuel type, for example, wind, solar, biomass, hydro output etc.	UKPN	ESO				SCHEDULED ING & DISPATCH H	WS3	There is resource impact for this data For MVP approach, this is not essential, this can be further explored in WS3.		aggregated	TBC	TBC	TBC at design stage	TBC			
04		DER - MW available for arming (MW available to be dispatched for MW dispatch services)	UKPN	ESO				SCHEDULED ING & DISPATCH H	WS1	This should be available assuming this would be the sum of individual DER MW/ As per data ID ESO MW arm is not required for RDP (to be removed)		aggregated	Intra-day	TBC at design stage	TBC at design stage	TBC			
05		DER - MW arming	UKPN	ESO				SCHEDULED ING & DISPATCH H	N/A	Generated as part of MW dispatch TBC in design stage		aggregated	N/A	N/A	N/A				
06	MW Dispatch - Aggregate d ESO data	DER - MW curtailed	UKPN	ESO				SCHEDULED ING & DISPATCH H	WS1	Generated as part of MW dispatch TBC in design stage		aggregated	Near Real-time	Report by exception	TED				
07		DER - installed capacity, current max available	UKPN	ESO				SCHEDULED ING & DISPATCH H	WS3	If individual DER MW/ availability data (U-00) is made available, this will not be required for MVP.		aggregated	TBC	TBC	TED				
08		Total ANM Flex Connections Generation	UKPN	ESO				SCHEDULED ING & DISPATCH H	WS3	This can be further explored in this is not essential for MVP scope.		aggregated	TBC	TBC	TED				
09	ANM Flexible Connections - Aggregate d ESO data	Total curtailed ANM Flex Connections Generation	UKPN	ESO				SCHEDULED ING & DISPATCH H	WS3	This can be further explored in this is not essential for MVP scope.		aggregated	TBC	TBC	TED				
10		Total installed capacity	UKPN	ESO				SCHEDULED ING & DISPATCH H	WS3	This can be further explored in this is not essential for MVP scope.		aggregated	TBC	TBC	TED				
11			UKPN	ESO				SCHEDULED ING & DISPATCH H	WS3	Data available on UKPN website/portal (ECR report LTDS is permission and week 24)		aggregated	Report on timescale	Monthly update/ Annual report	- ECR report - LTDS (open data portal) - V2M/MSD submission				

Volume Procured Likelihood of Conflict Enabling Data- ESO View UKPN RDP UKPN MWD

Sample Data Exchange

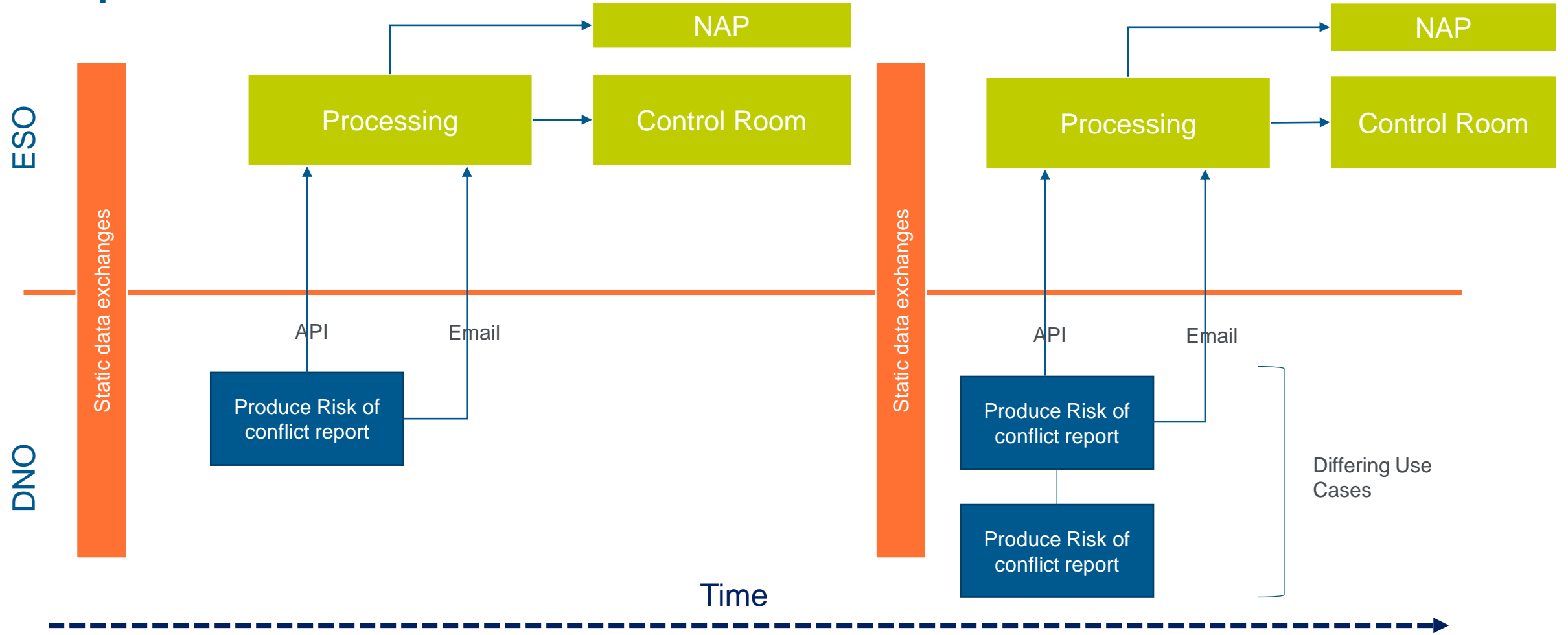
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1 Data Group	Description	Source	Destination	Priority
2 ESO SCADA data (ICCP)	Analogue and Digital signals (Refer to ICCP mapping list)	ESO	DNO	
3 ESO outage data	Planned outage data	ESO	DNO	
4 ESO outage data	Un-planned outage data	ESO	DNO	
5 Transmission				
6 Generation data	Individual generation metering data (that impact relevant areas)	ESO	DNO	
7 MW Dispatch	MW available for arming (Aggregated MW available to be dispatched for MW dispatch services)	ESO	DNO	
8 MW Dispatch	MW armed	ESO	DNO	
9 MW Dispatch	MW dispatched	ESO	DNO	
10 Data for all parties signed up to ancillary services/BM actions	Contracted volume and operational profile of all parties signed up to these services for RDP regions, Duration of contracts and their types, Availability declaration (MWs contracted) from all parties signed up to provide these services, or forecast availability according to ESO's modelling, Dispatch timelines of these services, or scheduling timeline (operational windows), Dispatch instructions, Location of relevant Transmission constraints	ESO	DNO	
11 Data for all parties signed up to Fast Reserve services	Contracted volume and operational profile of all parties signed up to these services for RDP regions, Duration of contracts and their types, Availability declaration (MWs contracted) from all parties signed up to provide these services, or forecast availability according to ESO's modelling, Dispatch timelines of these services, or scheduling timeline (operational windows), Dispatch instructions, Location of relevant Transmission constraints	ESO	DNO	
12 Data for all parties signed up to STOR services	Contracted volume and operational profile of all parties signed up to these services for RDP regions, Duration of contracts and their types, Availability declaration (MWs contracted) from all parties signed up to provide these services, or forecast availability according to ESO's modelling, Dispatch timelines of these services, or scheduling timeline (operational windows), Dispatch instructions, Location of relevant Transmission constraints	ESO	DNO	
13 Data for all parties	Contracted volume and operational profile of all parties signed up to these services for RDP regions, Duration of contracts and their types, Availability declaration (MWs contracted) from all parties signed up to provide these services, or forecast availability according to ESO's modelling, Dispatch timelines of these services, or scheduling timeline (operational windows), Dispatch instructions, Location of relevant Transmission constraints			

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A	B	C	D	E
1 Data Group	Description	Source	Destination	Priority
2 MW Dispatch individual data	Forecasted flexible (MW dispatch) individual DER output per technology/fuel type, for example, wind, solar, biomass, hydro output etc	DNO	ESO	
3 ALL -Aggregated GSP data	Total aggregated DER output per technology/fuel type, for example, wind, solar, biomass, hydro output etc.	DNO	ESO	
4 MW Dispatch -Aggregated GSP Data	Non flexible aggregated DER output per technology/fuel type, for example, wind, solar, biomass, hydro output etc., DER - MW available for arming (MW available to be dispatched for MW dispatch services) ,DER - MW armed, DER - MW curtailed, DER - installed capacity, current max available	DNO	ESO	
5 ANM Flexible Connections - Aggregated GSP data	Total ANM Flex Connections Generation , Total curtailed ANM Flex Connections Generation , Total installed capacity	DNO	ESO	
6 Flexibility Services - Aggregated GSP data	Total Flexibility Service generation/load aggregated , Total Dispatched Flexibility Service aggregated , Total installed DER capacity	DNO	ESO	
7 UKPN SCADA data	Individual metering data of RDP-MW DERs	DNO	ESO	
8 All DER	DER location (GSP/Grid/Primary) and capacity	DNO	ESO	
9 MW Dispatch DER	MW dispatch DER location (GSP/Grid/Primary) and capacity	DNO	ESO	
10 ANM status (flex connections) Individual Data point	Flexible Connection DER location and capacity , Flexible Connection Constraints (Individual Data points) , Relation between Flex Connections and Constraints (individual Data Points) , Constraint forecast/headroom (individual Data Points)	DNO	ESO	
11 Flexibility Service Status Individual Data point	Flexibility Services DER location and capacity (individual data point) , All Flexibility Sites (individual data points) , Relation between Flex Service DER and Flexibility Site (effectiveness), Service Window and Delivery Season of Flexibility Sites , Outages affecting DER export	DNO	ESO	
12 DER Information	All DER availabilities, All DER Sensitivity factor	DNO	ESO	
13				
14				

- ## 756 Use Cases

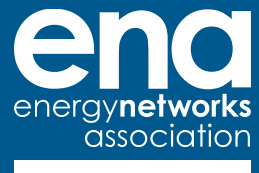
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Expected evolution of the Process



DER Visibility

- This Group is focussed on the data exchange needed in order to facilitate DER and CER participation in ESO services through Visibility of data
- It is considering the operational and planning data needs for both DSO's and ESO's
- This work seeks to ensure that ESO and DSO's can discharge their obligations but still allow frictionless access to markets for both ESO and DSO flexibility services



Energy Networks Association

4 More London Riverside

London SE1 2AU

t. +44 (0)20 7706 5100

🐦 @EnergyNetworks

[energynetworks.org](https://www.energynetworks.org)

2023

Energy Networks Association Limited is a company registered in England & Wales No. 04832301
Registered office: 4 More London Riverside, London SE1 2AU



Legal Text



Workgroup Report Review



Terms of Reference Review

Terms of Reference

Workgroup Term of Reference	Outstanding from Workgroup 21 discussion
a)Implementation and costs;	Awaiting on FES information
b) Review draft legal text should it have been provided. If legal text is not submitted within the Grid Code Modification Proposal the Workgroup should be instructed to assist in the developing of the legal text;	WAGCM1 solution needs to be finalised in order to complete the legal text
c) Consider whether any further Industry experts or stakeholders should be invited to participate within the Workgroup to ensure that all potentially affected stakeholders have the opportunity to be represented in the Workgroup. Demonstrate what has been done to cover this clearly in the report	Considered to be met.
d) Consider EBR implications	Considered to be met.
e) The current transmission and generation characteristics in Scotland compared to those in England and Wales and whether the rationale for the thresholds being set at the current levels still applies given the current and projected generation composition and transmission infrastructure;	Awaiting on FES information
f) Cross code impacts (BSC, CUSC and DCode) and impact on EBR;	Considered to be met.

Terms of Reference

Workgroup Term of Reference	Outstanding from Workgroup 20 discussion
g) Consider any emerging thinking from the Open Network project;	Considered to be met.
h) Any interaction with generator licensing thresholds or requirements;	Considered to be met.
i) The impacts for stakeholders including NGESO, iDNOs, TOs, DNOs and generators;	Considered to be met.
j) Implications for new connectees in relation to data exchange, planning, market engagement and any other areas of change;	Considered to be met.
k) The implications associated with implementing any changes retrospectively so that they apply to existing connectees rather than just for new connectees; and	Considered to be met.
l) The implementation options together with the associated costs and benefits.	Considered to be met.



Any Other Business



Workgroup Vote



Next Steps