



Forum

Targeted Charging Review Update

The webinar will begin shortly





Forum

Targeted Charging Review Update

12 March 2020



Welcome

Rob Marshall, ESO



national**grid**ESO





Afternoon Agenda

- > The TCR decision
- > Transmission Generation Residual
- > BSUoS charging
- > Demand residual
- > Q&A Session

Targeted Charging Review update

Jennifer Doherty, ESO
Lee Wells, Northern Powergrid

Ofgem's TCR Decision – a reminder

Ofgem's decision on the TCR was released on 21 November. Full details can be found here - [Link to Ofgem's website](#)

Key points:

- > TNUoS Generation Residual (TGR) to be set at £0 (subject to compliance with EU Regulation No 838/2010 as being progressed via CMP317)
- > BSUoS to Suppliers to be based on gross demand as measured at the GSP
- > 2nd BSUoS taskforce to determine who should pay BSUoS and on what basis
- > Major reform of network residual charges. Make residual charges (both Transmission and Distribution) unavoidable and remove any behavioural signals.

All of the above to be implemented by

- > April 2021 for Transmission
- > April 2022 for Distribution

Transmission Generation Residual (TGR)



Transmission Generation Residual (TGR) Update

- CMP317 was already in flight when Ofgem's decision was made – looking at ensuring average annual transmission generator charges are within a range of €0-2.50/MWh (EU Regulation No 838/2010)
- Ofgem's direction was to set TNUoS Generation Residual (TGR) at £0. TGR is currently negative to ensure €2.50/MWh cap is not breached
- CMP327 raised to implement Ofgem's direction
- Due to the overlap of these mods, they have been amalgamated

Consultation closes today (12 March) and is planned to report to Ofgem in June.

Current Modelled Effects of CMP317/327

Excluding all Local Circuit charges

£/kW impact	2021/22	2022/23	2023/24	2024/25
Current Forecast of Generator residual tariff	-5.56	-6.66	-8.56	-9.91
TCR Proposed Generator residual tariff	0.00	0.00	0.00	0.00
Compliance Adjustment for EU cap with assumed €2.50/MWh target, existing error margin and exclusion of all local asset costs	0.00	-0.58	-2.03	-2.21
Additional cost to transmission connected generators	5.56	6.08	6.52	7.70

Excluding all Local Circuit charges except shared assets and pre-existing assets

£/kW impact	2021/22	2022/23	2023/24	2024/25
Current Forecast of Generator residual tariff	-5.56	-6.66	-8.56	-9.91
TCR Proposed Generator residual tariff	0.00	0.00	0.00	0.00
Compliance Adjustment for EU cap with assumed €2.50/MWh target, existing error margin and exclusion of pre-existing and shared asset costs	0.00	-0.71	-2.49	-2.75
Additional cost to transmission connected generators	5.56	5.95	6.07	7.15

This analysis is available in CMP317/327 workgroup consultation

Other Potential Options and Next Steps

The workgroup have discussed other options to the defect presented by CMP317/327. These have focussed on:

- **Consideration of a target in the €0-2.5/MWh range.** The workgroup have considered targeting €0, €0.5, or €1.25
- **Looking at changing the locational methodology** within the transport model – ie altering the reference node
- **Which costs are included** in the compliance cap
- **A staggered implementation** similar to CMP264/5

Ofgem has indicated that it is willing to consider alternatives along these lines provided that there is justification for any proposal.

The workgroup consultation was published on the 14th February 2020.
CMP317 and CMP327 will be implemented for charging year 2021/22.

BSUoS charging





BSUoS Calculation today for all BSUoS liable users

BSUoS Charge

=

BSUoS tariff
£/MWh

x

Net BM Unit
Metered Energy
Volume (MWh)

x

Transmission Loss
Multiplier

x

Trading Unit
Delivery Mode
(+1 or -1)

BSUoS Calculation after CMP333

For Transmission Connected Sites* the calculation remains as is today

BSUoS Charge for Transmission Connected Sites*

=

BSUoS tariff
£/MWh

X

Net BM Unit Metered Energy Volume (MWh)

X

Transmission Loss Multiplier

X

Trading Unit Delivery Mode (+1 or -1)

* transmission connected generators (with a BCA), transmission connected demand and sites with a BEGA that are not exempt export BMUs

For Supplier BMUs there is a change in the data used, which is no longer on a trading unit basis

BSUoS Charge for Supplier BMUs

=

BSUoS tariff
£/MWh

X

Gross BM Unit Metered Energy Volume (MWh)

X

Transmission Loss Multiplier

➤ How the BSUoS tariff (£/MWh) is calculated after CMP333

$$\text{BSUoS tariff } \text{£/MWh} = \frac{\text{Total BSUoS charge for the Settlement Period (£)}}{\text{Total BSUoS chargeable base for the Settlement Period (MWh)}}$$

Continues as is today

Changes as set out below

$$\text{Total BSUoS chargeable base for the Settlement Period (MWh)} = \left(\begin{array}{l} \text{Transmission Connected Sites} \\ \text{Net BM Unit Metered Energy Volume (MWh)} \times \text{Transmission Loss Multiplier} \times \text{Trading Unit Delivery Mode (+1 or -1)} \end{array} \right) + \left(\begin{array}{l} \text{Supplier BMUs} \\ \text{Gross BM Unit Metered Energy Volume (MWh)} \times \text{Transmission Loss Multiplier} \end{array} \right)$$



Progress update

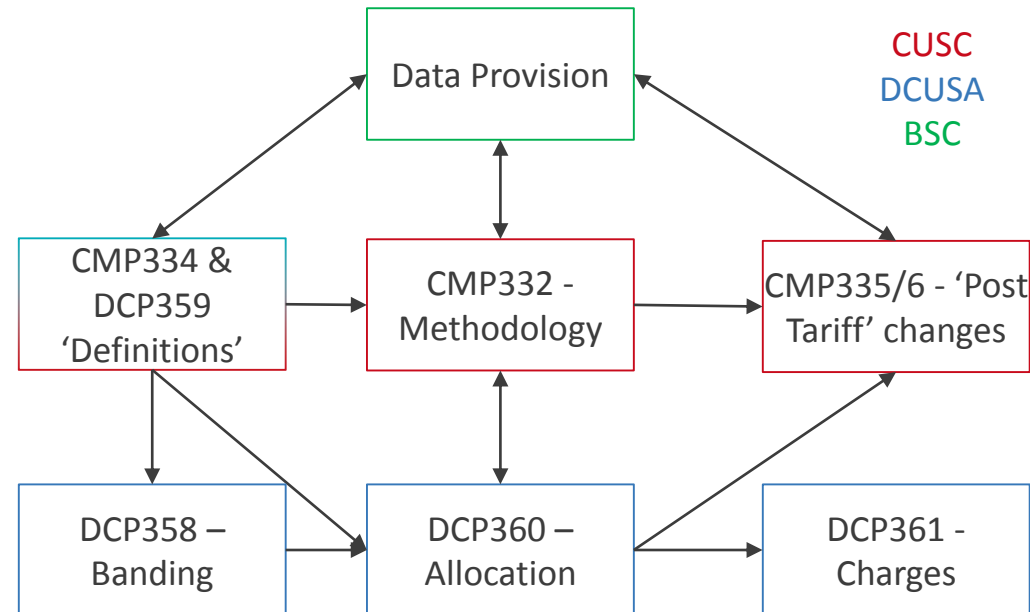
- Workgroup consultation closed (5 March)
- Analysis indicates that on average, a 10% drop in the BSUoS price across the year due to the increase in the BSUoS liable chargeable volume is expected. This would differ per settlement period
- CMP333 is due to be taken to March's CUSC Panel
- Report due to be sent to Ofgem in June 2020

Demand Residual

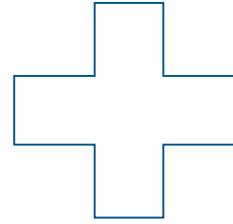
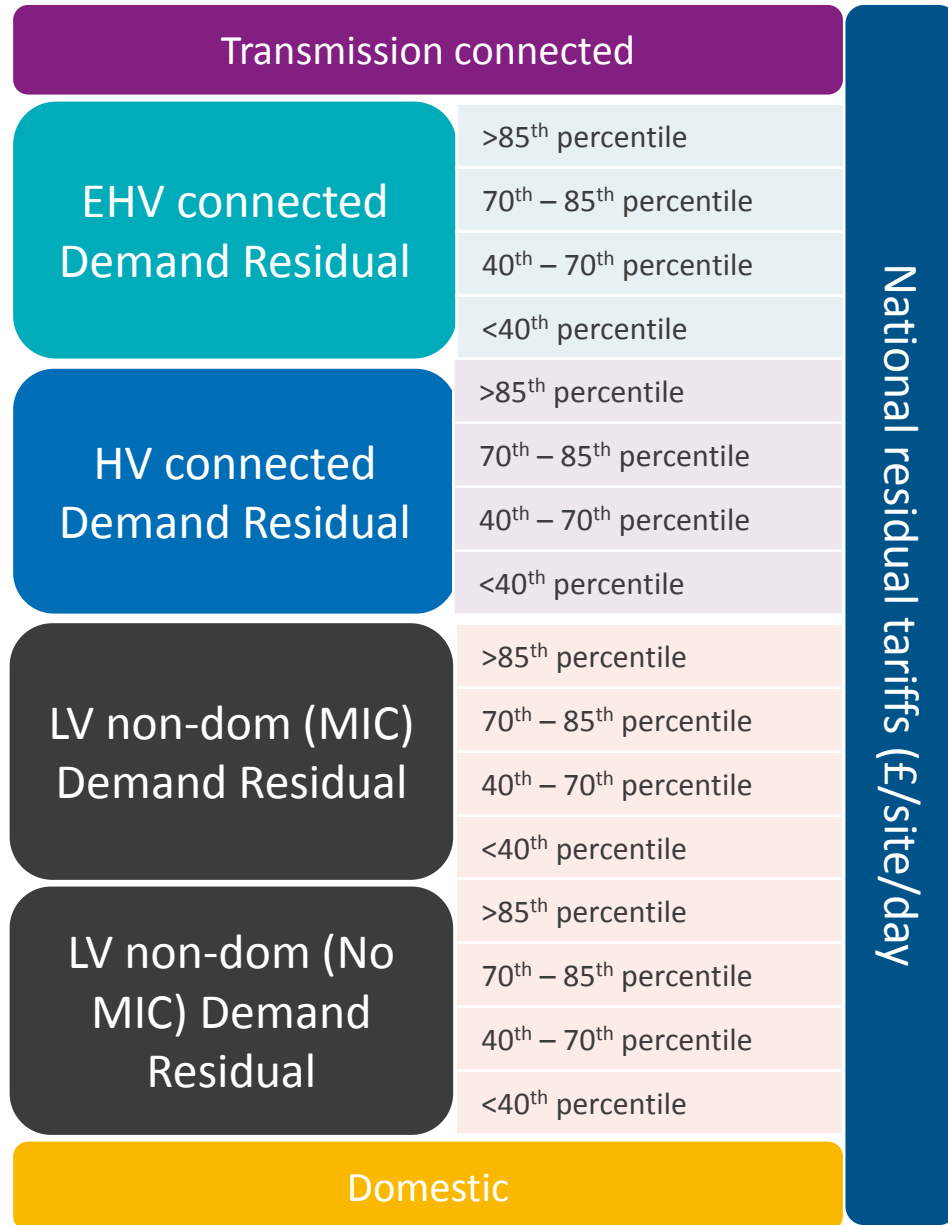


Network Residual Charges Update

- Ofgem's direction is to make residual charges (both Transmission and Distribution) unavoidable and remove any behavioural signals
- A banding methodology will be created that will levy a £ per site per day charge to all customers in the band
- Joint working between DNOs and NGENSO via the ENA to implement
- [Project Initiation Document \(PID\)](#) created to show how this will be done, currently on track
- Eight code changes required to do this;
 - 4 DCUSA Mods
 - 3 CUSC Mods
 - 1 BSC Mod



Network Residual Charges - how it will look



Distinct DUoS arrangements for unmetered supplies, currently being discussed in CMP332

Distribution-connected parties will also have DNO specific DUoS charges based on a common methodology



Network Residual Charges - how it will work

CDCM residual
EDCM residual

A
B

The first step is to determine the amount of CDCM and EDCM residual, as per the current methodologies

Voltage and band		
LV	Domestic	Band 1
	LV non-dom (no MIC)	Band 2
		Band 3
		Band 4
		Band 1
	LV non-dom (MIC)	Band 2
		Band 3
		Band 4
Band 1		
HV	HV	Band 2
		Band 3
		Band 4
		Band 1
EHV	EHV	Band 2
		Band 3
		Band 4
		Band 1
Unmetered		

This is a DUoS example with similar principles applying at transmission.
Unmetered supplies are still being considered in CMP332 for transmission



Network Residual Charges - how it will work

CDCM residual
EDCM residual

A
B

We then need to determine the number of eligible 'sites' in each band, to which a residual fixed charge will be applied

C

Voltage and band			Site count
LV	Domestic		c
	LV non-dom (no MIC)	Band 1	c
		Band 2	c
		Band 3	c
		Band 4	c
	LV non-dom (MIC)	Band 1	c
		Band 2	c
		Band 3	c
Band 4		c	
HV	HV	Band 1	c
		Band 2	c
		Band 3	c
		Band 4	c
EHV	EHV	Band 1	c
		Band 2	c
		Band 3	c
		Band 4	c
Unmetered			n/a

This is a DUoS example with similar principles applying at transmission.
Unmetered supplies are still being considered in CMP332 for transmission



Network Residual Charges - how it will work

CDCM residual
EDCM residual

A
B

For each band, the total annual consumption (kWh) is needed

C

D

Voltage and band		Site count	Band net consumption (kWh)	
LV	Domestic	c	d	
	LV non-dom (no MIC)	Band 1	c	d
		Band 2	c	d
		Band 3	c	d
		Band 4	c	d
	LV non-dom (MIC)	Band 1	c	d
		Band 2	c	d
		Band 3	c	d
Band 4		c	d	
HV	HV	Band 1	c	d
		Band 2	c	d
		Band 3	c	d
		Band 4	c	d
EHV	EHV	Band 1	c	d
		Band 2	c	d
		Band 3	c	d
		Band 4	c	d
Unmetered		n/a	d	

This is a DUoS example with similar principles applying at transmission.
Unmetered supplies are still being considered in CMP332 for transmission



Network Residual Charges - how it will work

CDCM residual	A B
EDCM residual	

The residual is allocated based on band consumption: the CDCM/EDCM residuals are 'ring-fenced' to respective customers

Voltage and band		C	D	E	
		Site count	Band net consumption (kWh)	Band residual (£)	
LV	Domestic	c	d	$e = a \times d / \sum \text{CDCM}_d$	
	LV non-dom (no MIC)	Band 1	c	d	$e = a \times d / \sum \text{CDCM}_d$
		Band 2	c	d	$e = a \times d / \sum \text{CDCM}_d$
		Band 3	c	d	$e = a \times d / \sum \text{CDCM}_d$
		Band 4	c	d	$e = a \times d / \sum \text{CDCM}_d$
	LV non-dom (MIC)	Band 1	c	d	$e = a \times d / \sum \text{CDCM}_d$
		Band 2	c	d	$e = a \times d / \sum \text{CDCM}_d$
		Band 3	c	d	$e = a \times d / \sum \text{CDCM}_d$
Band 4		c	d	$e = a \times d / \sum \text{CDCM}_d$	
HV	HV	Band 1	c	d	$e = a \times d / \sum \text{CDCM}_d$
		Band 2	c	d	$e = a \times d / \sum \text{CDCM}_d$
		Band 3	c	d	$e = a \times d / \sum \text{CDCM}_d$
		Band 4	c	d	$e = a \times d / \sum \text{CDCM}_d$
EHV	EHV	Band 1	c	d	$e = b \times d / \sum \text{EDCM}_d$
		Band 2	c	d	$e = b \times d / \sum \text{EDCM}_d$
		Band 3	c	d	$e = b \times d / \sum \text{EDCM}_d$
		Band 4	c	d	$e = b \times d / \sum \text{EDCM}_d$
Unmetered		n/a	d	$e = a \times d / \sum \text{CDCM}_d$	

This is a DUoS example with similar principles applying at transmission.
 Unmetered supplies are still being considered in CMP332 for transmission





Network Residual Charges - How it will work

CDCM residual	A
EDCM residual	B

The annual residual fixed charge per site is calculated by dividing the residual to be recovered by the number of sites in each segment/band

Voltage and band		C	D	E	F	
Voltage and band		Site count	Band net consumption (kWh)	Band residual (£)	Band fixed charge (£)	
LV	Domestic	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$	
	LV non-dom (no MIC)	Band 1	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$
		Band 2	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$
		Band 3	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$
		Band 4	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$
	LV non-dom (MIC)	Band 1	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$
		Band 2	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$
		Band 3	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$
Band 4		c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$	
HV	HV	Band 1	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$
		Band 2	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$
		Band 3	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$
		Band 4	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$
EHV	EHV	Band 1	c	d	$e = b \times d / \sum EDCM_d$	$f = e / c$
		Band 2	c	d	$e = b \times d / \sum EDCM_d$	$f = e / c$
		Band 3	c	d	$e = b \times d / \sum EDCM_d$	$f = e / c$
		Band 4	c	d	$e = b \times d / \sum EDCM_d$	$f = e / c$
Unmetered		n/a	d	$e = a \times d / \sum CDCM_d$	n/a	

This is a DUoS example with similar principles applying at transmission.
 Unmetered supplies are still being considered in CMP332 for transmission





Network Residual Charges - How it will work

CDCM residual	A
EDCM residual	B

A daily fixed charge on a £/p per day per site basis, by dividing the annual fixed charge for each band by the number of days in the charging year

Voltage and band		C	D	E	F	G	
		Site count	Band net consumption (kWh)	Band residual (£)	Band fixed charge (£)	Daily charge (£/Site/day)	
LV	Domestic	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$	$g = f / [365]$	
	LV non-dom (no MIC)	Band 1	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$	$g = f / [365]$
		Band 2	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$	$g = f / [365]$
		Band 3	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$	$g = f / [365]$
		Band 4	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$	$g = f / [365]$
	LV non-dom (MIC)	Band 1	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$	$g = f / [365]$
		Band 2	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$	$g = f / [365]$
		Band 3	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$	$g = f / [365]$
Band 4		c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$	$g = f / [365]$	
HV	HV	Band 1	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$	$g = f / [365]$
		Band 2	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$	$g = f / [365]$
		Band 3	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$	$g = f / [365]$
		Band 4	c	d	$e = a \times d / \sum CDCM_d$	$f = e / c$	$g = f / [365]$
EHV	EHV	Band 1	c	d	$e = b \times d / \sum EDCM_d$	$f = e / c$	$g = f / [365]$
		Band 2	c	d	$e = b \times d / \sum EDCM_d$	$f = e / c$	$g = f / [365]$
		Band 3	c	d	$e = b \times d / \sum EDCM_d$	$f = e / c$	$g = f / [365]$
		Band 4	c	d	$e = b \times d / \sum EDCM_d$	$f = e / c$	$g = f / [365]$
Unmetered		n/a	d	$e = a \times d / \sum CDCM_d$	n/a	n/a	

This is a DUoS example with similar principles applying at transmission.
 Unmetered supplies are still being considered in CMP332 for transmission



Network Residual Charges - How it will work

CDCM residual = £128,285,871
EDCM residual = £2,831,164

A
B

Based on Northern Powergrid (Northeast) 2019/20 residual charges (DUoS only) from the published impact assessment

Voltage and band			C	D	E	F	G	
			Site count	Band net consumption (kWh)	Band residual (£)	Band fixed charge (£)	Daily charge (£/Site/day)	
LV	Domestic		1,555,387	4,964,321,467	£51,871,202	£33	£0.09	
	LV NHH	-	5,403	41,988	78,123,647	£816,298	£19	£0.05
		5,403	17,538	31,491	287,939,085	£3,008,618	£96	£0.26
		17,538	33,559	15,745	335,044,954	£3,500,818	£222	£0.61
		33,559	∞	15,745	951,476,389	£9,941,786	£631	£1.73
	LV HH	-	80	6,209	537,774,557	£5,619,099	£905	£2.48
		80	150	2,910	583,922,009	£6,101,284	£2,097	£5.74
		150	225	1,230	369,928,864	£3,865,313	£3,142	£8.61
		225	∞	1,698	1,335,806,176	£13,957,571	£8,222	£22.53
	HV	HV	-	400	274	131,952,740	£1,378,748	£5,034
400			900	240	378,650,816	£3,956,447	£16,508	£45.23
900			1,600	155	432,349,399	£4,517,532	£29,222	£80.06
1,600			∞	223	1,724,216,383	£18,015,992	£80,765	£221.27
EHV	EHV	-	2,200	7	0.9%	£25,004	£3,572	£9.79
		2,200	10,000	9	5.4%	£153,950	£17,106	£46.86
		10,000	19,090	12	15.2%	£430,061	£35,838	£98.19
		19,090	∞	13	78.5%	£2,222,148	£170,934	£468.31
Unmetered			n/a	166,063,411	£1,735,163	n/a	n/a	

This is a DUoS example with similar principles applying at transmission.
Unmetered supplies are still being considered in CMP332 for transmission



Network Residual Charges - how it will work

Eligibility = a 'Final Demand Site'

- > Single Site consistent with current site billing arrangements.
- > Final Demand defined by the Authority as *"Electricity which is consumed other than for the purposes of generation or export onto the electricity network"*
- > Assessment of what level of Final Demand at a Single Site equates to a Final Demand Site e.g. all or nothing or a threshold?

Banding and allocation based on MIC (Maximum Import Capacity) or annual consumption

- > Annual consumption equivalent to the EAC (Estimated Annual Consumption) provided by NHH Data Aggregators.
- > Other considerations include rounding and upper and lower tolerances e.g. $> \text{min}$ and $\leq \text{max}$ boundary.
- > Banding will be refreshed periodically, and revised bands effective from the beginning of each electricity transmission owner price control period e.g. RIIO-ET2 etc.
- > Allocation generally based on average data over a minimum of 24 months where available.
- > A Final Demand Site will generally be in that band for the duration of the price control period, subject to exceptional circumstances (e.g. 'significant' change in usage) or a successful dispute.
- > We are currently determining indicative banding and will publish iteratively, with final RIIO-ET2 banding and allocation to be determined in Q3 2020.



Network Residual Charges - how it will work

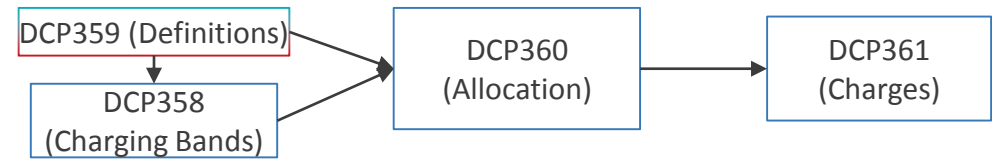
- > **Will be driven primarily by LLFC (Line Loss Factor Class)**
 - > Insufficient time for a solution which relies on a new registration item signalling to which residual band a site is allocated.
 - > Distributors developing LLFC migration plans which will lead to the creation of new LLFCs and to which residual band they are mapped.
 - > Any changes to band allocation will be reflected by changing the LLFC.
 - > Around 2.5m sites to be allocated to non-domestic charging bands.
 - > Distributors will create new LLFCs from Q3 2020 and migrate sites in advance of 1 April 2021.
 - > Once migrated, and until April 2022 when DUoS reform is implemented, multiple LLFCs will be mapped to existing tariffs to ensure that site is charged as if no change had been made, but shows which band it will be allocated well in advance.
 - > Proposal is for one band for transmission connected.



Network Residual Charges– Key dates

Milestone	Due date	Responsibility
DNOs to produce preliminary cut of bands, new LLFC structures, and mapping table of LLFC to band allocation	April 2020	ESO
Working groups complete development of CUSC and DCUSA modifications and submit to Ofgem	May 2020	DNOs and ESO
DNOs provide suppliers with initial view of customers per band, and methodology applied	June 2020	DNOs and ESO
CUSC and DCUSA modifications approved by Ofgem	June 2020	Ofgem
Designated party set final bands	July 2020	ESO
New LLFCs set up in MDD	Sept – Dec 2020	Elexon
Transfer of customers to new LLFCs	Jan – Mar 2021	DNOs
TNUoS go-live	April 2021	ESO
DUoS go-live	April 2022	DNOs

DCUSA Change Proposals

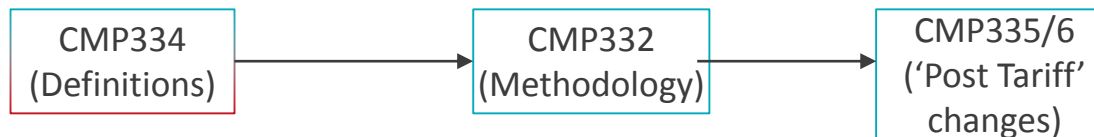


The four DCUSA modifications were raised by the DNOs in January

- All raised as urgent at the January DCUSA panel
- DCP359 to be run jointly with CMP334 for consistency
- DCP358 and DCP360 to be progressed together
- More info available - <https://www.dcusa.co.uk/change-proposal-register/>

DCUSA CP no.	Proposer	Title	Description	Stage
DCP358	ENW	Determination of Banding Boundaries	Setting non-domestic charging bands	Consultation to be published w/c 16 th March
DCP359	NPG	Who should pay?	Defining 'Site' and 'Final Demand'	Consultation to be published w/c 16 th March
DCP360	WPD	Allocation to bands and interventions	Allocating to non-domestic charging bands (based on LLFC) including disputes and reallocation	Consultation to be published w/c 16 th March
DCP361	SPEN	Calculation of Charges	Calculating charges including treatment of bands with low customer numbers	Workgroup discussions

CUSC Modifications

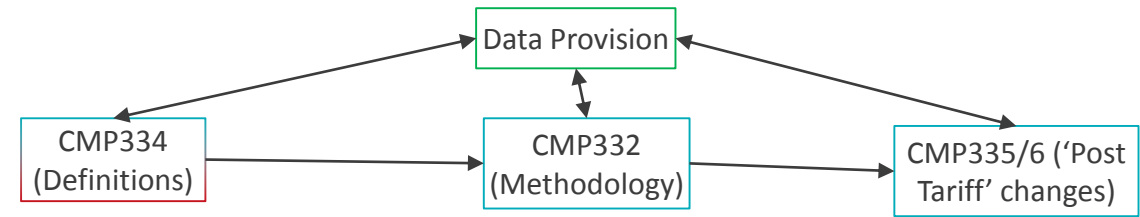


The three CUSC modifications were raised by NGENSO by January

CMP Number	Date Raised	Title	Description	Stage
CMP332	Dec 2019	TDR bandings and allocation (TCR)	Creating the methodology to charge the TDR on a £/site/day basis in line with Ofgem’s direction	Post-Consultation
CMP334	Jan 2020	TDR – consequential definition changes (TCR)	Defining ‘Site’ and ‘Final Demand’ to determine who will pay the TDR	Consultation to be published w/c 16 th March
CMP335/6	Jan 2020	TDR - Billing and consequential changes (TCR)	Will review all ‘post-tariff’ aspects including assigning to bands, disputes, forecasting, billing, securitisation and reconciliation processes	Workgroup discussions

- All raised as urgent to meet timescales for 2021 – urgency granted for CMP334 and CMP335/6
- CMP334 to be jointly run with DCP359 for consistency.
- Contract the CUSC team (cusc.team@nationalgrideso.com) for further info

BSC Modification



The BSC modification to be raised by NGENSO in March

BSC Number	Date Raised	Title	Description	Stage
P402	March 2020	TCR TDR Data Exchange	Will capture the data and process by which data is aggregated by Elexon and passed to NGENSO	Raised w/c 9 th March

- Will provide the data NGENSO needs to implement the TDR changes
- Broadly involves DNOs and IDNOs sending data to Elexon to aggregate
- NGENSO will then use this data for tariff setting and billing
- Contract the BSC team (bsc.change@elexon.co.uk) to get involved

Q&A Session

Andrew Self, Ofgem

Eleanor Wood, Ofgem

Kayt Button, Ofgem

Jennifer Doherty, ESO

Graham Neale, ESO

Lee Wells, Northern Powergrid