



Forum

# Charging Futures Forum

June 2025

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## Opening Remarks

Georgina Mills, *Director of Energy Systems Management and Security*



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# Agenda

## 09:30 – 11:00

- > 09:30 – Opening Remarks with Georgina Mills, *Director of Energy Systems Management and Security*
- > 09:40 – Transmission Charging and Q&A with Harriet Harmon, *Head of Electricity Transmission Charging* & James Stone, *Head of Electricity Network Charging*
- > 9:55 – Distribution Charging & Transmission/Distribution Boundary Issue and Q&A with Andrew Malley, *Head of Distribution Network Charging*
- > *10:45 Break (15mins)*

3 >

## 11:00 – 11:30

- > 11:00 – Cost Allocation & Recovery Review and Q&A with Kristian Marr, *Head of Cost Allocation and Recovery Review*
- > 11:15 – Closing Remarks with Shai Hassid, *Deputy Director of Electricity Charging and Market Design*

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# Transmission Charging

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<b>Modification decisions since last Charging Futures Forum</b>	<b>Publication date</b>
<b>CMP408:</b> <i>Allowing consideration of a different notice period for BSUoS tariff settings</i>	30 October 2024
<b>CMP415:</b> <i>Amending the Fixed Price Period from 6 to 12 months</i>	30 October 2024
<b>CMP316:</b> <i>TNUoS Arrangements for Co-located Generation Sites</i>	13 December 2024
<b>Modifications with us for decision</b>	<b>EDDs</b>
<b>CMP444:</b> <i>Introducing a cap and floor to wider generation TNUoS charges</i>	Late June to early July 2025
<b>CMP397:</b> <i>Consequential changes required to CUSC Exhibits B and D to reflect CMP316 (Co-located Generation Sites)</i>	30 September 2025
<b>CMP432:</b> <i>Improve "Locational Onshore Security Factor" for TNUoS Wider Tariffs</i>	30 September 2025
<b>CMP315:</b> <i>TNUoS: Review of the expansion constant and the elements of the transmission system charged for</i>	TBC
<b>CMP375:</b> <i>Enduring Expansion Constant &amp; Expansion Factor Review</i>	TBC
<b>CMP418/CMP450:</b> <i>Refine the allocation of Dynamic Reactive Compensation Equipment (DRCE) costs at OFTO transfer / Introducing the definition of Dynamic Reactive Compensation Equipment (DRCE) in the CUSC</i>	TBC

<b>Open letters</b>	<b>Publication date</b>
<i>Outlining our approach to prioritisation of electricity transmission network charging modifications</i>	31 January 2025
<b>Modifications with recent urgency decisions</b>	<b>Publication date</b>
<b>CMP444:</b> <i>CMP444 Introducing a cap and floor to wider generation TNUoS charges</i>	31 October 2024
<b>CMP445:</b> <i>CMP445 Pro-rating first year TNUoS for Generators</i>	5 December 2024
<b>CMP405:</b> <i>TNUoS Locational Demand Signals for Storage</i>	20 January 2025
<b>CMP423:</b> <i>Generation Weighted Reference Node</i>	20 January 2025
<b>CMP432:</b> <i>Improve "Locational Onshore Security Factor" for TNUoS Wider Tariffs</i>	20 January 2025
<b>CMP452:</b> <i>Suspension of TNUoS Payments for generators connecting during the 2024/25 charging year</i>	13 March 2025
<b>CMP447:</b> <i>Removal of designated strategic works from cancellation charges/securitisation</i>	12 June 2025

# Additional Publications – REMA Open Letter 2025



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## What are you publishing and when?

- Open letter to set out our updated thinking on the role of transmission charging in a post-REMA, SSEP context;
- HMG looking to conclude the policy development phase of the REMA programme by 'mid-2025'
  - government REMA timelines to align with the timetable for AR7;
- Our publication will align to HMG timing (so tbc)

## What's it going to say?

Key matters covered include our current thoughts on potential:

1. Interactions between market signals, strategic planning and network charging signals;
2. Options to improve predictability beyond the recommendations of the TNUoS Task Force; and
3. Vehicles for change – how Ofgem and industry could work together to bring about meaningful changes

**NB:** These are big topics, and no decisions are being taken now – we want to consult with you before we start any reform programme, and we will need your views when developing policy!





# Q and A

# Distribution Charging

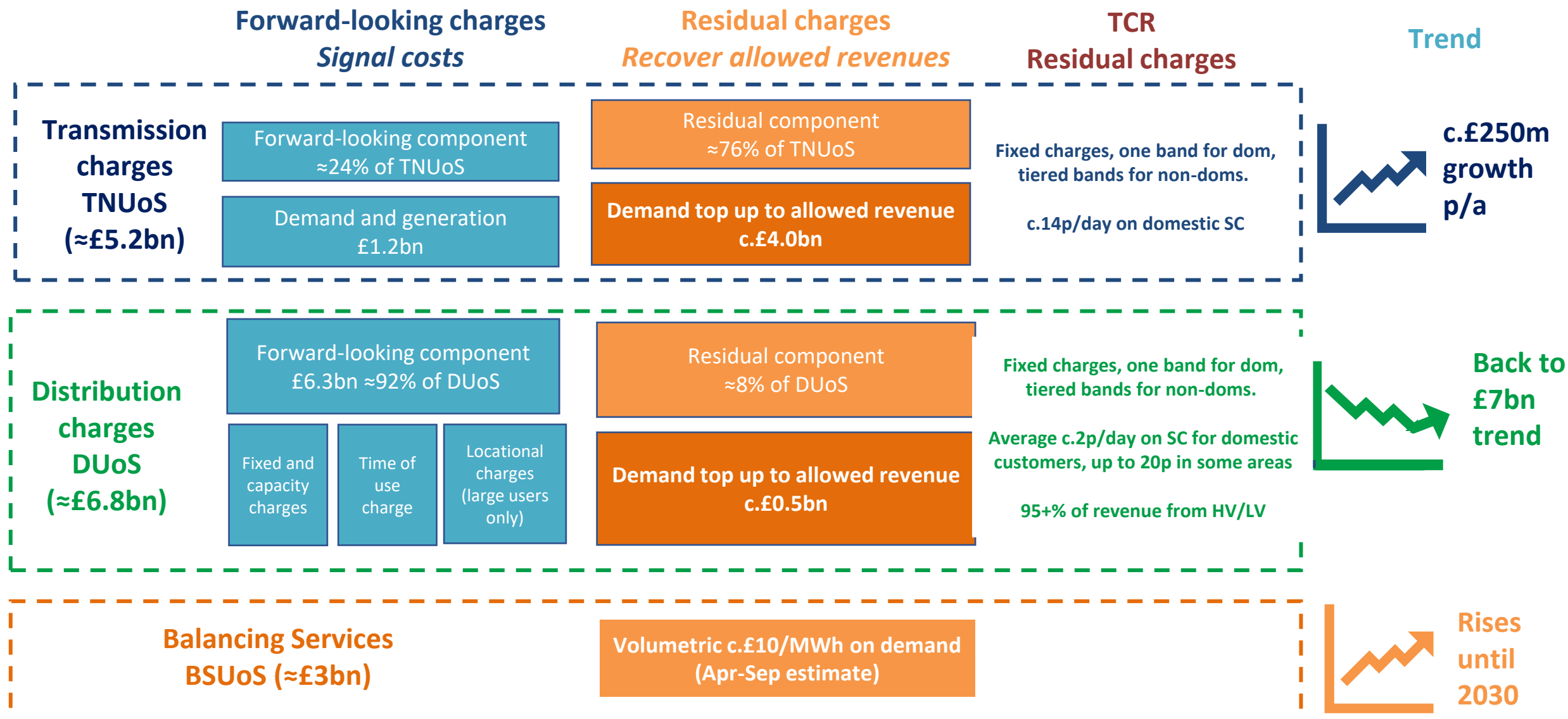
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Network charges account for c.25% of bill, but c.50% of standing charge



# DUoS SCR Update



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Our DUoS SCR reform work, which began many years ago as part of the Access SCR is tasked with ensuring distribution charges are designed appropriately to ensure:

- Electricity networks are used efficiently and flexibly, ensuring network costs are minimised;
- Consumer's needs are reflected, both in terms of accommodating new developments and in recognising that electricity is an essential service; and
- Any change is practical, proportionate and well-managed

We continue to work on the framework for how we will take DUoS reform work forward, but do not propose to prioritise work on detailed changes until more direction is available from the REMA project. We think a key requirement of any DUoS changes is coherency and alignment with market design and transmission charging arrangements to ensure users connect to and use the system in an efficient way. We will also take steer from Ofgem's Energy Cost Allocation and Recovery review (which we will talk about shortly), recognising the important role DUoS charges play in cost recovery.

We will continue to assess mod proposals that link to areas under review as before, but intend to allow mods that are defect-related rather than design/development-related to go ahead wherever possible, assuming the proposer recognises that ongoing work may impact their proposal.

Full article - [Distribution Use of System Charges: Significant Code Review update | Ofgem](#)

### Proposed solution

- Codify **existing industry practice** for complex sites.
- Formalise **local balancing schemes** by introducing 6 complex site classes into the BSC.
- This includes a new “Class 5” for sites under the **same primary DNO substation**, utilising the **exempt supply regime** and **only for renewable and GQCHP**.
- Codify the netting-off of **exempt supply** volumes for **certain\* network charges** within class 5.
- Conduct a post implementation review.

### Potential benefits

- Incentivise **flexible demand** and support **local balancing** – potential to alleviate grid constraints.
- Encourage growth and innovation in **local energy systems**.
- Increase deployment of **renewable generation**.
- Give Ofgem greater **visibility** over arrangements which already exist.
- Provide a **proportionate regulatory route** for facilitating small-scale community supply.
- Support the **government’s Local Power Plan ambitions**.

### Issues we consider

- The avoided network costs of Class 5 schemes would pass to other users, presenting a new ‘embedded benefit’. This would result in increased network charges for non-Class 5 Complex Site users if the network benefits of the P441 solution do not outweigh the avoided network costs.
- This embedded benefit, reflected in BSUoS charges, may not align with the intent of the Targeted Charging Review (TCR), which aims to reduce market signals from BSUoS.
- However, we acknowledge that the BSUoS-related savings are relatively small compared to the overall benefits that local energy deliver to customers and generators. Furthermore, we also acknowledge that these savings are an existing legal entitlement due to the statutes of license-exempt supplier.

### Progress

- P441 Assessment Procedure consultation on July 25
- We expect to receive a Final Modification Report by the end of Nov 25.

# Transmission & Distribution Boundary Issue



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## **T/D Boundary / SGT issue and industry discussions**

- Ofgem's Access SCR highlighted issues with transmission reinforcement costs triggered by distribution connections; no decision was made and further work to identify appropriate solution advised.
- SGTs are the interface between the transmission network and the distribution network. The cost of SGT reinforcement can be split between socialisation and being charged directly to individual connecting customers. The categorisation of the Grid Supply Point (GSP) where SGT reinforcement occurs determines if costs are socialised or passed to an individual. There is no established charging methodology to determine how to pass transmission reinforcement costs to triggering distribution customer.
- The inconsistencies in the current charging arrangements regarding the treatment of transmission reinforcement costs triggered by distribution customers could result in operational and financial challenges. These include high upfront costs and an adverse influence on investment decisions for connecting distribution customers. This could also develop a level of boundary distortion between transmission and distribution and barrier to connections, including viable low-carbon projects which could negatively impact Net Zero and Clean Power 2030 targets.
- Our position at present is to encourage discussion and the development of a solution between industry and stakeholders who are impacted. We have already engaged with various stakeholders on this issue and would welcome further engagement.

### **Presentation**

### **Q&A and wider views**





# Roadnight Taylor

THE INDEPENDENT POWER & ENERGY CONSULTANCY

## **SGT Charging Proposals** Industry Discussion and NGED Concept

Revision: R2 | June 2025

# Introduction

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This slide pack was initially created for a Client who is willing for the thinking to be shared for the greater benefit of the energy industry and those seeking to make connections to the distribution network or increase their capacity.

It is appreciated that Distribution Network Operators have discussed this topic alongside the ENA during 2024, yet with proposed Connection Reforms utilising significant resource, there is a concern that this issue will not be resolved in 2025. With Gate 2 Offers and associated Variation Offers expected in late 2025 and early 2026, this is a significant risk to low carbon generation and storage developers, decarbonising industry, Hydrogen production facilities and emerging industries alike.

**The following slides are to aid discussion, facilitating a baseline for any modification proposal ahead of it being brought forward. Slides are not to be used outside the context of this slide pack.**

# Connection Site Definition

14.2.5 In general, connection assets are defined as those assets solely required to connect an individual User to the National Electricity Transmission System, which are not and would not normally be used by any other connected party (i.e. “single user assets”). For the purposes of this Statement, all connection assets at a given location shall together form a connection site.

14.2.6 Connection assets are defined as all those single user assets which: a) for Double Busbar type connections, are those single user assets connecting the User’s assets and the first transmission licensee owned substation, up to and including the Double Busbar Bay; b) for teed or mesh connections, are those single user assets from the User’s assets up to, but not including, the HV disconnector or the equivalent point of isolation; c) for cable and overhead lines at a transmission voltage, are those single user connection circuits connected at a transmission voltage equal to or less than 2km in length that are not potentially shareable.

14.2.7 Shared assets at a banked connection arrangement will not normally be classed as connection assets except where both legs of the banking are single user assets under the same Bilateral Connection Agreement.

14.2.8 Where customer choice influences the application of standard rules to the connection boundary, affected assets will be classed as connection assets. For example, in England & Wales NGET does not normally own busbars below 275kV, where The Company and the customer agree that NGET will own the busbars at a low voltage substation, the assets at that substation will be classed as connection assets and will not automatically be transferred into infrastructure.

**Anything else is defined as Infrastructure.**

# Problem Statement

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Distribution customers who trigger new Supergrid Transformers (SGTs) currently face a postcode lottery as to how much they must pay depending on the classification of GSP they are connecting into:

- **The SGT works are free to the customer (socialised via TNUoS) if the GSP is an infrastructure site**
- **The SGT works are passed directly onto distribution customers if the GSP is a “customer site”**
  - Where there are multiple embedded generation customers triggering the works most DNOs currently share this cost proportionally between them
  - Where there are demand customers triggering the works some DNOs pass the full cost onto the first demand customers and other customers get a ‘free ride’
- **DNOs aren’t explicitly funded for all connections led transmission reinforcement (some covered under DNO business plans while remainder covered through customer contributions)**
- **Strategic or general infrastructure reinforcement triggered by the DNO is recovered by ESO/NGET by increasing GSP annual exit charges**

**Major issues can occur if there are changes between the above charging scenarios due to additional customers contracting.**

# NGED

## Slides Extract

# Size and Scale

- Roughly 60% of our GSPs are connection assets, whereby all asset costs are funded by distribution customers
- The cost treatment of those assets has been purposefully overlooked by Transmission Charging Review (TCR) and Significant Code Review (SCR)
- We are funded to develop/maintain these assets through New Transmission Capacity Charges (NTCC) totex allowance and Transmission Connection Point Charges (TCPC) pass through, which can be funded through existing LRE allowances or an existing Uncertainty Mechanism
- As at June 2024, we have ~ £440m of NTCC CAPEX which we have agreed to progress with the ESO, which we have passed through to customers

# Solution strategy (proposed for trial)

- Current treatment doesn't explicitly agree socialisation of these costs for generation, so any generation connection triggering these works could be potentially liable for all costs. This is a massive barrier to decarbonisation.
- NGED recommends levelisation of the charging boundary, capacity based charging and implementation of DSO flexibility markets; to do this, it requires the DNO to be allowed to socialise unapportioned costs (via exit charges over 40+ years) – albeit with the expectation we will aim to fully recover all costs. As more customers accept contracts for apportioned capacity, Transmission construction agreements will be revised with NESO to remove any residual unapportioned costs.
- We should not agree to strategic investment in all GSPs, but trigger them based on criteria – i.e. where we can credibly demonstrate the need from demand will follow soon as evidenced from our DFES and stakeholder engagement processes



# Actions required for delivery

- The currently agreed CCCM table excludes transmission assets and needs to be rewritten
  - NGED proposes the additional red rows (added below) and seeks a letter of comfort from Ofgem to progress as a trial
  - Ultimately all DNOs need to agree to change the CCCM
  - We would need Ofgem to agree with the changes and approve this document:

Voltage of Scheme Assets	Voltage at the POC			132kV
	LV (below 1000V)	HV (above 1kV but less than 22kV)	EHV (above 22kV but less than 72kV)	
Transmission	We fund	Apportioned (>1MW)	Apportioned	Apportioned
Transmission/132kV Substation	We fund	Apportioned (>1MW)	Apportioned	Apportioned
132kV Network	We fund	We fund <sup>1</sup>	Apportioned	Apportioned
132kV/ EHV Substation	We fund	EHV circuit breakers only Apportioned	Apportioned	Not applicable
EHV Network	We fund	Apportioned	Apportioned	Not applicable
132kV/ HV Substation	HV circuit breakers only Apportioned	Apportioned	Not applicable	Not applicable
EHV/HV Substation	HV circuit breakers only Apportioned	Apportioned	Not applicable	Not applicable
HV Network	Apportioned	Apportioned	Not applicable	Not applicable
HV/ LV Substation	Apportioned	Not applicable	Not applicable	Not applicable
LV Network	Apportioned	Not applicable	Not applicable	Not applicable

- To enable the trial to proceed, NGED requests a letter of comfort from Ofgem declaring:
    - It is in line with the SCR decision that transmission reinforcement for demand and generation should be socialised using the same voltage rules identified in the SCR
    - NTCC can be used to fund the socialised elements of transmission reinforcement for generation. LRE mechanisms are available if this is outside DNO allowances.
    - DSOs would be expected to conduct CBAs for non-wires alternatives ahead of sanctioning reinforcement and may lead to NTCC-funded flexibility markets.
- NGED will work with the ESO/NGET to provide capacity released figures alongside each construction agreement.



# Comparison of a level playing field

	Infrastructure Site	Connection Site
Wider Transmission Strategy and Costs	ESO	ESO
Local Transmission Reinforcement Strategy	ESO	DSO
Local Transmission Reinforcement Costs	ESO/TNUoS	DSO/DUoS
Transmission cost apportionment	Socialised	Recouped from individual projects
Transmission Second Comer rules	N/A	None
Distribution Reinforcement Costs	DSO/DUoS	DSO/DUoS
Distribution cost apportionment	As per CCCM	As per CCCM
Distribution Second Comer rules	As per ECCR	As per ECCR

We want this to be more like distribution reinforcement charges, which are recouped from individual projects where material, but socialised otherwise.

# What are other DNOs doing?

There is a difference of approach across DNOs, some of which is due to the regional variation of DER uptake and others due to transmission voltage levels in Scotland.

NGED has the highest volume of DER seeking connection across all DNOs and double the amount of connection asset GSPs than any other DNO, so we are seeing the biggest impact.

Table 1: DNO Methodology Summary

DNO	Current Methodology	Methodology Detail
ENW	Hybrid socialisation of costs through DUoS but passing through ESO Securities.	Hybrid approach: recent situations have been <b>socialised through DUoS</b> but with ESO securities passed through to connecting customers.  But would most likely charge upfront if there was only one customer triggering the work
NGED	Charged upfront to connection customers, including pass through of securities and liabilities from ESO	Where the BCA outlines work and securities/liabilities these are passed through directly to identified customers through SoW process. <b>Apportionment occurs based on capacity</b> across all users identified against the works and is revisited based on amendments to the BCA.
NPG	Charged upfront to the connecting customers	Costs are <b>apportioned</b> between customers <b>based upon required capacity</b>
SSEN	<b>Socialisation of costs through DUoS</b> , but passing through ESO Securities	<b>Socialisation of costs through DUoS</b>
SPEN	Charged upfront to connecting customers (including pass through of securities from ESO)	Costs <b>apportioned</b> between customers <b>based upon required capacity</b> .
UKPN	Charged upfront, following cost profile, to the connecting customers (as well as securitisation profile covering wider works liability)	Costs are <b>apportioned</b> between customers above 5MVA / 1MW only, <b>based upon required capacity</b> against transmission constraint, i.e. if demand transmission constraint, connecting customers with requested demand > 5MVA would share the cost of the T-work. Smaller generation not subject to Appendix G and demand <5MVA viewed as background load-growth

# Other

# Possible Solutions – RT Open Letter

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1

Socialise all SGT reinforcement through **TNUoS**

2

Socialise all SGT reinforcement through **DUoS**

3

Pass SGT reinforcement charges on to triggering distribution customers but **apply a CAF to fix the proportion paid by each customer.**

# Possible Solutions – SCG Transmission Charging Reform subgroup

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1. Socialise all SGT reinforcement through TNUoS
2. **Socialise all SGT reinforcement through DUoS**
3. Use High-Cost Cap threshold. Socialised below the threshold. Customers pay above threshold
4. **Use a Capacity (MW) Cap and then at a standard cost per MW above the CAP. Socialised below the threshold through DUoS.**
5. **No change to current approach of connecting customers bear full cost. Just standardise approach between DNOs.**
6. Use MW/Fault Level proportioned basis, as with CAF Rules and any cost above High Costs Cap. The proportion that is not charged to the customer will be socialised through DUoS.

**SCG group have previously suggested options 2, 4 or 5 are preferred.**

# Code Change Proposal – OPTION 1

## Socialise all SGT reinforcement through TNUoS

- CUSC code change required. New asset classification suggestion:
  - **DNO Shared Connection Asset** – *A Transmission Connection Asset which connects more than one embedded customer via a licensed distribution network*
- Charging rules for these assets to be aligned with those for Infrastructure Assets – i.e. funded solely via TNUoS

### Benefits

- Same charging mechanism now for ALL SGTs regardless of whether a GSP is an infrastructure site.
- NESO and TOs could use existing economic assessment mechanisms to determine whether new SGTs are an economically efficient solution to prevent excess TNUoS burden.
- Fairly simple CUSC Code Mod

### Disadvantages

- Disadvantages
- Significant additional TNUoS Burden
- Lack of locational incentive for generators to locate under less constrained GSPs
- Not preferred by SCG Workgroup? Find out why?

# Code Change Proposal – OPTION 2

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## Socialise all SGT reinforcement through DUoS

- DCODE code change required.
- DNO Connection Charging Methodology update required

### Benefits

- DNOs in control of solution and could chose to deploy flex alternatives
- Fairly self contained DCUSA Code Mod

### Disadvantages

- Creates different charging arrangements for GSPs which are infrastructure site – no standardisation
- What happens when a GSP is re-classified as an infrastructure site because of a new tertiary connection?
- Needs to be raised by DCUSA party

# Code Change Proposal – OPTION 3

## Apply a CAF (£/MW) approach to SGT charging

- DCUSA mod required to allow DNOs to extend DNO charging principles to Transmission Connection Asset Costs
- CUSC code change required to deal with recovery of residual costs if new asset is under-utilised.

Propose all DNOs should charge for SGTs annually to manage potential flip/flopping between different charging rules for infrastructure/customer sites?

### Benefits

- Maintains locational incentive for generators and moveable demand to locate under less constrained GSPs
- Provides upfront certainty on cost to connecting customers
- Reduces Use of System burden

### Disadvantages

- Complex changes
- Creates different charging arrangements for GSPs which are infrastructure site – no standardisation
- Still places significant cost burden on connecting customers
- Interaction with High-Cost Cap unclear



# Solution Requirements

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## Requirements

1. Cost (Scope) Certainty
  - a. Proportional allocation as done today does not work
  - b. Indicative prices very far out from delivery are subject to significant change
2. Cost Reflectivity – Paying for demand capacity required only (e.g. note the whole GSP)
3. Clear and Consistent Scope
4. Securities and Cancellation Charge – Potentially a different Mod that requires to align with the output
5. Understand the Use of System Charge impact of different scenarios
6. Send locational capacity signal?
  - a. Potentially for certain technologies (e.g. can't mode a distillery)
  - b. Be mindful of the bidder picture. Do not block other changes.
  - c. Interaction with SSEP / CSNP / RESP (Does the latter sufficiently cover the T/D interface?)
7. Socialised up to level of the SSEP. Above this the costs are passed to the connection customer concept (potentially with cost protections for above the SSEP?)

# Solution Requirements

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## Requirements ... Continued

8. Minimise or remove the distortions seen through the current approach (e.g. relative postcode lottery)
9. Facilitate collaboration to provide the right signals for investment
  - a. Assessed at NESO level
  - b. Individual contracts for each customer, covering each individual site
10. Do not constrain REMA
11. Lowest overall cost
  - a. System / Network Costs (note these are not necessarily the same)
  - b. Customer / Consumer Bills (note these are not necessarily the same)
12. Urgently remove barriers to connecting projects passing through the reformed connections process (e.g. SGT Charging itself and the downstream barriers and unintended consequences this creates)
13. Complementary to Ofgem End to End review and fill any gaps
14. Timeline – concept to certainty is crucial to investment decisions (rather than urgency of change)
15. Simplification to facilitate net zero and GB decarbonation (linked to point 8)

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# Q and A

# Cost Allocation Recovery & Review - Update

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# Q and A

## Closing Remarks & Next Steps

Shai Hassid, *Deputy Director of Electricity Charging and Market Design*



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**We do this by:**

- **working with Government, industry and consumer groups to deliver a net zero economy at the lowest cost to consumers.**
- **stamping out sharp and bad practice, ensuring fair treatment for all consumers, especially the vulnerable.**
- **enabling competition and innovation, which drives down prices and results in new products and services for consumers.**