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Code Change and Development Group

Meeting 3

18 February 2020

ELEXON

Introduction, apologies & meeting objectives

Kathryn Coffin

Health & Safety

In case of an emergency

An alarm will sound to alert you. The alarm is tested for fifteen seconds every Wednesday at 9.20am

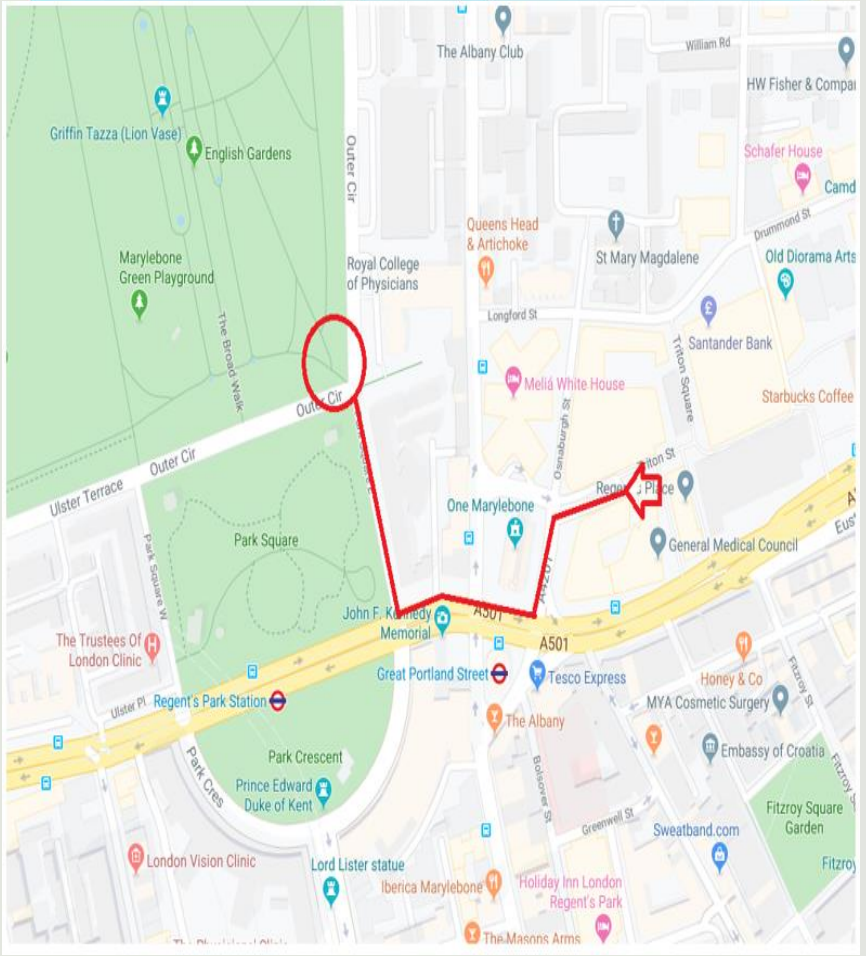
Evacuating 350 Euston Road

- If you discover a fire, operate one of the fire alarms next to the four emergency exits.
- Please do not tackle a fire yourself.
- If you hear the alarm, please leave the building immediately.
- Evacuate by the nearest signposted fire exit and walk to the assembly point.
- Please remain with a member of ELEXON staff and await further instructions from a Fire Warden.
- For visitors unable to use stairs, a Fire Warden will guide you to a refuge point and let the fire brigade know where you are.

When evacuating please remember

- Do not use the lifts.
- Do not re-enter the building until the all clear has been given by the Fire Warden or ground floor security.

Our team on reception is here to help you, if you have any questions, please do ask them.



Meeting objectives

- Discuss the updated CCDG02 straw men in Working Document A:
  - Measurement Classes / Consumption Component Classes
  - Industry Standing Data
  - Registration – Data items, appointments and confirmations
- Discuss initial straw men for:
  - Exception reporting (carried over from CCDG02)
  - GSP Group Correction Factors and Scaling Weights
  - Export Settlement
- Agree volunteers to work up these initial straw men further for CCDG04

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Updates from other work streams

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SCR update

Saskia Barker

Other code bodies

Saskia Barker

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Architecture Working Group

Kevin Spencer

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Discuss updated straw men from CCDG02

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Measurement Classes and Consumption Component Classes

Kevin Spencer

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Measurement Classes / Consumption Component Classes

- **To do:** apply changes based on comments, and reissue to strawman review group and then to CCDG once finalised.

- Areas where further discussion may be required:
  - Whether a domestic/non-domestic split is relevant for *Settlement*;
  - How to separately capture parameters for DUoS or Performance Monitoring;
  - Estimation rules for export (accuracy vs incentives); and
  - 'Switched load tariff' (E7) indicator for load shaping (coming up later).

- Areas for ELEXON to look into and report back:
  - Continued use of BM Unit for Supplier in GSP Group; and
  - Check that these support the GCF/Scaling strawman requirements.

Industry Standing Data Items

Kevin Spencer

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Industry Standing Data Items

- **To do:** apply changes based on comments, and reissue to strawman review group and then to CCDG once finalised.

- Areas where further discussion may be required:
  - Market Participant and Market Role Codes for new services;
  - TOM Segment indicator, DUoS Tariff Id and CT/WC indicators;
  - Interactions between 'old' MDD and 'new' ISD during transition; and
  - Which non-settlement data items to retain for retail purposes.

- Areas for ELEXON to look into and report back:
  - How to introduce new LLF mapping in place of LLFC Id; and
  - Discontinuation of unused/redundant items.

Registration – Data items, appointments and confirmations

Matt McKeon

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Registration: Data items, appointments and confirmations

- **To do:** apply changes based on comments, add process diagram and reissue to strawman review group and then to CCDG once finalised.

- Areas where further discussion may be required:
  - Appointment rejections (viability of option 2);
  - Need for 'customer opt-out' indicator – propose to remove altogether; and
  - New MPAS data items introduced for Switching Programme (**Action 02/07**).

- Changes for ELEXON to make before reissuing for second review:
  - Finalise process diagram for service appointments on a CoS (switch) event;
  - Amend process text to assume that segment/service type rules are set;
  - Merge initial MSID record creation with section on TOM Segment indicator; and
  - Move Registration Data Items into ISD section or before appointments.

New data items introduced for Switching Programme

- **Domestic Premises Indicator** will be initially derived by MPAS from a combination of PC and MC to manage the initial population, after which CSS will master it.
  - REC Registration Services Schedule states that changes to the indicator will be sent to the ERDA, implying MPRS/SMRS will hold it at some point

- **Metered Indicator** and **Energy Flow** mastered in MPAS and notified to CSS.
  - Metered indicator is derived from the Measurement Class
  - Energy Flow is derived from the LLFC
  - Understanding is values to be decoded on sending, not stored in MPAS
  - No plans for future mastering as not in Switching Programme scope

- CCDG to proceed on the basis that these items can be made available to SMRS.
  - ELEXON to confirm with St Clements that this is technically feasible
  - New arrangements in place before MC and LLFC are retired/changed

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Discuss new straw men

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Exception Reporting for TOM services

Mark De Souza-Wilson

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Exception Reporting

Objectives:

- Consider existing Exception Reporting arrangements
- Considerations
- Current proposals for Exception Reporting under DWG preferred TOM
- Changes and extra detail

Current Arrangements

D0095 (NHHDA to Supplier):

- Missing consumption data
- No data for appointed DC
- Data received but DA not appointed
- Non-zero data for de-energised MSID
- Incorrect Supplier/MC/GSP Group/Energisation status/SSC
- No Registration

D0235 (HHDA to HHDC/Supplier):

- Consumption data expected but not received
- Consumption data received but not expected
- Data received for incorrect supplier or from incorrect DC
- Non-zero data for de-energised MSID

Current Arrangements (2)

P0187 (SAA to SVAA re. DA files):

- File received from unexpected DA
- MSIDs missing or incorrect
- Suppliers missing or incorrect

Considerations

- Which parties/service should produce exception reports?
- What reporting items should be removed?
- Can the reporting be simplified?
- What extra exception reporting would be beneficial for the DWG's preferred TOM?
- What more detail/clarifications should be added to the requirements?

Current proposals

- MRS – report to PSS and/or supplier
- MDR – report to PSS (where data unavailable)
- PSS – reports to MDR and supplier
- ADS (ARP) – reports to data providers
- UMSDS – reports for CMS, PECU Arrays
- MDS – reports to data providers and supplier
- VAS – reports (re. incorrect standing data) to Service Management Function, MDS, CDCA

What changes/extra detail is required to the above?

GSP Group Correction and Scaling Weights

Kevin Spencer

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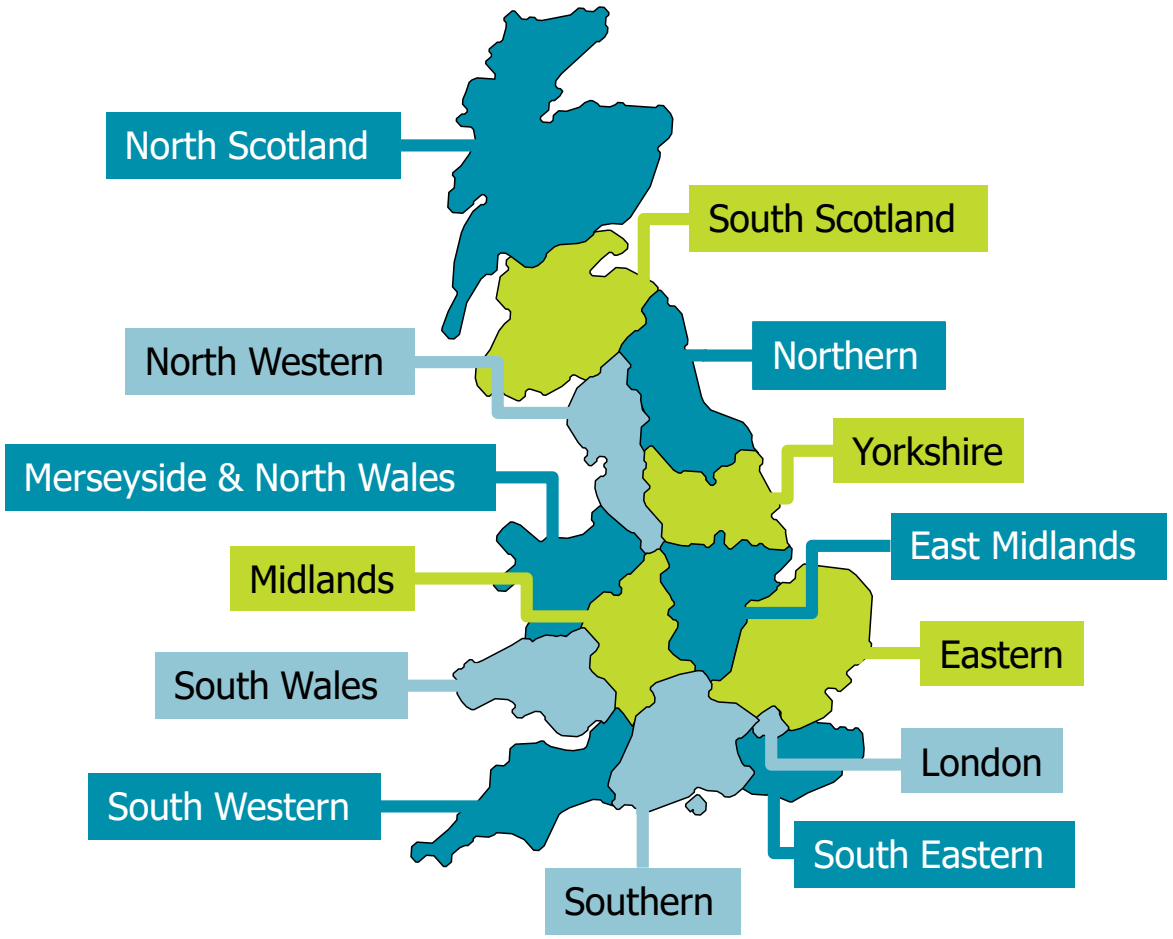
Grid Supply Point (GSP) Groups

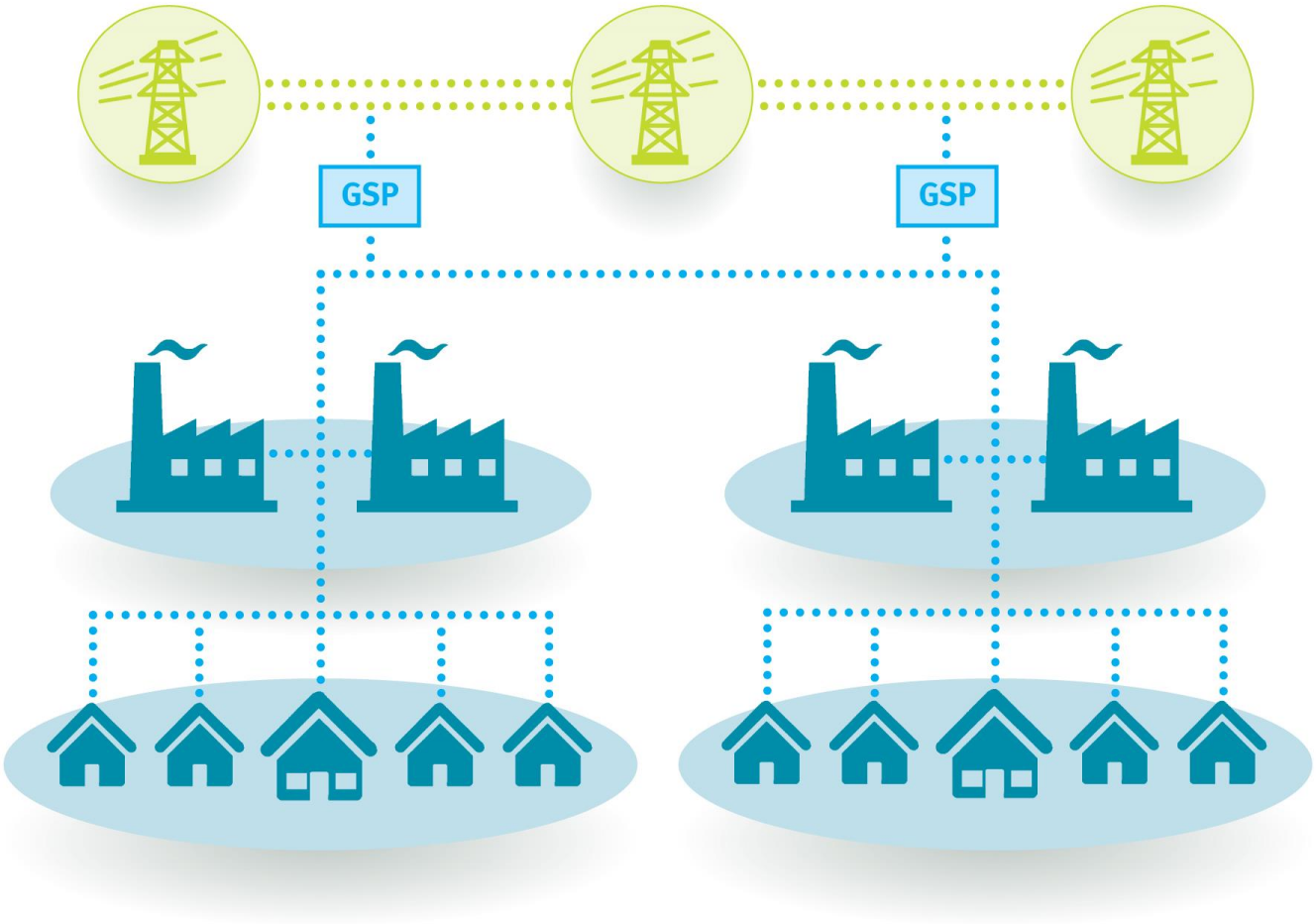


The 14 host Distribution Networks take energy from the Transmission Network at defined **Grid Supply Points** and are also known as GSP Groups.

GSP Group Correction

Distributors meter what goes onto their network, **GSP Group Correction** adjusts Supplier volumes to match, meaning errors are socialised.

GSP Groups



The energy entering a network should match the energy leaving the network.

Generation, Transmission, Distribution and Supply

Generation

Consumption

Transmission Network

'The Grid'

CVA

Grid Supply Points

SVA

Grid Supply Point (GSP) Group

Distribution Network

Supply

Generation

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GSP Group Correction Strawman

- Issue 55 looked at GCF and came up with an optimal calculation for GSPGCF scaling weights
- The calculation is dependent on being able to calculate the % standard deviation associated with error in each CCC. Under the MHHS TOM we cannot calculate this initially since we won't know
- The proposed calculation did not address the issue with competing corrections
- We also need to set some principles when setting scaling weights
- We also need to revisit the concept of TOU scaling weights as an option
- Once new approach agreed we need to define the transition arrangements

Scaling Weight Principles

For discussion:

- Scaling weights should reflect the volume error in each CCC (if known or can be estimated)
- If volume error not known (or cannot be estimated) the scaling weight should be equated with similar CCCids
- Scaling weights should be higher for estimated volumes such as estimates and losses
- Scaling weights should not disincentive transition to the new MHHS TOM
- Scaling weights should not unduly impact 'late movers' to the new arrangements
- Do you agree with these…….
- And any others that we should include?

GCF Strawmen – Option 1

To address competing corrections introduce separate GCFs for Import and Export:

1. Calculate Correctable Volume (CV)
2. Split CV in proportion to the import and export volumes
3. Calculate Separate GCFs for Export and Import (See worked example Option 1)

Option 1							
Worked example							
			Key				
GT	100		Group take				
AI	80		Active Import				
AE	-20		Active Export				
CV	40		Correctable Volume				
CVI	32		Correctable Volume Import				
CVE	8		Correctable Volume Export				
GCFI	1.4		Group Correction Factor (Import)				
GCFE	0.6		Group Correction Factor (Export)				
CAI	112		Corrected Volume (Import)				
CAE	-12		Correct Volume (Export)				
Sum (CAI,CEI)	100		Corrected Volume				

Option 1							
Worked example							
			Key				
GT	100		Group take				
AI	180		Active Import				
AE	-40		Active Export				
CV	-40		Correctable Volume				
CVI	-32.72727273		Correctable Volume Import				
CVE	-7.272727273		Correctable Volume Export				
GCFI	0.8		Group Correction Factor (Import)				
GCFE	1.2		Group Correction Factor (Export)				
CAI	147.2727273		Corrected Volume (Import)				
CAE	-47.27272727		Correct Volume (Export)				
Sum (CAI,CEI)	100		Corrected Volume				

Option 1 calculations

- H is the GSP Group
- j is the Settlement Period, N is all the CCC and WT_n is the scaling weight for each CCC
- U is the unallocated demand ($GSPGT_{Hj} - \sum_N GC_{HNj}$)
- WI is the Weighted Import, $\sum_{(AI)} GC_{HNj} * WT_n$
- WE is the Weighted Export, $\sum_{(AE)} GC_{HNj} * WT_n$

Under option 1, the Correction Factors are calculated as follows:

$$Import\ CF = 1 + \frac{Import\ Share\ of\ U}{WI} = 1 + \frac{U \cdot WI}{(WI + WE) \cdot WI} = 1 + \frac{U}{WI + WE}$$

$$Export\ CF = 1 + \frac{Export\ Share\ of\ U}{-WE} = 1 + \frac{U \cdot WE}{(WI + WE) \cdot (-WE)} = 1 - \frac{U}{WI + WE}$$

Option 2 – Reciprocal Correction Factors

- At the time of Issue 55, ELEXON suggested another solution in which the Export CF was the reciprocal of the Import CF
- Export CF_j = 1 / Import CF_j
- In practice we do not think this is very different to option 1, but it's harder to understand, it's harder to calculate the Correction Factors, and it doesn't really have any advantages over option 1
- We suggest we just go with option 1

How is the Option 2 Correction Factor calculated?

Under option 2 the correction factor CF is applied to the Weighted Import, increasing it by:

$$Additional\ Import = WI \cdot (CF - 1)$$

And the reciprocal of the Correction Factor is applied to the Weighted Export. Increasing it by:

$$Additional\ Export = WE \cdot (\frac{1}{CF} - 1)$$

We must therefore calculate the CF to ensure that:

$$Additional\ Import - Additional\ Export = Unallocated\ Demand$$

$$WI \cdot (CF - 1) - WE \cdot \left(\frac{1}{CF} - 1\right) = U$$

$$WI \cdot CF^2 + (WE - WI - U)CF - WE = 0$$

The required Correction Factor CF is therefore the positive root of this equation:

$$CF = \frac{-b + \sqrt{b^2 + 4 \cdot WI.WE}}{2 \cdot WI}$$

where b = WE – WI – U.

Confirm volunteers to work up areas further

Kathryn Coffin

Volunteers so far

Detailed work area	Member volunteers
Redefinition of existing industry data items	~~Aaron Dickinson~~ Dom Bradbury James Murphy Steven Bradford Tom Chevalier
Registration and Data Service interactions	~~Aaron Dickinson~~ James Murphy Lorna Mallon Paul Saker Steven Bradford Tom Chevalier
Exception reporting for Data Services	~~Aaron Dickinson~~ James Murphy Paul Saker Steven Bradford Terry Carr

Volunteers so far

Detailed work area	Member volunteers
GSP Group Correction Factors & Scaling Weights	~~Aaron Dickinson~~ Derek Weaving Dom Bradbury James Murphy Paul Saker Tom Chevalier
Export Settlement	
Settlement 'run-off' arrangements	Derek Weaving Paul Saker Seth Chapman Terry Carr *(+STAG)*

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Economy 7 and Load Shaping

Options and issues

18 February 2020

Kevin Spencer

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Economy 7 and Load Shapes

- The Load Shaping work group identified an initial set of Load Shapes for MHHS
- These were based on the following data that could be obtained from the registration system:
  - Domestic/ non-Domestic;
  - Active Import/ Active Export; and
  - GSP Group

  These arrangements were intended for the 'small' number of customers remaining on register reads in the Target End State

  Some Suppliers have suggested that for opted-out Domestic Customers or those with non-smart Meters they would not wish to bill the customers based on the ToU registers if they were being settled on a Domestic load shape

  Those suppliers favour having an Ecomony 7 specific load shape……..

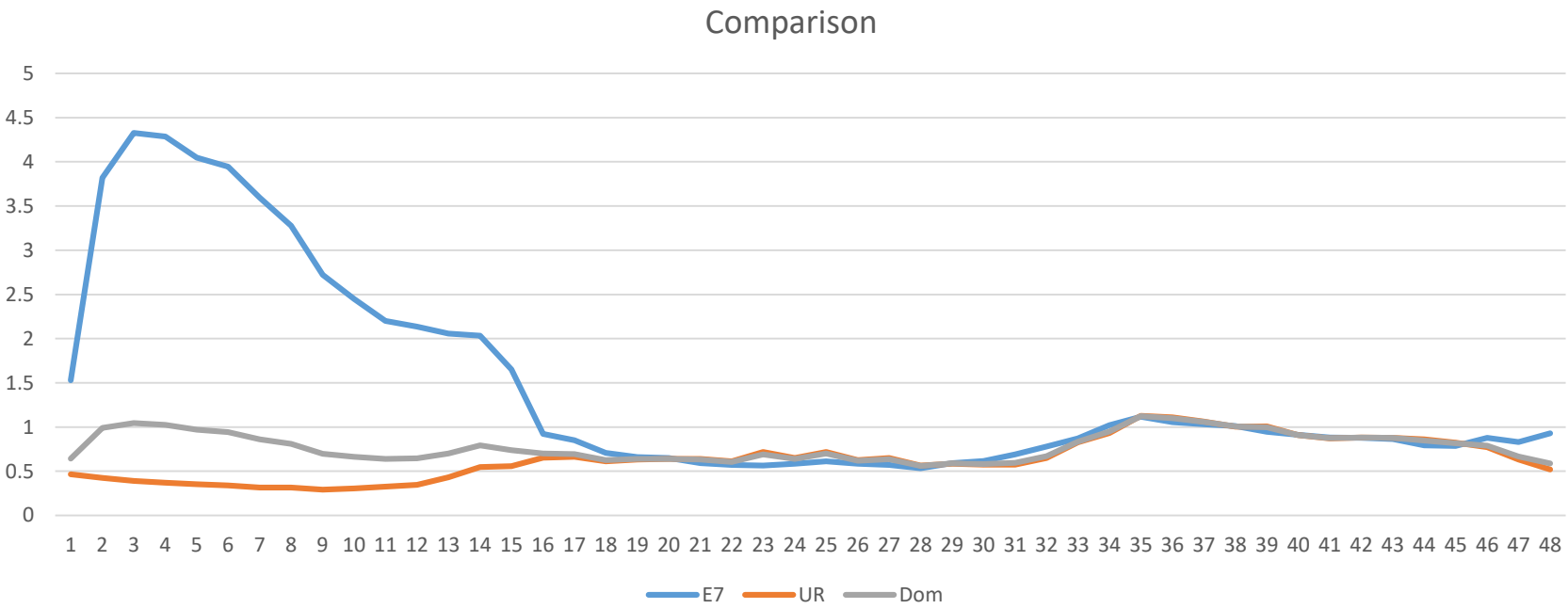
Economy 7 Load Shape: considerations

- In order to create an Economy 7 load shape the registration data would require a field to identify that customers are on an Economy 7 tariff (whether they are being settled using HH data or not)
- The Supplier would have to populate the field in the registration data for each MPAN indicating that it is E7 (Possibly with a switched load indicator in ISD. N.B. a lot of existing E7 customers do not have switched load)
- The registration data would be used by the Load shaping Service to create a Load Shape using data for MPANs where valid HH data had been collected
- The Smart Data Service would then summate the meter advances for each ToU register and apply it to the E7 Load shape

Economy 7 Load Shapes: Issues

- There are may types of E7 regimes which differ in timing and some are split regimes. Consideration of which types of E7 require a Load Shape
- Other types of MPANs currently in Profile Class 2 would still be included in the 'Domestic' load shape (e.g. Economy 10, 8.5 WM and other many switching lengths)
- The E7 Load shape will still smear the Off peak and daytime load across the Settlement Day
- The Super customer Domestic Load shape would not be different than currently proposed (i.e. it is within the Supplier's gift to address the issue without having this data split out)
- Settlement does not split out customers with other specific loads e.g. Electric Cookers as the impact is reflected in the Super Customer
- The introduction would also add complexity to a process designed for small numbers of customers

Economy 7 Load Shapes: How different would the Load shapes be?



The load shapes for E7 and UR look different as expected. The Domestic shape reflects both the E7 storage load and the UR night load shape. If volumes were separately applied to the UR and E7 shapes the outturn 'Super Customer' load shape used in imbalance settlement would look like the domestic shape above.

Question: What would a Supplier do with the split out E7 data that would warrant the extra complexity of creating an E7 load shape?

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Other business and next steps

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CCDG02 Headline Report

- Redlined changes made to address minor clarity comments from Ofgem and a typo (where MDS should have read MRS)
- Also amended to clarify that splitting the LLFC ID from the LLF has been included in the updated Industry Standing Data table as an essential change, rather than put in the log of 'nice to haves'

Open actions

Action no.	Action	Owner	Due date	Action update	Status
02/07	ELEXON to check with St Clements whether any of the following data items are already held in SMRS: GSP Group, AI/AE indicator and domestic/non-domestic indicator.	Mark De Souza-Wilson	18/02/20	On-going. ELEXON has checked its copy of registration data and can confirm that GSP Group is already held in SMRS. However, AI/AE indicator and domestic/non-domestic indicator are not currently held. ELEXON to check whether these will be added to SMRS as part of the Switching Programme.	Open
02/05	ELEXON to clarify what data item outputs the AWG needs from the CCDG and when.	Kevin Spencer	18/02/20	On-going. ELEXON will provide a verbal update at CCDG03.	Open
02/01	ELEXON to bring a list of BSC drafting questions to a future CCDG for discussion (e.g. Metering System definitions, SSTPGPL).	Kevin Spencer	17/03/20	On-going. ELEXON intends to bring this to CCDG04.	Open
01/02	Ofgem to clarify whether the legal text for MHHS should be drafted against the current Industry Codes baseline or new consolidated REC baseline.	Saskia Barker	15/01/19	On-going. Update provided at CCDG02. Ofgem is still considering this, and a representative from Ofgem's REC team will be attending future Code bodies meetings.	Open

Log of ‘nice to haves’

- Any questions/comment on format?
- Is ‘nice to haves’ the best description?

Next steps

- ELEXON and volunteer members to work up the following straw men for CCDG04:
  - Exception reporting
  - GSP Group Correction Factors and Scaling Weights
  - Export Settlement
- ELEXON to bring initial straw men for the following to CCDG04:
  - Settlement 'run-off' arrangements (after discussing with Software Technical Advisory Group in February)