Electricity Distribution

Cost Sharing Electricity Network Connections for Demand Clusters

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Contents

Summary | We want to explore mechanisms to share connection costs between groups of customers in the same location seeking additional power

- **Currently customers wanting additional demand face variable costs which can be:**
  - high upfront (lumpy)
  - disproportionate to the demand required
  - have uncertainty over payback
- **These costs and risks could be shared between groups of demand customers, or potentially between them and bill payers, but there is a lack of coordination**
- **We are seeking a project to develop replicable models for cost sharing frameworks, or potentially innovate around justification**

Electricity Network Connections Context | Who pays for what?

Current Framework for Connection Costs

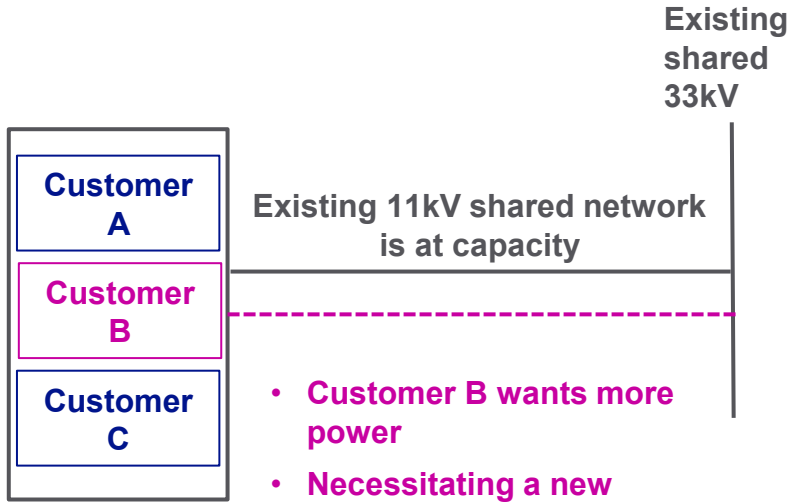
- Since 2022, connecting demand customers usually **only pay for** the **extension assets** which are for their "**sole use**".
- Network reinforcement required to support new connections is generally funded by bill payers.

Impact: Lowered and reduced variability of connection costs

Limitations to the framework

- Connecting customers who trigger new network, initially only used by them, pay for it all
- There is a mechanism for payback – "**ECCR"**.
- Whether payback occurs depends on future customers connecting to the same network

Impact: Connecting customers still face variable, sometimes high upfront costs, with uncertainty over payback



Network Investment | DNOs can strategically invest to meet clusters of new demand, but the bar is high for justification

	Strategic / Anticipatory	Customer-Led	
Type of investment	**Reinforcement**		**Extension Asset – Sole Use**
Funded by	Distribution Use of System Charges		Connecting Customer
Timescale	From 10 years up to 0 years ahead of constraint impacting	Reactionary	
Trigger	Based on estimation of future demand and where this causes a constraint on the existing network - Network Development Plan	Based on application from customer and accepted offer	
New or existing network?	Builds up capacity of existing shared use network Could involve new route to accommodate increased demand from multiple customers		Existing or new sole use asset: A new route/area where network doesn't currently exist Or new cable size along existing route, dedicated to one customer

The problem - network connections | High upfront costs, combined with risks of payback prevent or delay clusters of customers who might want to electrify or develop

THE PROBLEM

Connecting customers can face high upfront costs

The lumpy nature of these costs, with only the *potential* for cost recovery can mean either:

a) Development/electrification doesn't happen or is delayed

b) Sub-optimal network solutions: lack of future proofing

There is an opportunity to coordinate better between connecting customers in the same location to manage costs, risks and deliver better network solutions

EXAMPLE

Industrial Cluster/Port

Customer	3 year trajectory (MVA)	6 year trajectory (MVA)
A	1.5	5
B	2	4
C	3	5
D	2	4
Total	8.5	18
Solution	11kV	33kV

1. Existing 11kV Network – is constrained

2. Any individual request for new capacity is quoted for entire new 11kV cable @~£5M

3. The first comer might get pay back via ECCR but this is risky, and high upfront cost – so they don't proceed.

Existing 33kV Network

4. Longer term demand justifies a new 33kV connection - @£8M. This will be more cost effective in the longer term.

5. In the absence of intervention, these individual customers will apply incrementally, face higher costs, and delays in getting the power they want.

Electricity Network Connections Context | What's changing?

Regional Energy Strategic Plans (RESPS)

- a list of "strategic energy need" sites will be agreed with Ofgem, and be incorporated into DNO's business plans for ED3. Expecting ~150 sites across GB.
- This will address a small number of sites - there are likely to be many other which could benefit from de-risking or cost sharing frameworks

ED3

- Potential for ED3 incentives on DNOs to increase capacity - could result in more "enhanced schemes" being identified by the DSO/DNO

So in summary, there are a range of (potential) mechanisms, to address the problem, each with their own limitations

Mechanism:	Strategic Network Investment by DSO	Pay back to first comer via ECCR	Areas of strategic need via RESPS	ED3 Incentives
Limitations:	Evidence bar high Significant resource impact on DSO No ring fencing	High upfront costs to first mover Risk that future demand does not appear	Small Scope compared to need	Unclear if they will happen Only enhancing existing schemes

Potential Solutions | There are a range of options, there may be others

Option	Cost Sharing Frameworks for Clusters of Demand Customers	Regulatory Sandbox for strategic network investment	Hybrid
Detail	Tools which allow customers coordinate and share: • their current and future demand • A connections application, capacity and the costs • May include development of special project vehicles between customers • Could be DNO or customer owned and led	• Develops clearer criteria for how how strategic network development is justified and or incentivised for clusters • Could build on lessons learned from RESP “areas of strategic need” process	Blends the two options
Who pays?	Connecting customers	Bill payers	A mixture
What’s innovative?	Customer engagement & connections product offering	Regulatory requirements on justification for strategic network investment	Both