electricity north west

Bringing energy to your door

Ofgem's Charging Significant Code Reviews (SCR)

Webinar 1st November 2019

Tony McEntee

Stay connected...

www.enwl.co.uk

What is a Significant Code Review?

- **A Significant Code Review (SCR)** allows Ofgem to initiate wide ranging and holistic change and to implement reform of a code based issue.

- There are currently two SCRs in progress with regard to charging

  - The Access SCR which is looking at Access rights and 'Forward-Looking Charges'; and
  - The Targeted Charging Review (TCR) which is looking at how 'residual' network charges should be set.

- This presentation will cover the scope and timelines of these reviews and the potential impacts

Ofgem’s Access and Forward Looking Charging SCR

electricity north west
Bringing energy to your door

What is the Access SCR?

- **Objective of Access Significant Code Review (SCR):** to ensure electricity networks are used efficiently and flexibly, reflecting users' needs and allowing consumers to benefit from new technologies and services while avoiding unnecessary costs on energy bills in general**.**
  - **Access arrangements** - the nature of users' access to the electricity networks (for example, when users can import/export electricity and how much) and how these rights are allocated:
  - **Forward-looking charges** – the type of ongoing electricity network charges which signal to users how their actions can ether increase or decrease network costs in the future
- **Scope:**
  - Review of the definition and choice of transmission and distribution access rights
  - Wide-ranging review of Distribution Use of System (DUoS) network charges
  - Review of distribution connection charging boundary
  - Focussed review of Transmission Network Use of System (TNUoS) charges

Ofgem's approach

- Ofgem's focus this year is on developing and assessing a long-list of options. They are sharing their thinking through two working papers:
  - 1st working paper - just been published
    - An initial overview and assessment of options for access rights, better locational DUoS signals and charge design.
    - The links between access, charging and procurement of flexibility.
  - 2nd working paper – to be published at the end of the year
    - Distribution connection charging
    - Small user treatment
    - Focused transmission charging reforms
- A shortlist of options will be assessed in further detail early next year, with consultation on their draft SCR conclusions in summer 2020

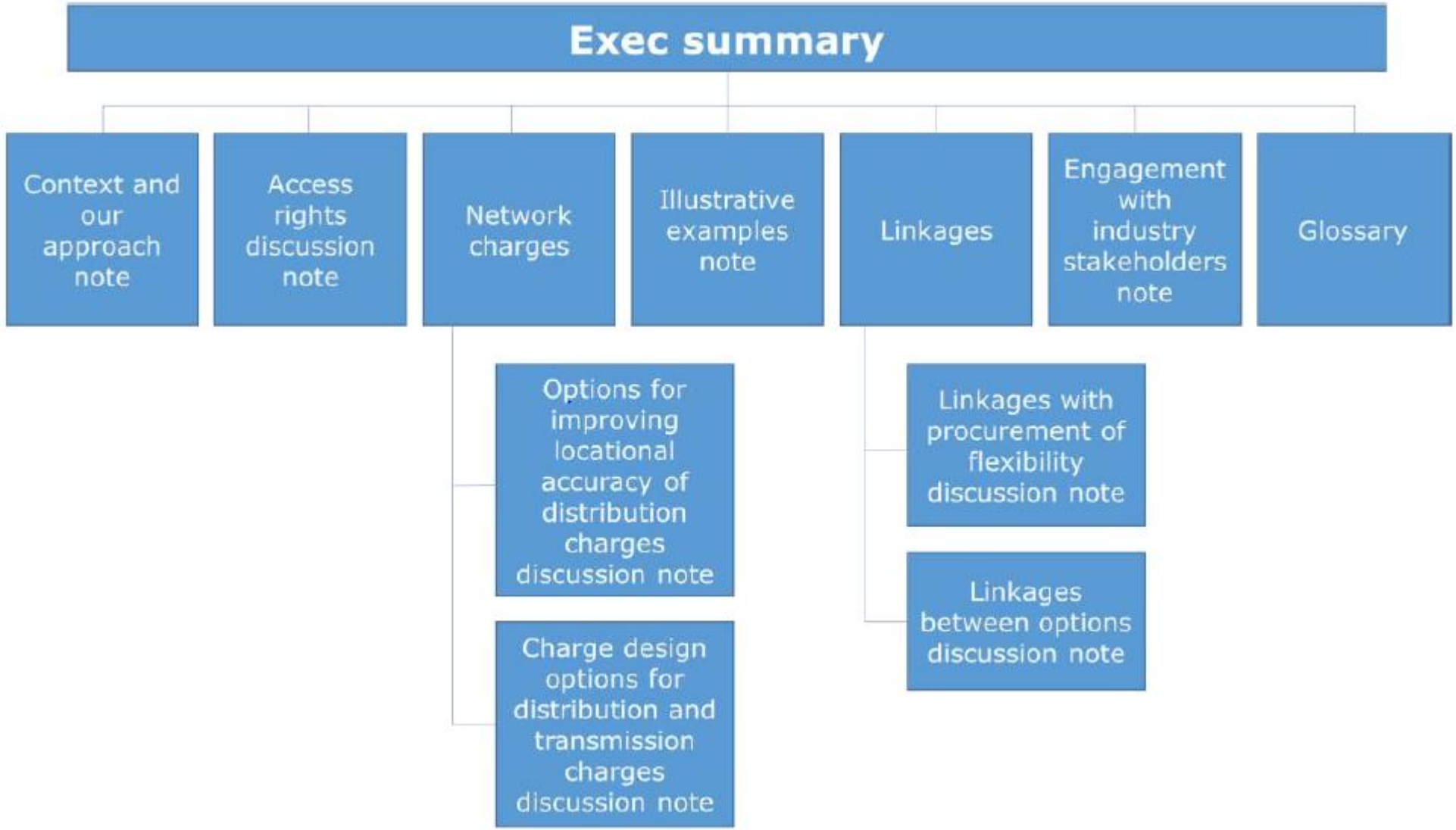
- Further information on the reviews can be found at
  - http://www.chargingfutures.com/charging-reforms/access-forward-looking-charges/proposed-changes-and-potential-impacts/
  - https://www.ofgem.gov.uk/electricity/transmission-networks/charging/reform-network-access-and-forward-looking-charges

Ofgem's Access and Forward Looking Charging SCR

1ST Working Paper – September 2019

electricity north west
Bringing energy to your door

1st working paper – summary of contents



Ofgem's Access and Forward Looking Charging SCR

1ST Working Paper – September 2019

Access Rights

electricity north west
Bringing energy to your door

Reform of access rights - overview

- **Network access rights define the nature of users' access to the network and the capacity they can use** (eg how much they can import or export, when and for how long, and whether their access is to be interrupted and what happens if it is).

- It should benefit all network users if we can make better use of capacity and allocate it in a smarter way.

Reform of access rights – Options being considered

Firmness of rights

- This is the extent to which a user's access to the network can be restricted (physical firmness) and their eligibility for compensation (financial firmness) if it is restricted.

Time-profiled rights

- This would provide choices other than continuous, year-round access rights (eg 'peak' or 'off-peak' access).

Shared access rights

- Users across multiple sites in the same broad area obtain access to the whole network, up to a jointly agreed level.

Other

- Short term rights - This would provide a choice for limited duration access (eg one year) where long term access is not immediately available or where the user does not want it.
- New access conditions - This could involve introducing conditions on access, for example 'use-it-or-lose-it' or 'use-it-or-sell-it'.

Reform of access rights: standardisation

Standardised

- access would have 'off-the-peg' design choices and parameters, with a range of set choices that would fit broad groups of users' or network requirements

Hybrid

- alterations to standardised options to reflect certain users' or networks' requirements or where bespoke options are available within standardised bands or thresholds

Bespoke

- access choices are fully tailored to fit the requirements of a user or network condition

- **The key trade-off is the balance between efficiency and complexity limitations-**bespoke arrangements could result in greater efficiency of network utilisation, but could be very complex to implement (how to charge for them).
- **Hybrid options may be a good compromise-**standardised access options that can be altered to meet individual network or user requirements may be a good compromise.

Reform of access rights: Consequences of exceeding

Financial consequences

- a charge for exceeding access rights

Contractual consequences

- contractual obligations for the user to take specific actions if they exceed their access rights (eg the user is obliged to increase their access rights or install equipment that limits the risk of the user continuing to exceed their access rights, or the user might lose their preferred access choice and have imposed default access terms)

Physical consequences

- the network/system operator could install equipment to limit the ability of the user exceeding their access rights, or it could curtail or temporarily disconnect the user if they exceed their access rights. Ultimately a user could face disconnection or de-energisation if it repeatedly exceeds their access rights

Potential Impacts of Access Right Changes

- **For IDNOs**
  - Will probably need to reflect arrangements in their agreements with customers
- **For ICPs**
  - Probably not significantly affected
- **For Distributed Generation and Demand Customers**
  - Potentially impact existing rights but could introduce more flexible options

Q & A

Ofgem's Access and Forward Looking Charging SCR

1ST Working Paper – September 2019

Forward-Looking Charges

electricity north west
Bringing energy to your door

Better Locational DUoS Charges

- **Locational DUoS charges** are underpinned by the cost models that determine how charging signals are calculated and applied.

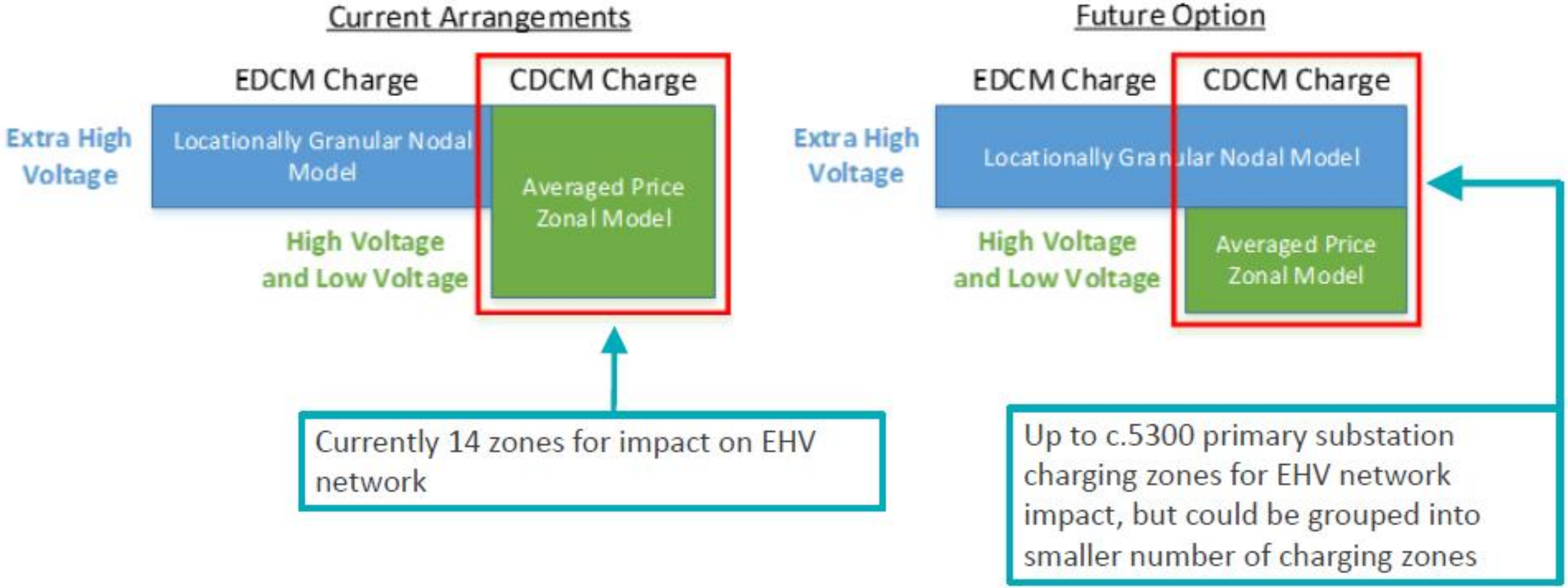
1) **Network Cost Models**
   Options for how forward-looking network costs are estimated

2) **Locational Granularity**
   Options for how distribution network charges vary by location

- Key questions
  - Should charges be based on Short Run or Long Run Marginal Costs?
  - Which costs should be modelled?
  - What is the extent of costs to be charged for
  - Who should receive the signal?
  - How granularly should charges be calculated and applied?

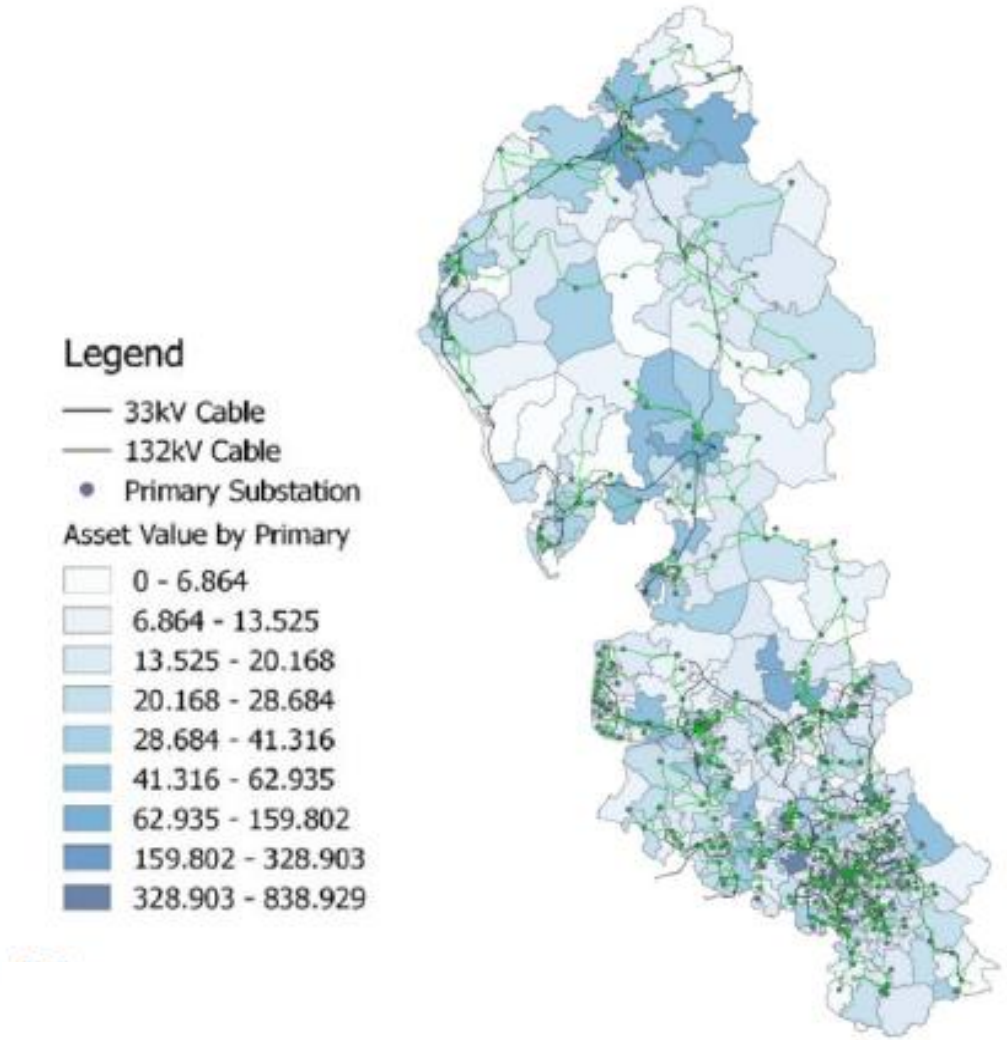
Locational Granularity – integrating across voltages

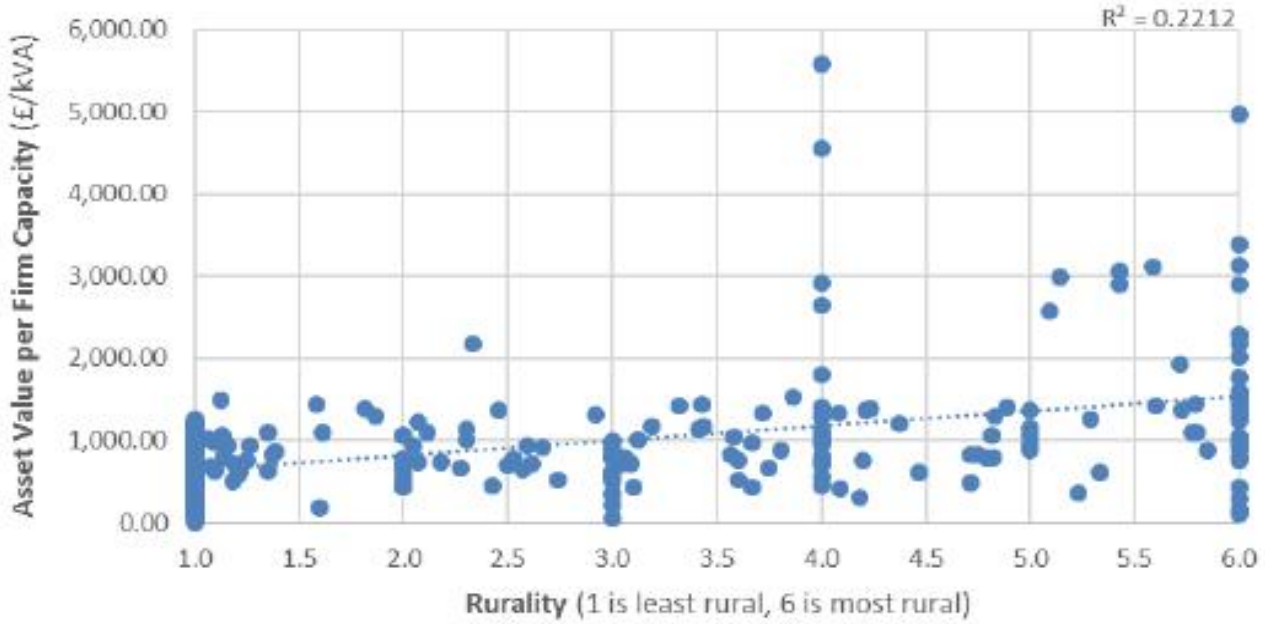
Exposing HV/LV connected users to locational impacts at EHV



Locational Granularity – more granular charges

Extent to which greater locational granularity can be achieved





Source: Electricity North West Ltd network data and Ofgem cost data

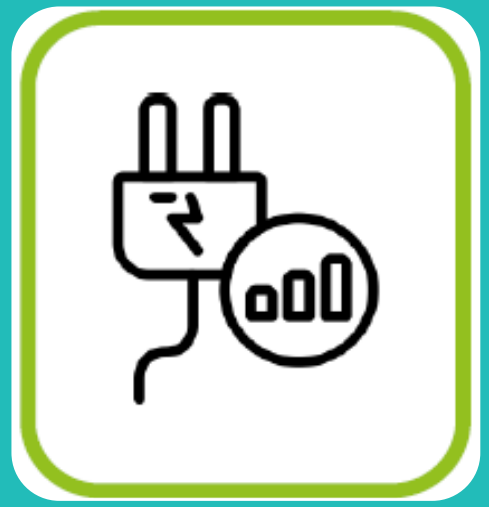
Summary of Ofgem's Current Views

- Ofgem's current view
  - Distribution charges should continue to be based on LRMC based approaches.
  - SRMC approaches may be possible in the future, but do not believe that an administratively set charge would be the correct approach, due to feasibility of implementation
- Ofgem continue to
  - Investigate the merits of different options for the estimation of LRMC.
  - Note a reasonable case for including replacement costs and possibly other network costs closely correlated with development of charging signals.
  - Note present inconsistencies in how costs are treated at different voltage levels
  - Assess ways in which the network could be grouped, particularly at HV/LV, to reflect differences in network costs by primary substation

Network Charge Design

Distribution Option 1: volumetric time of use

- Different unit rates during day
- Customers charged for consumption in time period
- Preliminary assessment
  - Energy not the key driver of costs
  - Likely to be understood by to small users
  - Could introduce seasonality and more locational granularity for LV and HV connected



Distribution Option 2: actual capacity

- Customers are charged in £/kW based on their actual maximum capacity measured after the event
- Charge for may by only during a specified peak period that reflects times of congestion
- Alternatively, different rates for at different time
- Preliminary assessment
  - May be more cost reflective, where costs are driven by peak usage, but dependent on locational granularity of charges
  - Limited advantage compared to Option 1

Network Charge Design (2)

Distribution Option 3: agreed capacity

- Customers agree maximum capacity in advance
- Customers pay a £/kW charge
- Where exceed their agreed capacity, they may need to: pay an excess charge; choose to be curtailed; Upgrade to a higher capacity
- Preliminary assessment
  - May be more cost reflective, than consumption, depends on whether agreed capacity used when planning
  - Potential administrative burden to agree and maintain capacities with millions of domestic customers
  - Consider whether deemed capacities would be appropriate for small users

Distribution Option 4: dynamic pricing

- Critical Peak Pricing (CPP), high charge at peak time and a low or no forward-looking charge at other times. High price periods determined and notified in advance (e.g. day ahead). Rate known typically year ahead.
- Real Time Pricing (RTP), rate is dynamically determined and may change half-hourly and notified a short period in advance.
- Preliminary assessment
  - RTP may not be feasible by 2023, may not be appropriate to administratively set charges
  - CPP, may not be feasible by 2023. Further work to better understand if a form of it would be possible
  - If 2023 is not feasible, could build dynamic pricing into design to go live later

Network Charge Design (3)

Distribution Option 5: Critical Peak Rebates CPR)

- Similar to CPP option, except customers would receive rebates for reducing their consumption or capacity during the peak periods
- A baseline level of usage would need to be agreed with customers
- Preliminary assessment
  - As for CPP, considering whether there is a form that could be possible and the benefits
  - Explore whether a hybrid approach, which combines agreed capacity (providing a baseline) with Critical Peak Rebates

Transmission Option 1: ex-ante Critical Peak Pricing (CPP)

- Current Triad approach a form of ex-post Critical Peak Pricing
- Could consider making changes to address industry concerns: 1. Move to an ex-ante approach, 2. Increase locational granularity to better align peaks with local network conditions, 3. Increase the number of critical peak periods to smooth charges
- Preliminary assessment
  - Further assessment with the ESO of the options and whether there are others that reflect that network planning is based on year round considerations
  - Further work is required to determine if the same approach can be applied to small users

Network Charge Design (4)

Transmission Option 2: agreed capacity

- Preliminary assessment
  - Applying agreed capacity to TNUoS charges would increase consistency with DUoS charges, if the agreed capacity option is also implemented at distribution
  - Simplest approach would be for the ESO to charge on the basis of capacities agreed with DNOs
  - Emphasis would be on access right choices, trading and flexibility procurement to send operational signals

Transmission Option 3: static charging

- Preliminary assessment
  - If a volumetric time-of-use approach is applied to DUoS charges, would increase alignment with distribution
  - A volumetric time-of-use approach may be easier for small users to understand and respond to

Potential Impacts of Forward-Looking Charges Changes

- **For IDNOs**
  - Will probably need to reflect arrangements in their charges to customers
- **For ICPs**
  - Probably not significantly affected
- **For Distributed Generation and Demand Customers**
  - Potentially impact existing charges with greater variability between locations and very different charging structures.
  - However suppliers unlikely to be required to pass the DUoS Charges on directly to customers

Q & A

Ofgem's Access and Forward Looking Charging SCR

2nd Working Paper – End 2019

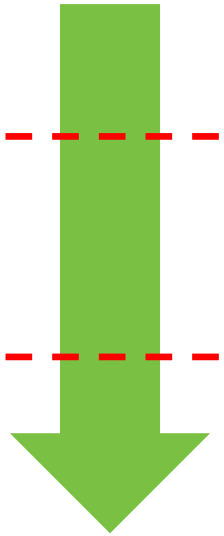
electricity north west
Bringing energy to your door

Ofgem's 2nd Working Paper

- Recap : 2nd working paper – to be published at the end of the year, covering
  - Distribution connection charging
  - Small user treatment
  - Focused transmission charging reforms

Connection charging boundary – options for change

The scope of the work group has been based on the assumption that the current arrangements should provide the baseline, with potential options becoming more shallow. For example:



Keeping the shallow-ish boundary but make other changes (eg, allowing payment over time)

Moving shallower (eg, connecting users only contribute to reinforcement at their voltage level and no higher, with the rest funded by distribution network charges)

Shallow (eg, all reinforcement is funded through distribution network charges)

Small users options

Access SCR would consider as a priority area:

- Better defined access rights and greater choice for small users,
- Distribution use of system charging reform and reforms to the distribution connection boundary
- Potential protections to mitigate the potential adverse impacts of the reforms

Small users workstream will consider:

- Whether **adaptations** to options may be needed to enable **domestic and microbusiness** consumers to **engage with and benefit from** new access and charging arrangements.
- This includes considering **whether any protections may be needed** for certain groups.

Overview of options

Charging options

Considering whether any limits on the level of locational or temporal granularity or degree of change in dynamic signals may be appropriate for specific types of small user demand

Access options

Considering whether any limits should apply on the choice of access option or level for specific groups of small users, for some or all demand, including a potential core access level option

Wider retail provisions

Considering the role for principles-based obligations or other retail market provisions, including possible approaches to engaging with consumers in relation to any new arrangements

Focused review of Transmission Network Charges

Focused review of transmission network charging covers:

Transmission network charging design for demand users

Transmission network charging design for Distributed Generation

The ‘reference node’

Potential Impacts of 2nd Working Paper Issues

- **For IDNOs**
  - Implementing different DUoS tariffs into their tariffs to suppliers
- **For ICPs**
  - Connection Charging, potentially a move to a much shallower connection boundary with more costs treated as general reinforcement
- **For Distributed Generation and Demand Customers**
  - Potentially impacts existing charges generally through the supplier

Q & A

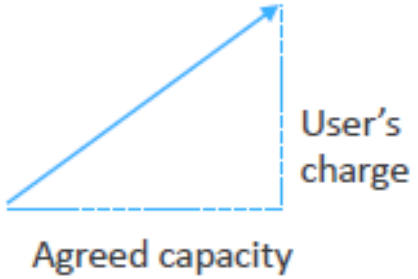
Ofgem’s Targeted Charging Review

electricity north west
Bringing energy to your door

Overview of the Targeted Charging Review (TCR)

- **TCR is looking at the residual element of charging:**
  - 'Residual' is the difference to what is recovered from the forward looking element and the allowed reveune for the network owner
- **The objectives of the TCR are to:**
  - Consider reform of residual charging arrangements for both generation and demand, to ensure it meets the interests of current and future consumers
  - Keep the other 'embedded benefits' that may distort investment or dispatch decisions under review
- **The TCR principles to guide assessment -** reducing harmful distortions, fairness and proportionality and practical considerations
- Minded-to proposals in November 2018. Two leading options for residual charges - a fixed charge and an agreed capacity charge – Ofgem preferred a fixed charge.
  - Over 130 responses. Most supported fixed residual charges, but some concerns with particular aspects of the detailed design.
  - Many respondents said greater granularity was needed in charging segments for non-domestic users.
  - Ofgem have reviewed and refined proposed fixed charge option for non-domestic customers

TCR Leading Options

	ALLOCATION APPROACH	CHARGE BASIS	
Minded-to option: Fixed charge A fixed charge is calculated for each user segment, defined by **Line Loss Factor Classes**. The allocation between segments is based on segment total net metered volume.	Allocated based on net volumes in segment.	Fixed charge	 Proposed segments were based on **line-loss factor class**
Minded-to option: Agreed capacity For those larger users which have **agreed capacity**, a charge is calculated directly. **Deemed capacities** are set for domestic and smaller non-domestic customers.	**Small users:** Allocated based on deemed capacities, with bands for domestic and small business customers.	Charge based on deemed capacity	
	Large users: Allocated based on agreed capacities.	Agreed capacity charge	
Refined proposal: Refined fixed charge A fixed charge is calculated for each user segment, defined by **agreed capacity thresholds** at higher voltages, and users' contribution to **net volumes** at LV.	Allocated based on net volumes in segment.	Fixed charge	

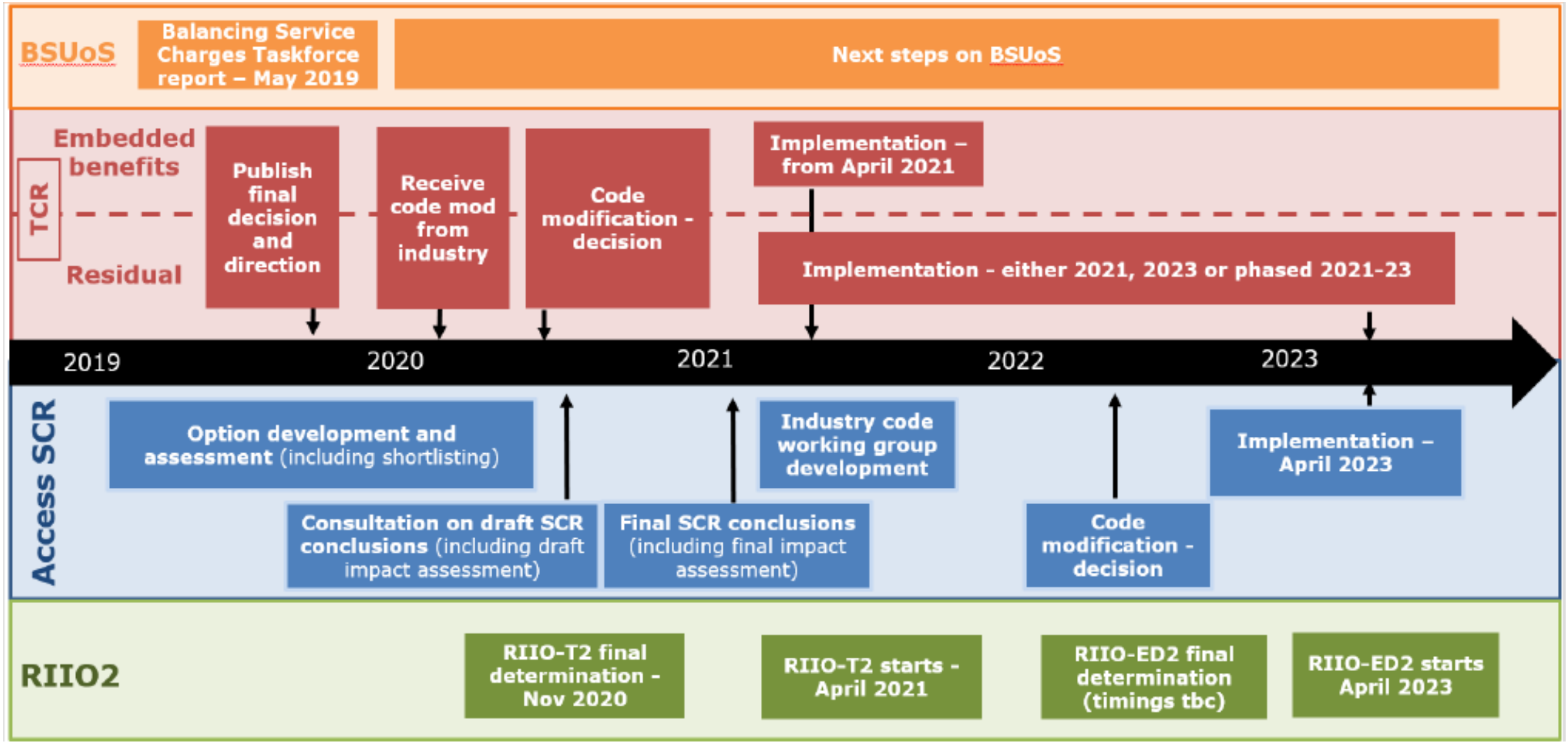
Potential Impact of Targeted Charging Review

- **For IDNOs**
  - Implementing different DUoS tariffs into their tariffs to suppliers
- **For ICPs**
  - None
- **For Distributed Generation and Demand Customers**
  - Potentially impacts existing charges generally through the supplier

Q & A

Significant Code Review Timetable and Summary

Key Milestones



Charging Review Summary

- The reviews are likely to result in major changes to the charging and access arrangements for customers
- Aim is to finalise the proposals mod 2021 in time for DNO RIIO-ED2 Business Plan Submissions
- Reviews are still at an early stage and impacts not yet clear
- Further updates will be provided as further information becomes available.

Q & A

Thank You

electricity north west
Bringing energy to your door