

Challenge Group meeting – 10 June 2020



Objectives

Objective of this session:

- Quick update on our Access SCR and our proposed engagement with you over the coming months (for those that were unable to attend CG session yesterday).
- Seek feedback on connection boundary and access right option definition and assessment.
- Seek initial feedback on approach to packaging of options.

These slides represent initial preliminary thinking. We are still developing our thinking and we are keen for you to input into it.

Quick reminder

Objective of Access Significant Code Review (SCR): We want 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.

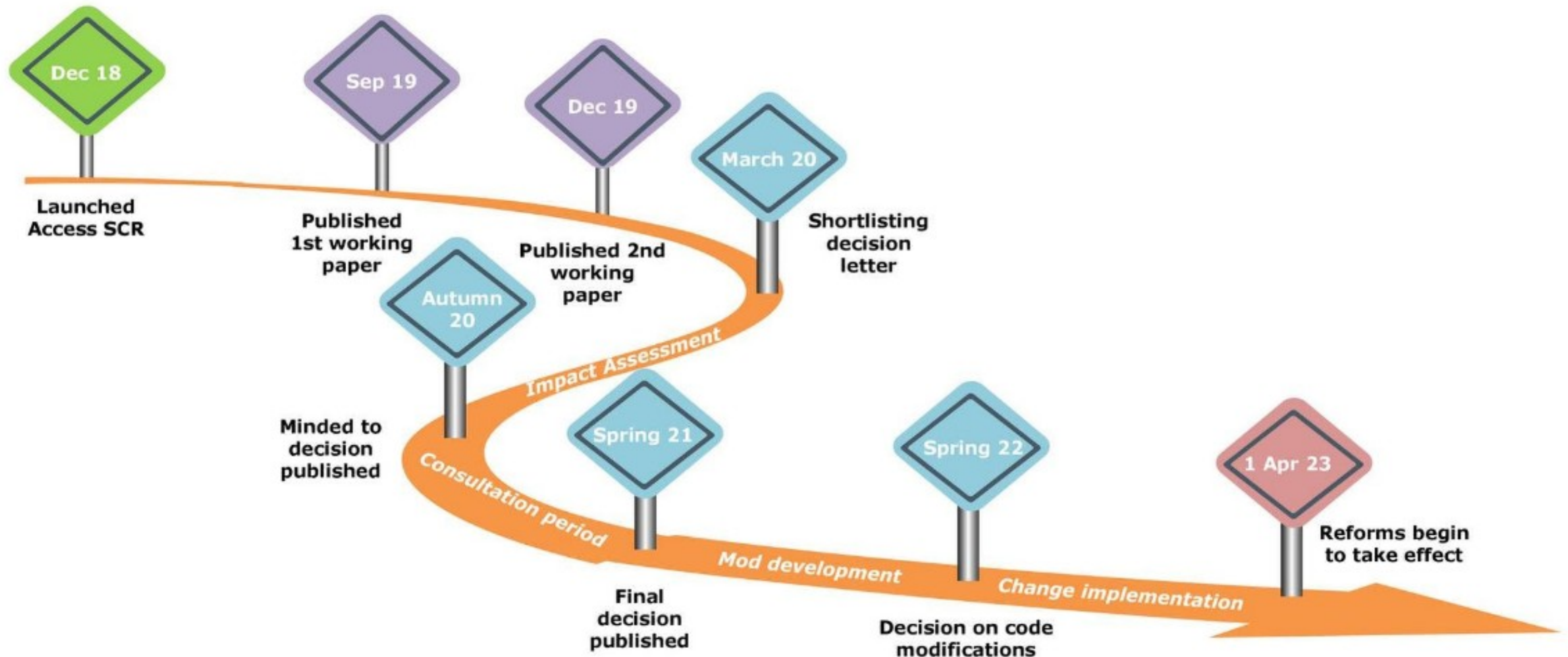
- We launched the Access SCR in December 2018. The scope is:
 - Review of the definition and choice of transmission and distribution access rights
 - Review of distribution connection charging boundary
 - Wide-ranging review of Distribution Use of System (DUoS) network charges
 - Focussed review of Transmission Network Use of System (TNUoS) charges
- We are assessing options against three key guiding principles. We will need to consider trade-offs between these guiding principles:
 - Supporting efficient system development
 - Reflecting energy as an essential service
 - Practicality and proportionality of implementation

How we propose to engage with the CG

- Thank you to those who responded to our survey regarding your availability to continue engaging with us. As most respondents indicated they would be able to continue engaging in some capacity, we expect that this means that we will continue to receive input from industry on our reforms.
- Instead of organising full day meetings, we are organising shorter webinars on specific topics.
 - We held a session yesterday on DUoS reforms.
 - We intend to hold further sessions later this month on our focused TNUoS reforms and our approach to developing the Impact Assessment.
 - We will continue to engage with the CG over the next few months (eg as we develop our IA).
- We are keen for these sessions to be interactive:
 - We have a series of Menti questions throughout the presentation to get your feedback– open it now on your phone or another tab on your computer (<https://www.menti.com/>)
 - Please mute yourself. If you have a question or comment as we present – please add it into Menti.
- Please email any comments on these sessions or comments/evidence on our proposed reforms to **FutureChargingandAccess@ofgem.gov.uk**
- **Please be aware that this CG session is being recorded and will be available to those that can't attend right now.**

Overall timeline

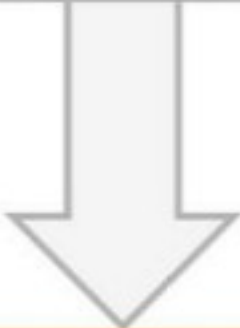
The last time we met was prior to the COVID-19 lockdown. We intend to continue our future charging and access reforms broadly in line with previous plans. At this stage we are only anticipating slight adjustments to timings, as set out on subsequent slides, but will keep this under review.



Access rights

Reminder of access rights workstream

There are four components of our Access SCR review:

- A review of the definition and choice of access rights for transmission and distribution network users
 - A wide-ranging review of DUoS charges
 - A review of the distribution connection charging boundary
 - A focused review of transmission network use of system (TNUoS) charges.
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What are access rights? – 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.

Current arrangements –

- Traditionally users have had little choice of access rights.
- DNOs have begun offering "*flexible connections*" which have no defined cap on the extent to which they can be interrupted. Flexible connections have allowed users to connect cheaper or quicker connection.

Why are we considering reforms? We consider that the development of additional, well defined access choices could:

- Help support more efficient use and development of network capacity.
- Ensure that users get the level of access to meet their needs.

Options that we took forward to shortlisting

We are focusing on four options for **larger users**:

Shortlisted option	Description
1. Curtailable/non-firm access rights	Choices about the extent to which a user's access to the network can be restricted.
2. Time-profiled access rights	This would provide choices other than continuous, year-round access rights (eg 'peak' or 'off-peak' access).
3. Shared access rights	Users across multiple sites in the same local area obtain access to the whole network, up to a jointly agreed level.
4. Distribution users access to the transmission network	Options to clarify the rights of distribution-connected users to access the transmission network.

Over the last couple of months we have been focusing on developing and assessing the options for change against guiding principles. We are seeking feedback emerging thinking, to inform options that we model.

In this session we will focus on non-firm, time-profiled and shared access rights.

At this stage we have principally focused on distribution access choices but will be developing views on extent to which choices could apply at transmission. We also will seek feedback on options to clarify distribution users access to the transmission network in a separate session alongside focused TNUoS reforms.

Designing non-firm options

Definition of non-firm access rights

Physical conditions: access defined by design of network/source of constraint

v

Consumer experience: Access defined by user experience

Requires network operators to translate physical assets into consumer experience. Should provide users with more certainty about experience of curtailment and develop network in accordance with consumer experience.

Number of curtailments

v

Hours curtailed (could be shown as %)

v

Energy imported/exported curtailed

Number of hours curtailed a good reflection of users experience. Users can conduct their own forecasts to understand impact on export/import. "Energy imported/exported curtailed" would require network operators to forecast assumed import/export levels – this may not be accurate.

Impact of exceeding curtailment level

Trigger assessment of options to rectify

Compensation

RIIO penalties

Assessment of options should identify the most efficient intervention (eg procurement of flex or paying compensation). Depending how compensation is set, it may over/under incentivise action. RIIO could deliver optimal system wide outcomes, but may provide little certainty for individual users.

How do you think that non-firm access rights should be defined, and why?

Consumer experience with max # of curtailments with min # of hours curtailed

Uncompensated non-firm access rights undermine the flexibility markets we need to manage the network.

None of the above. It should be % of capacity available, per hour. That will work for all users - AND storage. (Flexibility needs the availability, not just MWh throughput)

They should include compensation i.e. be financially firm

User experience and a combination of hours and % energy

Users should be compensated if limits exceeded

For some users, many short curtailments can be worse than one long one. Probably need to measure both.

should be peak demand history plus a percentage

They should be compensated for curtailments.



How do you think that non-firm access rights should be defined, and why?

as far as poss: specify which hours likely curtailed (overnight, season, peak)

Hours of curtailment ok - must be very granular % though.

If non-firm access rights are to be used, how flexible will they be? The right number of hours in 2020 may not be the same for 2025

Lack of firm access is a major difference between distribution and transmission. We should be working towards financially firm access at Distribution.

Financial firmness solves all

There is a need for a limit placed on a number of times curtailed to manage expectation and improve investment signals to project developers. Compensation should be part of package (e.g. financially firm access rights)

Probably best defined as a price that the user is compensated for curtailment. The firmer the connection, the higher the price. Completely non firm has a price of zero

Connection should be financially firm with compensation reflecting the risk faced by users

compensation and financial firmness enables price discovery which will help 1) select the most economically efficient curtailment actions and 2) identify whether reinforcement is economically more efficient than curtailment



How do you think that non-firm access rights should be defined, and why?

should be financially firm with compensation otherwise its a free turn down option for the DNOs

firm financial rights

Why wouldn't the network be forecasting assumed import/export levels? Surely they are doing this in order to manage the system, know what curtailment is needed, and what flex to procure to avoid this?

Financially firm is the only way to create a level playing field. Without this the SCR is almost completely a waste of time in the long run (for net zero)

Consumer impacts seems sensible. For example number of hours of curtailment would allow moving closer to firm access by reducing hours of allowed curtailment (eventually to zero).

Compensation at a price set by the parallel flexibility markets.

Compensation. Automatically.

users should be compensated otherwise its a free option for the dnos

There should be an assumption that customers will get power when they want it. i.e. place a high value of compensation on customer curtailment



How do you think that non-firm access rights should be defined, and why?

Test

If firm you get compensated. Non-firm should be a level of curtailment (customer experience) before compensation kicks in. Whether hours or number should be options customers can choose.

a more preferable treatment would be further investigating non-firm access and connect and manage policy at distribution (greater alignment with transmission)

G of zero-carbon curtailed?



What should happen when agreed curtailment levels are exceeded, and why?

Compensation!!!!

The users should be compensated by the network owner

Compensation

Once you go over the agreed curtailment level, the connection is firm, and they should have the same compensation as a "firm" user

Either financial compensation or RIIO penalties. However, the issue may be that the DNO "over-estimates" the curtailment to avoid this.

Users should be compensated. They may plan on basis of agreed service levels, so this needs to be offset.

Compensation because this starts to create a market

Compensation at a bare minimum

ratchet charges as in gas

What should happen when agreed curtailment levels are exceeded, and why?

Punitive Financial compensation

How will this feed into CBA for reinforcing grid? For EVs and local energy balancing?

Test

Compensation fits with financially firm access.

With financial firm agreements, a financial costs for exceedance

Compensation i.e. a modified financially firm connection where the financial firmness only kicks in after a certain agreed level of curtailment

Compensation. This should be co-ordinated with the ESO as some contracts make it the users responsibility, even though it is the network in charge of the curtailments...

Compensation and RIIO penalties can be linked i.e. penalties fund compensation.

Customers should be compensated. They have paid network charges for a service, so should be compensated if that services is not provided. If cheap charges are offered in exchange for non-compensated constraints, there would be no price signals.



What should happen when agreed curtailment levels are exceeded, and why?

compensation should be part of the package in some form

needs a window - not to incentivise DNO/TO to be overly conservative, but to still be accountable for the quality of their network



Designing non-firm options

In terms of the options that users could choose from:

	Level of curtailment	% of the time
1	Standard connection	Rare typically only for maintenance reasons
2	438 hours per year (36.5 hours per month)	5% of the time
3	876 hours per year (73 hours per month)	10% of the time
4	1,314 hours per year (109.5 hours per month)	15% of the time
5	1,752 hours per year (146 hours per month)	20% of the time
6	Unlimited (current "Flexible connection")	Unlimited

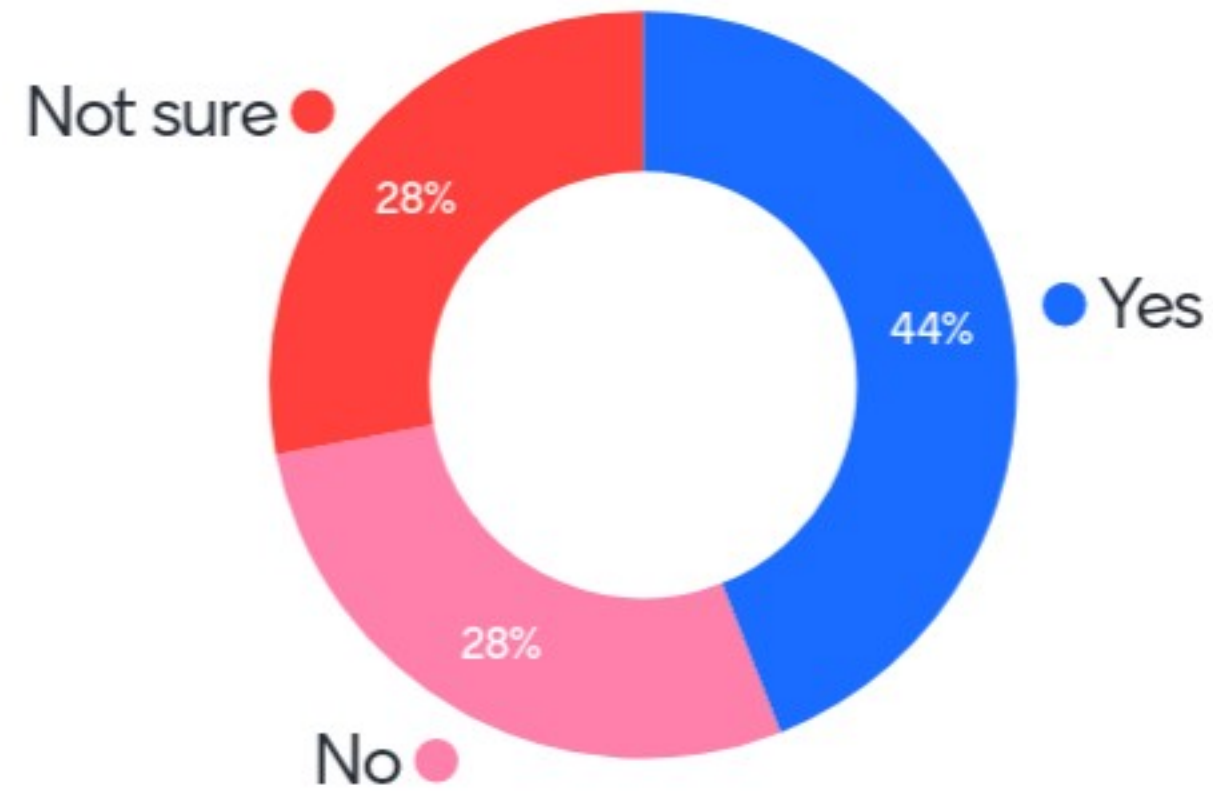


We are working with Connection Boundary and CEPA/TNEI to identify how these options could be charged.

Users could choose the level of access that they want. They may choose a combination of options.

Some levels of curtailment may take longer to provide. To accept earlier connection to the network, a user may accept a lower level of access until wider reinforcement has taken place.

Would you be interested in a non-firm access right?



Why?

the specific hours may not be useful hours for me, or the cost may justify on-site storage

it depends on whether financially firm or not.

So that Connection Agreements are reflective of our export/import profile.

In order to speed up connection waiting time

Easiest way to offer flexibility into the market.

The network should rely on market driven flexibility procurement, not access rights to manage the network

It massively depends on the commercial terms. Yes/No is oversimplified.

Flexible connections do not work for flexible storage assets. They're fine for solar and other generators and demand. So it depends.

Depends on whether there is compensation, or not



Why?

Non firm access must be subject to discounted capacity charges and reflect the risks faced by users

Because we only generate at peaks when the network will need us - our run patterns are likely to work with curtailment patterns

It would depend on the specific commercials of the project

I don't have a large connection

It is completely down to the application

Gives a stable signal I can plan around

It will depend how these are defined and compensated

The choice will allow me to reflect my needs and this can give a cheaper connection instead of just always being stuffed with flexible and no idea or choice on level of curtailment

We'll say it again - financially firm is necessary



Why?

It would help if you were clearer when you talk about "non-firm" if you mean "physically non-firm", "financially non-firm", or something else.

Depends on the asset type and on the risk. At the moment you can finance solar with non-firm connection, that could change if access right modifications mean curtailment level of non-firm connections expected to increase materially.

if small, may not significantly impact commercials. only interested in fraction of percent (not the giant 5% steps on slide 12!)

a business in most cases will not want to gamble with their supply

Access rights are a non-dynamic, rigid way to enable flexibility

non-firm access rights should reflect the uncertainty which is passed by users and include an appropriate level of compensation.

More detail on access rights for large users on LDNO networks

Preference for firm access.

Forecasting system conditions and network availability is DNO job. The expectation on %hours curtailed relies on data being available to users in advance - will this be the case?



Designing time-profiled access rights

Time profiled access rights help to develop a more efficient electricity system if users profile their access rights to move away from the network peak.

Network peaks are different for generation/demand. Precise timings could vary between DNO areas and potentially within a DNO area.

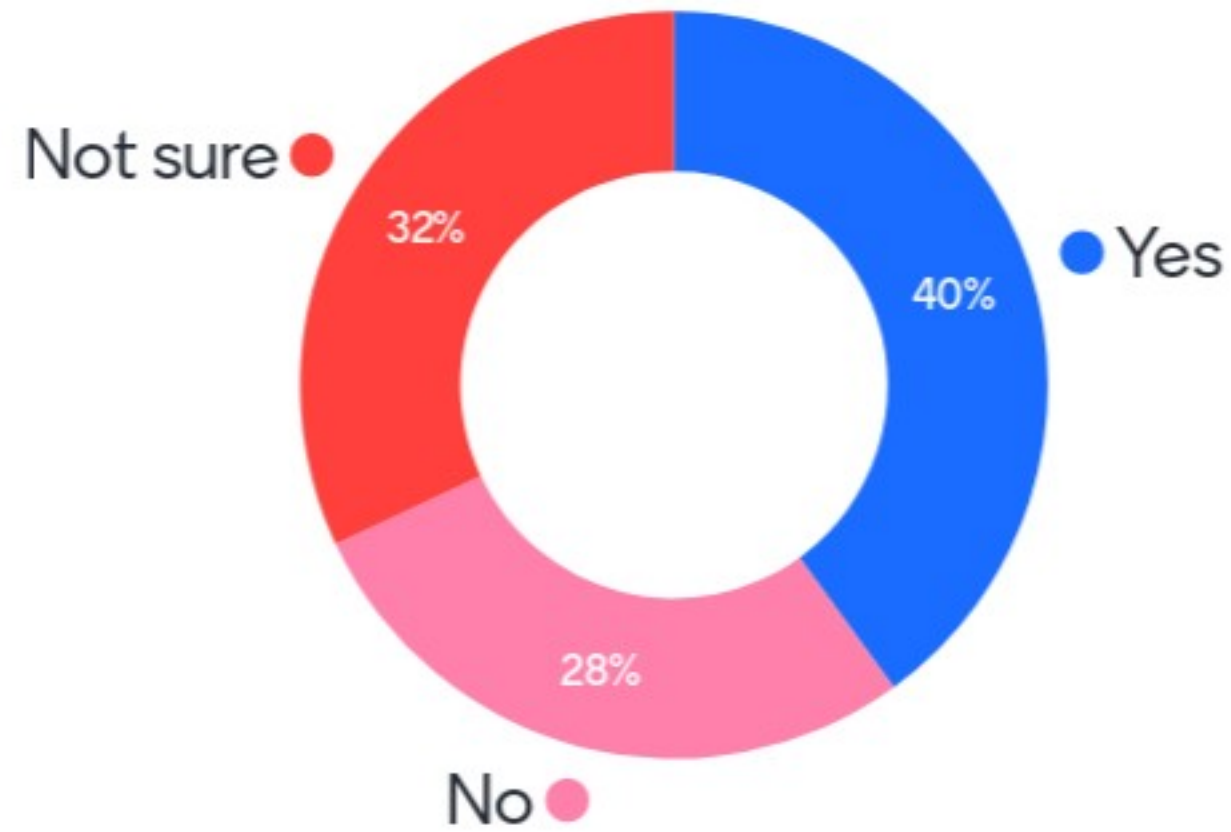
These are illustrative examples of timings for off-peak and super off-peak access rights.

Demand time-profiled options	Times	
	Mon-Fri	Sat- Sun
24/7 access	All day	All day
Off-peak access	00:00 – 16:00 19:00 – 24:00	All day
Super off-peak access	00:00 - 07:00 23:00 – 24:00	All day

Generation time-profiled options	Times			
	Summer		Winter	
	Mon-Fri	Sat- Sun	Mon-Fri	Sat- Sun
24/7 access	All day	All day	All day	All day
Off-peak access	00:00 – 09:00 18:00 – 24:00	00:00 – 07:00 20:00 – 24:00	00:00-10:00 15:00-24:00	00:00-09:00 16:00-24:00
Super off-peak access	00:00 – 06:00 21:00 - 24:00	00:00 – 05:00 22:00 - 24:00	00:00-09:00 16:00-24:00	00:00-08:00 17:00-24:00

This could either be chosen on firm or non-firm basis. Where a user chooses Off-peak or Super-off peak – the user could request to have non-firm access during the peak period.

Would you be interested in a time-profiled access right?



Why?

PV doesn't require a connection overnight

I don't have a large connection

If I could move my production around, why not?

Storage should be 'paid' to do the helpful thing. At the moment, it has to pay for availability that might be curtailed, rather than actually using it to help avoid curtailment. It needs full availability, and then to be paid.

Not sure that "peak" is the right measure

To avoid paying for network reinforcement works/costs when we know we wouldn't be importing/exporting

Again, too oversimplified. Is it windy? If yes, I want grid access for my wind farm.

Time profiled access (like fixed band ToU DUoS) makes a simplifying assumption of homogeneous peaks through time and networks.

Time profiled access may suit some of my projects. I may not want 24/7 access to generate or to take



Why?

It will depend how variable these would be and how peaks might change

What do we do about network constraints that occur during the day eg as a result of solar?

My solar requires hardly any winter access and none at night

This seems like 20thC answer to a 2050 problem - fixed time-bands are out of step with a flexible decarbonised system? eg wind changes the peak. eg2 Covid wiped out morning peak

Only if allowed a connection not otherwise available and/or significantly reduced cost of connection

Peak is not really the problem

Yes if it can be firm or no access. Not a fan of non-firm

As long as time profiles can be made to fit customers processes ie when they don't need as much power.

We can match our generation to localised demand conditions



Why?

Its really hard to tell if there is a real application for this, and it all comes down to price. Ultimately I dont think that you find out until you run a large scale trial of it. I find it really hard to tell if good idea or white elephant

But they would need to change over time

Different access prices for different times could better reflect the different costs which different users cause.

Will depend on the details etc.Worth exploring.

too static and straightjacketed. what problem does this solve, if other customers are responding dynamically?

How do you value access rights vs charging vs flex? Access feels inflexible and locks in flex valuations for long periods.

too complicated for large consumers

Surely the timing of access should reflect constraints?

no control



Shared access rights

We have been developing our thinking about the definition of shared access rights.

Eligibility criteria

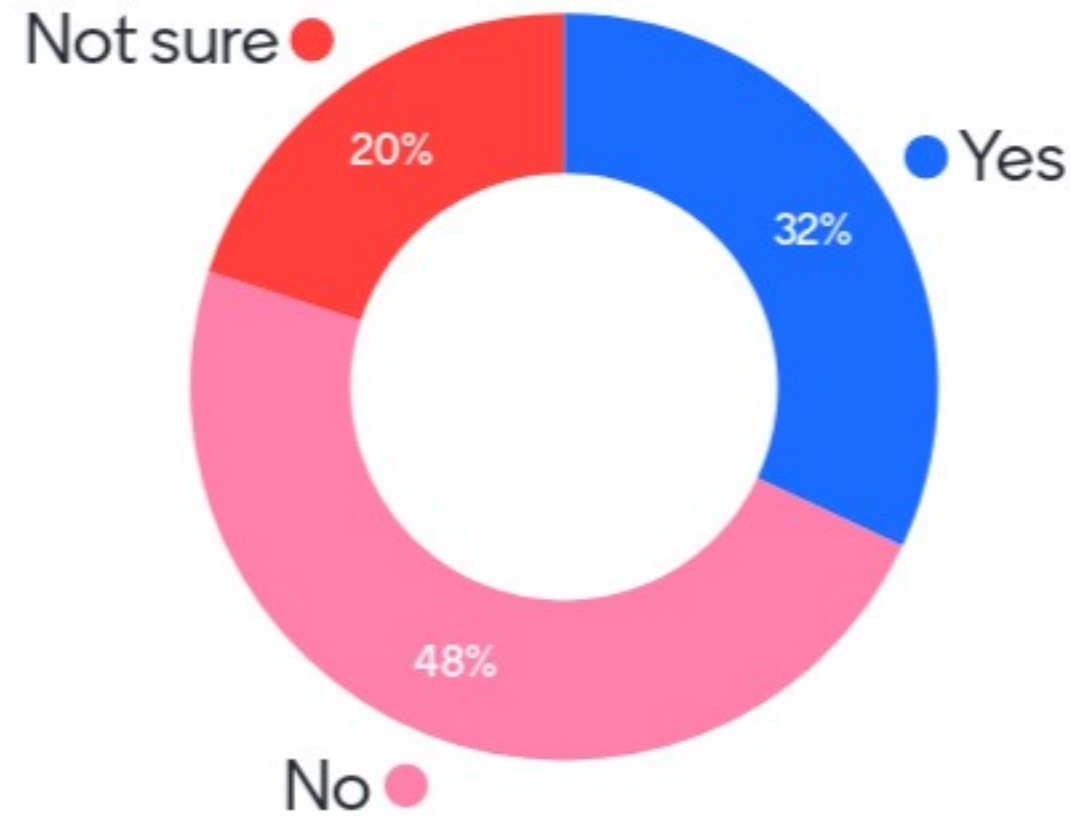
- The sharing group must be approved by the network operator as help to deliver more efficient network.
- Users must be connected to the same "Relevant Section of Network", at the same voltage.
- Users must sign a Sharing Group Participation Agreement.

Sharing Group Participation Agreement must:

- Identify the participants, start date, capacity for each site and cumulative level of shared capacity (which is less than cumulative physical capacity of sites).
- Identify the Sharing Group Manager (this doesn't need to be a separate party). This party is:
 - Responsible for cumulative compliance and liable for non-compliance.
 - Trade access/request additional access/terminate access on behalf of the Sharing Group.
 - Sell services on behalf of the Sharing Group.
- A request to amend a Sharing Group Participation (eg member leaving, cumulative capacity increase) would be treated as a connection modification request.

We are considering further how the shared access rights would be charged. There are significant challenges if parties have different suppliers. Sharing rights will require individual users to take on some risk. Could lead to more efficient use and development of system capacity, need to tighten eligibility criteria to ensure Sharing Group only formed where it delivers benefits.

Would you be interested in a shared access right?



Why?

This requires some consideration of exchange rates/zonal capacity etc

Classic textbook economic theory which doesn't work in practice - has been offered for years and never worked at scale, commercials of separate projects don't magically align, needs a system architect view on multiple projects (risk on SO not proj)

It all depends if there is a benefit and if you compliment your local users requirements

This seems like a very niche area with some effort to implement. How many are asking for this and is it worth the effort to resolve?

Too much risk for little benefit (for all)

Shared capacity charges or local settlement netting off are interesting constructs to achieve effective use of networks. Applying this through Access feels inflexible and old fashioned.

Unworkable idealistic and won't be used. How do you track who is in each sharing club ? No users have a counter-cyclical neighbouring factory they are willing to be dependent on

This could be a good solution for some ESCo models, e.g. managing electrification of heat across a housing estate

Sounds risky. What would the terms be? What happens in a dispute?



Why?

Perfect way to connect complementary technologies

May rarely work but good as an option to reduce connection costs.

Complexity may override benefits? Guiding principle of practicality/complexity to be considered.

If those in each sharing club don't have to be same Supplier, even harder to track. Nobody wants to be dependent on other sites. How track utilisation, how penalise over-use ...

Looks very messy/complicated, and potentially administratively burdensome, for limited benefit.

Useful for storage in particular

again certainty is required by consumers

Is it really useful in practice? Where in the country could it be used? Is this just good on paper and a waste of time in reality? Is it working towards net zero?

What on earth over-run charge and which ones pays? They would squabble so badly and it would fall apart



Why?

Need to ensure not rewarding normal diversity of load

I have a number of sites within close geographical proximity, some with export so to get full benefit without a private wire would be helpful

Niche - could be some use cases but don't see it being a huge thing

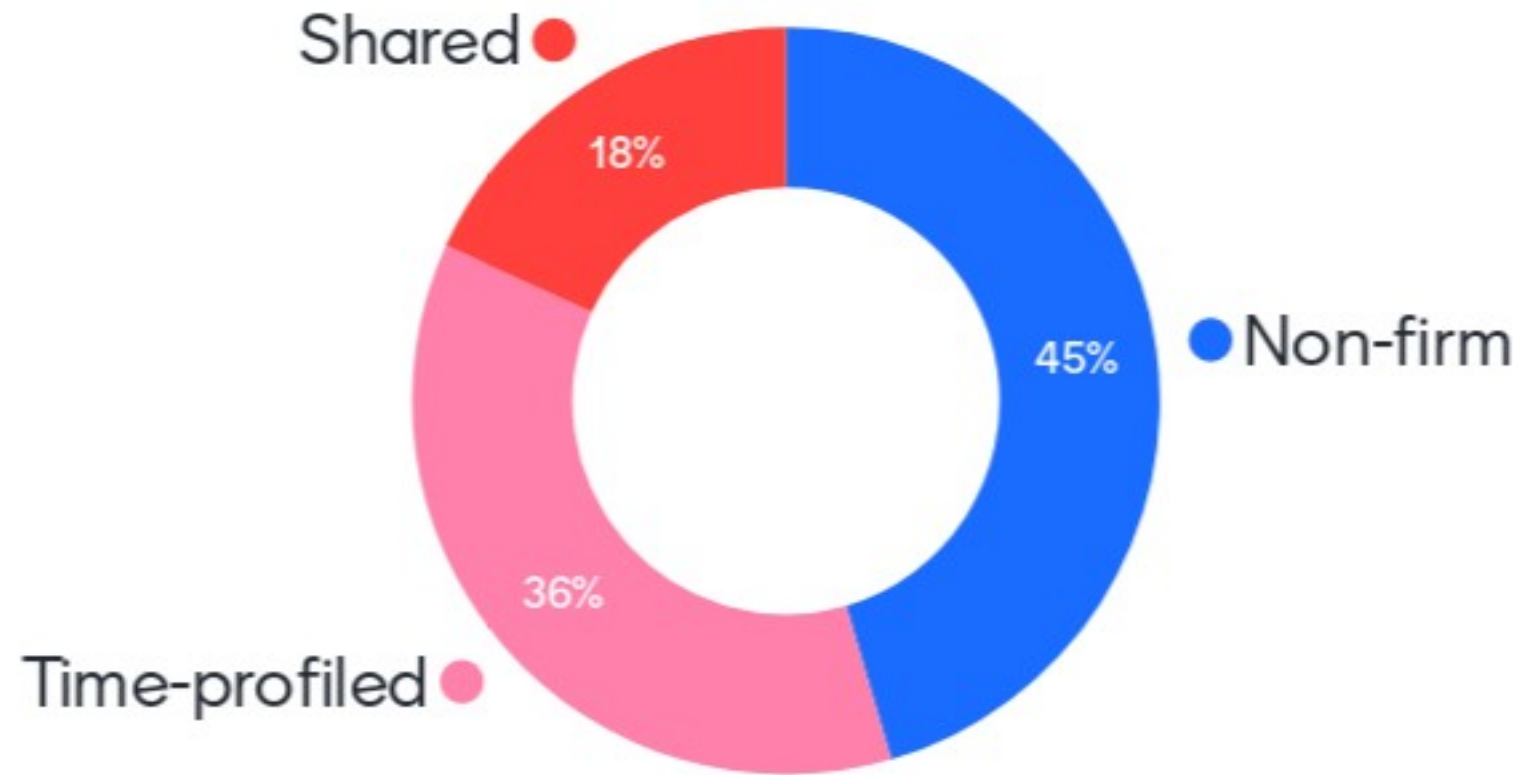
good option to reduce network costs, but could be too complex to work out - how would charges be applied cost reflectively? Is there evidence that this option is useful for the market?

Our generation is flexible and despatchable so we can manage the risk if we combine our access with intermittent technologies

Network reinforcement based on implicit sharing across the whole market is more economically efficient compared with explicit sharing in lots of small groups



Which access right type would you be most interested in?



Why?

There should be a 'neither' option. I had to pick one to vote.

Non firm with variable curtailment prices appears to be the best solution

Gives most benefit to the system as a whole

Avoid peak charges.

There was no answer for FINANCIALLY FIRM

it is the only one that is sensible from a business perspective - to leverage technologies. That said financially form is the ideal option

Easiest to explain to customers and for customers to factor into their business financials.

Financially firm was missing Ofgem - start listening to what we keep saying!!!

Non-firm in return for lower access charge sounds promising for some projects. Second choice is time of day, I need hardly any access in winter for solar - does that help? Shared, you will get no take up in practice



Why?

no option for non of the above

Time profiled would be very helpful to connect things like solar but doesn't help with wind or storage. Very much against non-firm access for undermining flexibility markets and indifferent to shared access.

non-firm: commercials can stack up. timed: archaic & inflexible. shared: too risky (other projects, risk on the projects)

Non-firm (with appropriate curtailment levels and compensation) may allow for more stacking of revenues (and more use of assets).

provided it was with compensation The other methods are random and will not reflect the real conditions of the network in real time

General point - why limit the range of options?

All 3 are potentially interesting in different situations. Users should be given a choice to fit their specifics

This will create a bias in the answers - please re-ask this question. There's no financially firm option.

Shared provides a good solution for storage potentially



Why?

Nobody when faced with realities and over-run penalties will want to enter a sharing club!

Non-firm access right option - but this should include financially firm access

Start thinking about how access options can IN REALITY help decarbonise at lowest cost to the consumer. Things work in economic theory which would be a waste of time in real life. A change of focus is necessary here from Ofgem

None of the access options

We would prefer firm access.



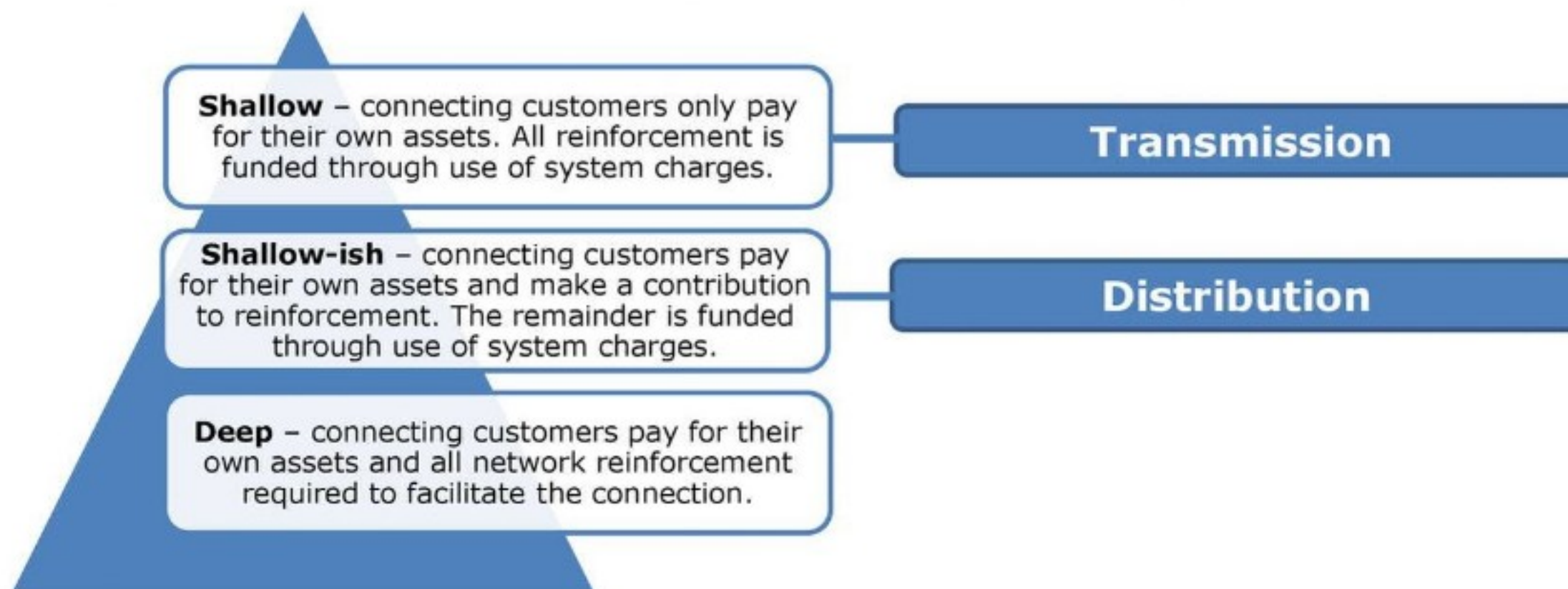
Ask me anything

39 questions
85 upvotes

Connection boundary

Reminder of the connection boundary work stream

- There are four parts to the Access and Forward Looking Charges SCR:
 - A review of the definition and choice of access rights for transmission and distribution network users
 - A wide-ranging review of DUoS charges
 - **A review of the distribution connection charging boundary**
 - A focused review of transmission network use of system (TNUoS) charges.
- The connection boundary is the extent to which customers pay for their connection including any reinforcement that is required. Customers connecting at distribution currently face a “**shallow-ish**” boundary.



Options that we took forward to shortlisting

Based on what stakeholders have told us, we said there could be three main areas where the current connection charging arrangements may not be working in the interests of consumers.

Barriers to entry

Limiting efficient system
development

Potential distortions between
transmission and distribution



We shortlisted a number of options
that might address these issues

- Options for reducing or removing the contribution to reinforcement costs that distribution users pay through connection charges.
 - We did not shortlist some of the variants for a shallower connection boundary (ie, capped or standardised connection charges).
- Option of allowing alternative payment terms for connection charges (eg, to allow payment over time), and whether we should introduce arrangements for managing liabilities and securities.

Respondents largely agreed with our shortlisting and we have continued to develop our thinking on the options. In this session we will provide an update and what options we are considering to model.

We are seeking feedback on our thinking to help inform these decisions.

Developing what a shallower connection boundary might look like

- We shortlisted four incremental changes to the existing connection charging boundary – any combination of these would result in a “shallower” connection boundary than exists today.
- We are considering which of these can be assessed on a ‘principles’ basis, and which (if any) should be modelled.

Removing the High Cost Cap

- DG currently pay for all reinforcement above £200/kW but this protects wider customers from these costs
- Could remove this and apportion it in the same way as other reinforcement costs (eg, recovered from connection and network charges)

Amend the voltage rule

- Connection customers would only pay for reinforcement at the same voltage level as connection
- Reinforcement at levels above recovered from network charges
- Question over the extent of connection-driven reinforcement at higher voltage levels today

Amend the Cost Apportionment Factor (CAF)

- Reduce the contribution from connection charges to security and/or fault level reinforcement costs
- Fault level reinforcement typically driven by generation so DG more likely to benefit from changes in that area – but very difficult to signal these costs through DUoS
- We are minded to consider changes to the security level CAF only

Recover the cost of transmission reinforcement through DUoS

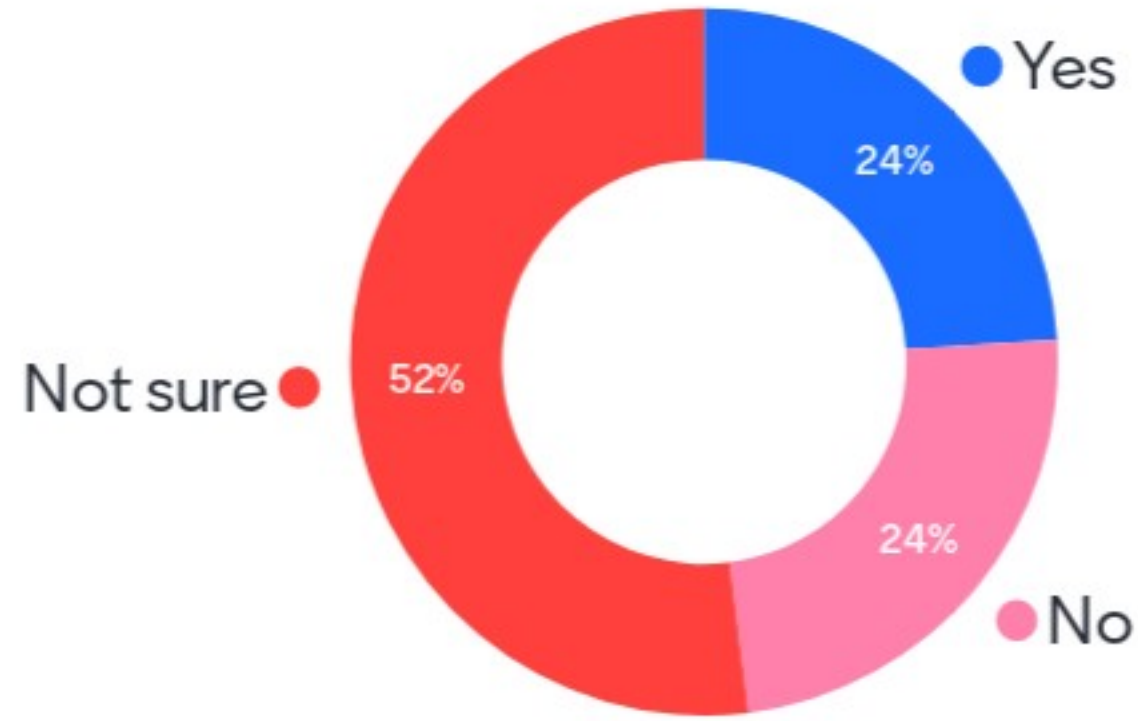
- Transmission Attributable works triggered by a distribution connection are currently targeted at the individual – could recover this through network charges instead
- Potentially appropriate if introducing TNUoS charges for DG.

Our current view of the options for amending the connection charging boundary

- We are continuing to qualitatively assess the possible incremental changes to the current arrangements (ie, a 'shallower' boundary than we have today).
- We are not convinced the potential benefits of removing the High Cost Cap outweighs the negative impacts and do not propose taking this forward any further at this stage.

Boundary	Variant	GP1: arrangements support efficient use and development of system capacity	GP2: reflects energy as an essential service	GP3: changes are practical and proportionate
Shallower	Remove the High Cost Cap	<ul style="list-style-type: none"> + Aligns demand and generation. - Limited benefit and evidence suggests working as intended. - May encourage connection where high level of reinforcement is needed pushing up costs for all. 	<ul style="list-style-type: none"> + Reduced connection charge for DG - Disproportionate impact on some customers (eg, those in rural locations). - Will increase DUoS bills (although extent varies between options) 	<ul style="list-style-type: none"> + Simple to administer given expected volumes but difficult to quantify exact response.
	Amend the Voltage Rule	<ul style="list-style-type: none"> + Could keep some locational signal for local work. + Could encourage DNOs to consider alternatives to support more efficient network development. - May not be sufficient change to realise benefits. 	<ul style="list-style-type: none"> + Reduced connection charge - Will increase DUoS bills (although extent varies between options) 	<ul style="list-style-type: none"> + Straightforward charging methodology change
	Amend the Cost Apportionment Factor (CAF)	<ul style="list-style-type: none"> • Minded to consider changes to the security level CAF only 	<ul style="list-style-type: none"> + Reduced connection charge - Will increase DUoS bills (although extent varies between options) 	<ul style="list-style-type: none"> + Straightforward charging methodology change - Less complex to charge fault level through connection charges than DUoS (see cost models sub group report)
	Recover transmission reinforcement through DUoS	<ul style="list-style-type: none"> + Better aligns T and D connection arrangements. + May be appropriate if DG are charged TNUoS. - Likely to be limitations to how well costs can be signalled through DUoS. 	<ul style="list-style-type: none"> + Reduced connection charge - Will increase DUoS bills (although extent varies between options) 	<ul style="list-style-type: none"> - Likely to be complex to reflect costs in DUoS

Do you agree with our proposal to not consider removing the HCC, or making changes to the fault level CAF, any further at this stage?



If no, why? What else should we consider?

Might be coming later but move to shallow boundary seems the best option.

Fault level caf? Should this be assessed re net zero?

May encourage connection where high level of reinforcement is needed pushing up costs for all.

No review of level of HCC? Why is it 200?

Its a balance of economic purity against your social policy. Do you want to pass costs through "properly" or do you want to protect users from high costs

No. Have you considered the role of reconciliation when discounting options under CAF change (eg. fault level reinforcement)?

It could have potential, maybe it should still be considered further.

What are the impacts for decarbonisation at lowest cost to the consumer? And by this I mean the sum of all costs that consumers face, not just the arbitrary cost of "network charges". See Ofgem's own Decarb Action Plan for more detail...

A lot of reinforcement is driven by fault level triggering the requirement to replace, for example, a circuit breakers and transformers. Feel this should be considered.



If no, why? What else should we consider?

I heard you suggest removing FL CAF because it's complicated - i don't agree that it is complicated

What is the HCC limit? Should that be reviewed in net zero context to check it is appropriate and not a blocker? Yes!

HCC should be indexed. consider increasing the level.

HCC performs a sensible role protecting customers.

No. HCC assessment- Disproportionate impact on customers in rural areas. We heard from the DUOS group yesterday that urban/rural does not send a signal? There should be consistency in assessment.

FL CAF is not overly complicated - not sure why you have ruled it out - need to see your proposals for security CAF and ensure it is not imbalanced

If costs paid by distributed generators is capped, then would the same treatment be applied to cap costs for transmission connected generators? If not, then why not?



Our current view of the options for a shallow connection charging boundary

- We are continuing to qualitatively assess the more fundamental changes to the current arrangements (ie, a 'shallow' boundary).

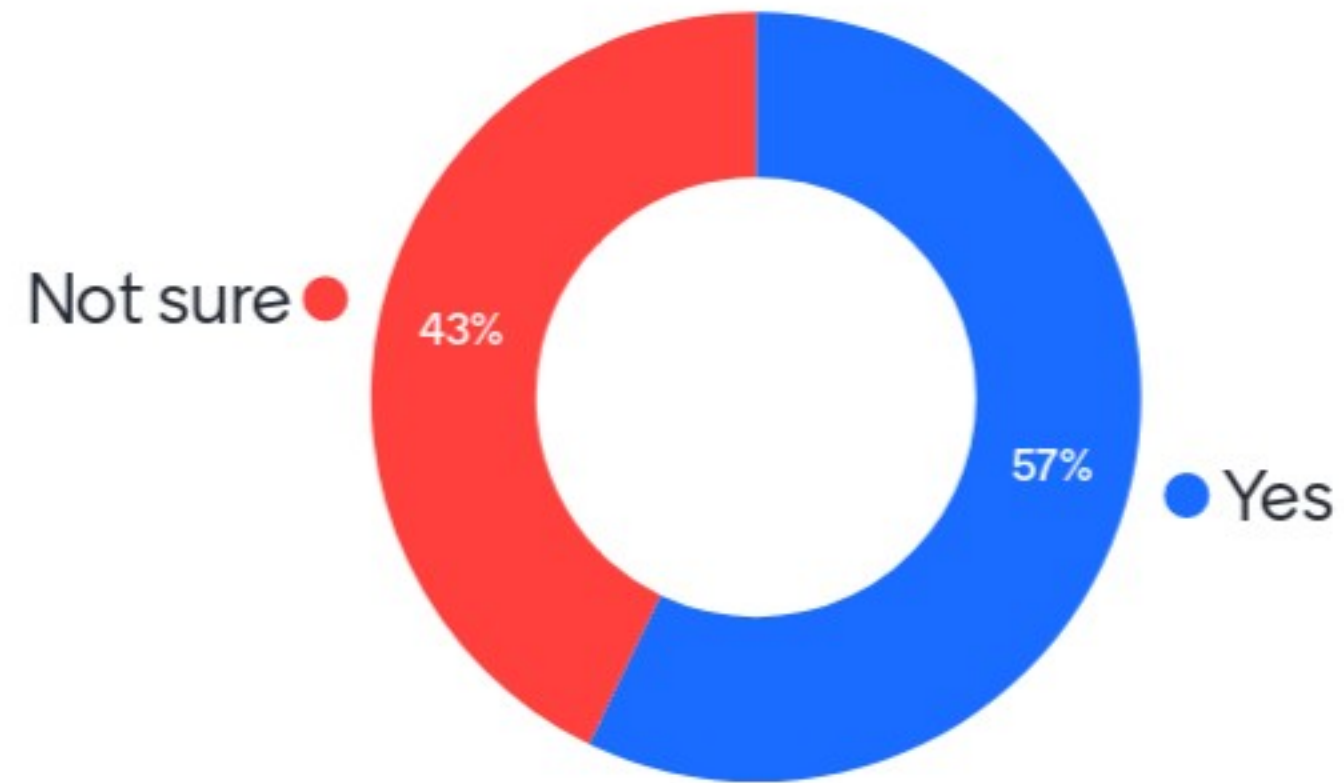
Boundary	Variant	GP1: arrangements support efficient use and development of system capacity	GP2: reflects energy as an essential service	GP3: changes are practical and proportionate
Shallow	Recover only extension asset costs through connection charges	<ul style="list-style-type: none"> + Removes scope for different treatment at T and D (if evidence confirms differences exist today). + Maximum scope for DUoS funded reinforcement and considering alternatives/ more strategic approach(es) to support more efficient network development. - Need to consider how effective investment signals are if relying solely on DUoS signals. 	<ul style="list-style-type: none"> + Reduced connection charge - Will increase DUoS bills – could be mitigated by the retention of the High Cost Cap 	<ul style="list-style-type: none"> - Stronger case for liabilities and securities which increase complexity.

Deferred payment and Liabilities & Securities

- We think there could be a number of negative consequences of introducing deferred payments – and these may outweigh any benefits.
 - The connection boundary sub group is writing a paper on deferred payment and will be made available to the CG soon.
- We are continuing to consider the case for introducing liabilities and securities, but any solution must be practical and proportionate.

Option	GP1: arrangements support efficient use and development of system capacity	GP2: reflects energy as an essential service	GP3: changes are practical and proportionate
Deferred payment	<ul style="list-style-type: none"> + Could address cost barriers for the connecting customer – May be inappropriate for DNO to provide finance where a customer has been unsuccessful elsewhere – Could distort competition in connections if applied to contestable work (if IDNOs/ICPs less able to offer terms) 	<ul style="list-style-type: none"> – Shifts bad debt risk to DNO, and possibly customers pushing up costs for all – but this might be reduced by a cap on what can be deferred 	<ul style="list-style-type: none"> – Increased administration – but could be outsourced to another provider – Could be difficult to manage where the connecting and enduring customer differ – May introduce new financial obligations on the DNO (eg, consumer credit legislation)
Liabilities and securities	<ul style="list-style-type: none"> + Could incentivise users to engage with DNOs early to avoid inefficient investment 	<ul style="list-style-type: none"> + Protects wider customer base from bad debt – Requirement to provide security may be as much of a barrier as an upfront charge 	<ul style="list-style-type: none"> – Increased administration – Could be difficult to manage where the connecting and enduring customer differ, especially if continuing post-energisation

Do you agree with our initial assessment of the deferred payment option?



If no, why? What else should we consider?

Risk of bad debt will then be borne by customers through DUoS.

Does shift bad debt risk to DNO. Ofgem might let that be put onto customers in turn.

Moves bad debt risk to DNO and risks being moved onto DUoS customers.

Seems complicated for little gain? Agree not to progress deferred payment. Suggest that efforts better focused elsewhere in this SCR.

Assessment does not seem to have moved on significantly in the last few months.

At distribution level, there may be a higher risk of stranded network asset (due to shorter project life) and higher credit risk from smaller parties, compared with transmission.

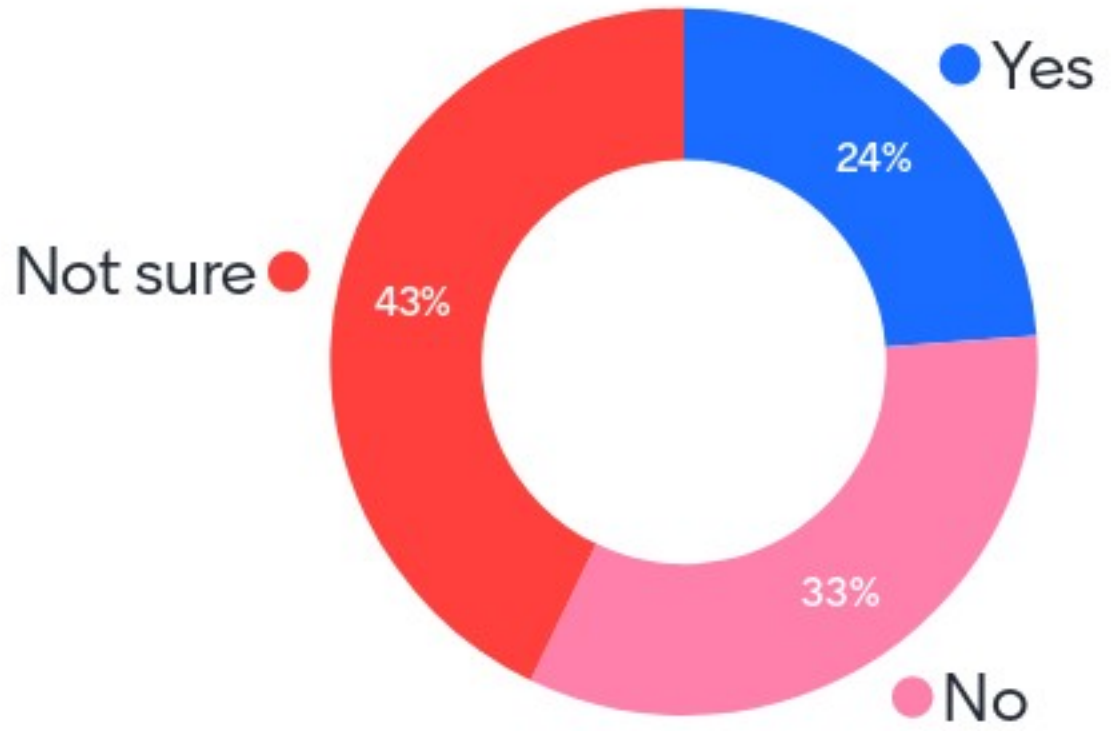
It feels like we're in the contractual weeds of payment methodology when the whole operating model of how we plan, develop and operate our networks still hasn't been decided.

Agree that DNOs should not be providing financing at terms preferable to those otherwise available to parties. This could be partly mitigated by security/liability arrangements.

Assessment seems purely network company focused - what is the impact to achieve net zero?



Would the introduction of liabilities and securities change your view of the connection boundary or deferred payment options?



Please explain how.

It's another option. if security is less than total cost of significant works, this can be an appropriate balance of risk, best outcome for both customer and NO

Too much uncertainty to comment

Still increased burden of admin. Are networks able to conduct robust credit risk analysis and management?
Barriers to smaller parties to provide securities if no investment grade rating.

Implemented well, this could help address several issues around anticipatory investment and suchlike, but this needs a lot more thought

Liabilities & securities work well at T - for the provision of financially firm access rights to the grid!

Clear interaction - will need to be assessed as a package.
Deferred payments will require security.

Treats distribution generators like transmission generators so removes distortions.

Worthy of investigation -- difficult to comment at this stage

liabilities and securities are needed I suppose if you allow shallower connections in any way. Simpler than CMP192 but not too weak.



Please explain how.

Worth persuing further. Means customers are serious about proceeding with connections.

+1 reference to financially firm

liabilities and securities should also be accompanied by connect and manage/non-financially firm access option as distribution!

If security works like user commitment, then this would be better. This could better align distribution with transmission, so reduce distortions.

Need to understand what the actual cost risk to DNO is likely to be. If someone goes bust surely that capacity in most cases can be used elsewhere?

Equality with transmission but stringent security requirements could require similar credit rating to advance payments so may not remove the barriers to connect



Ask me anything

39 questions
85 upvotes

Packaging of options

Overview of packaging approach

We have commissioned CEPA/TNEI to undertake modelling, as part of our Impact Assessment, to inform our principles-based decision on the Access SCR.

- As the basis for this modelling, we are developing **packages of coherent sets of reform options** across our policy areas which **could be implemented together** and will be **modelled jointly**.
- In parallel, we are also exploring **potential sensitivities or other supporting analysis**, which may allow us to test **option variants** or isolate the impacts of **specific aspects of reforms**.

Our approach and key considerations

- In formulating suggested packages, we are considering **how options work together** in practice, including any which would be **less compatible**, and where modelling may best help us **assess impacts proportionately**.
- We have focused on aspects which would be expected to differ in their **system benefits** and **distributional impacts** – and where we therefore expect modelling to offer particular insights for our choice of options, considering our principles.
- The overall set of analysis can help us build an understanding of particular impacts of certain policy options or potentially reform for certain stakeholder groups (eg domestic consumers who may be in vulnerable situations).

Focus of input we are seeking

Today's discussion

Here we outline our **provisional view of potential packaging** and areas for **additional analysis**.

- We may streamline the set of packages for modelling further within this envelop.
- We are seeking input from the Challenge and Delivery groups on this potential package structure to produce the necessary IA outputs.

In particular, we are seeking any views on:

- a) This **proposed structure** and basis for selecting a set of packages, considering where modelling has most value and the need to follow a proportionate approach
- b) Any **priority outputs**, noting modelling will not by default isolate the impacts of specific options within a package
- c) Any **supplementary analysis** you think would be particularly key to accompany the modelled packages, and why.

We note this is linked to other aspects of the modelling approach and analysis, including our choice of scenarios to model, which we expect to be based on the ESO's FES 2020 scenarios.

If you have views on this today, we also welcome comments on this aspect.

Further engagement

- We propose to hold a separate session in the coming weeks to discuss the modelling approach in more detail, on the basis of our options selected for modelling.
- At that session, we plan to update you on our confirmed decision on choice of scenarios to model.
- We also intend to seek input on implementation costs through an RfI on the options to assess in the coming weeks.

Potential modelling packages and supplementary analysis – draft for discussion

Principles-based assessment informs the set of options and packages selected to model

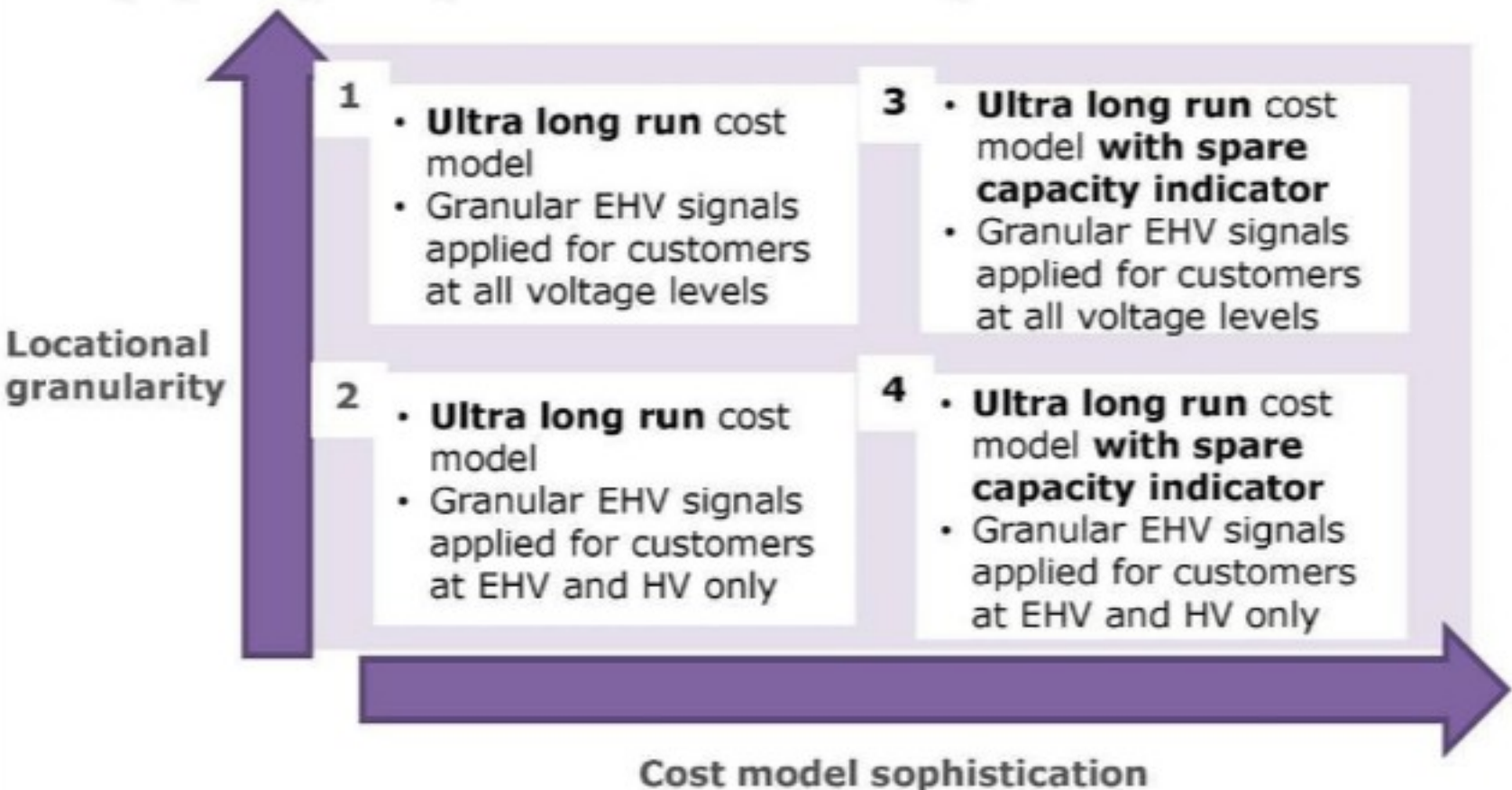
Ahead of full modelling we expect to seek an indication of:

Static distributional impacts of reform for small users, to inform our view of **any need to model adaptations**

Potential fully modelled packages

Potential sensitivities or off-model analysis

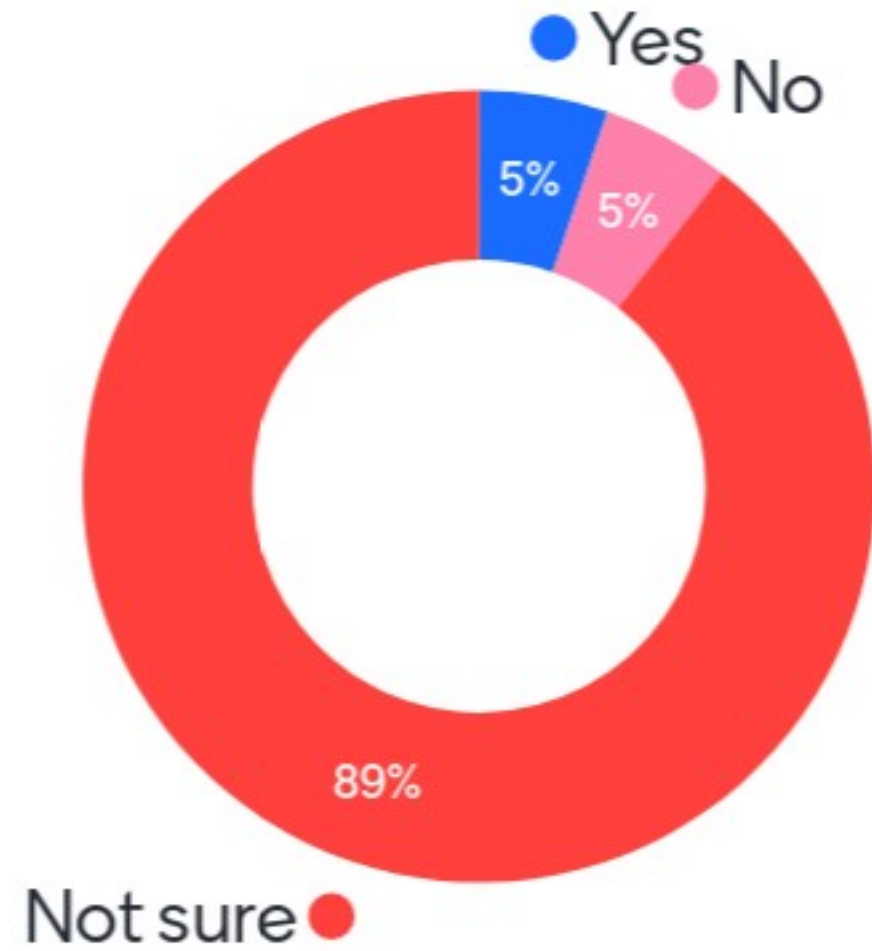
Policy option packages to be modelled alongside the baseline



Key potential aspects may include:

- A **connection boundary** option variant, or additional **charge design** option
- Additional model runs to isolate the **benefits / impacts** of reform for certain user groups (eg **small users**)
- Specific benefits from **access, DUoS / TNUoS reform**, and / or **connection boundary** reforms
- Further small users adaptation** to mitigate distributional impacts, if initial analysis suggests needed

Do you agree with our proposed structure of packages, considering the need for modelling to be proportionate?



If no, why? What should we consider instead?

I'm sorry, I have struggled to follow the explanation

Doesn't seem to be many scenarios ie 4 given the number of areas being considered.

Difficult to say at this stage -- Its not really clear to me what question you are trying to answer

All that chat and decarbonisation at lowest cost not mentioned once... does rather feel like we're beating our heads against the wall here Ofgem. Have you read the Decarb Action Plan??

Not nearly enough information to comment there. Very woolly

Seems odd not to have scenarios on how shallow connection boundary is as part of the core modelling packages given that the level of ongoing charges will presumably be highly affected by that.

Yes, you need to be targetted and can't model everything. Need to narrow down now.

Not sure what the packages are

Need more info on what will be modelled and how



If no, why? What should we consider instead?

Consider a counterfactual which operates like transmission with financial firmness and flexibility markets. In this scenario, DUoS charges would be better to be capacity based, not TOU, in order to avoid distorting dispatch

Realise using fes 2020 but impact on decarbonisation and efficient network development is a different thing.

What is the baseline scenario?

It seems sensible, but need more detail to understand.

You have it right. Can't consider all options forever. Certainty and narrowing-down are now needed. You won't please everyone!

Lack of modelling clarity for connection boundary options. How do chosen group of options work well together apart from the cost model modelling?

Why is this considered a sensible structure? There is not enough detail to comment on the impacts - how is net zero considered in the packages?

The base case MUST be based on a net zero scenario. It's actually a legal requirement that we achieve that now. Not doing so would be remiss and unexplainable

Unclear what the output is? What impact is being assessed? Seems that duos charge options are needed to consider distributional impacts, so don't understand why they're missing here



If no, why? What should we consider instead?

Need to assess against cost of delivering net zero carbon

How is the choice of packages linking to the objectives of the review?

Interaction with access/connection boundary is key - will off model analysis be sufficient?

Agree that should focus on groups that will deliver material differences in outputs, but can't comment on whether these do that without knowing what the outputs are

Can we bring back in the TCR here and balance between fixed and locational cost

Need to consider some of the fundamental assumptions here - like smart metering, the stage of market development, the structures under RIIO etc - may want packages with these as variables (eg. MWHHS on or off)



If we were to reduce the number of full packages to prioritise other aspects of modelling how would you rank those presented from highest to lowest?



Please explain your answer

Don't fully understand what these options are, can't give an answer

Need more information before responding

shorthand used to define the packages - not clear to me what exactly was included

where are user securities/liabilities in the packages?

The spare capacity indicator seems a sensible suggestion

where is increased high-cost cap, or amended FL/Security CAF?

There are only two variables here - once those are defined the modelling itself should be just a question of picking the appropriate variable definition - don't understand why these would need to be prioritised

Need to think about it more before answering

different access right options do not appear to be in the packages or have i misread?



Please explain your answer

option 1 clearly best. Or 3. without granular locational signals for all you cant solve issue in resi areas

Please ignore my answer as it was the only to move on. I think you need all of these and more

Can we see TCR in here - need to understand the level of fixed vs variable cost

Menti is entirely inappropriate for this question. The information we've had is also insufficient to provide a considered response. This is not a substitute for proper consultation

how will the sensitivities be applied under each package? can't make a rational decision and prioritise without more detail

Will TCR be assumed as implemented in all this? And how? Currently no decisions here...

Many more sensitivities should be carried out to assess impact of every element under consideration. To start with treat it as sensitivity analysis instead of scenarios, then only build scenarios later as second stage

Define success criteria to know which variables are important to model - this is the wrong way round to start!

Analysis should test the impact of using TOU versus capacity based charges. It should also consider internally consistent combinations of features which are needed to make them work as intended



Please explain your answer

Model impact of peak charges versus offpeak credits. Eg. could offpeak credits deliver the benefits of shifting demand away from peak, without the disbenefit of risking distorting BTM generation operational dispatch at peak ?

Consider a least regrets approach in the context of a longer-term road map. Take into account which changes may be consistent with future developments, versus which changes may undermine the longer-term road map.



Other policy aspects included in packages

Our proposed potential basis for packages is structured around **options for the DUoS cost model** and **level of locational granularity**. Alongside this, each package will also include a fully specified set of **options across all policy areas**.

We currently expect:

- To decide on a single option for other policy areas to include in the packages for modelling, on a principles basis, as indicated in the earlier policy sessions.
- Where this is not possible, or we think there is particular value in testing an alternative, we may test a limited number of aspects through sensitivities or supplementary analysis.

Policy workstream	Option for inclusion in package	Current assumption / dependency
Access rights	Access choices offered for larger users, valued in a single way per user group	Potential to try and isolate benefits of access from other reforms, dependent on modelling approach, current expectation is enhancing definition and choice of access likely to be low regret.
Connection boundary	A single connection boundary option per voltage level / customer group, corresponding to choice of locational granularity level	Potential to test an alternative variant if needed through a sensitivity / off model analysis, depending on the modelling approach.
Charge design	A single preferred set of charge design options for both DUoS and TNUoS, per customer group	Potential to test an alternative variant if needed through a sensitivity / off model analysis, depending on the modelling approach.
Small users	A single set of charging options, potentially also testing a reduced locational granularity variant	Potential to test an additional adaptation, if distributional analysis suggested a case to assess further.
TNUoS	Central options for DG and demand charging.	Potential to test sensitivities – to be explained within the future TNUoS CG session.

What do you see as priority modelling outputs – is any additional analysis needed?

how net zero is achieved

Impact on net zero

Impact on customer bills vs uptake of low carbon generation/storage vs network efficiency

Including residual and tcr

Incrementability - how can this be built on over the next 10 years

Dependencies on other workstream, such as RIIO

Impact of all this (inc TCR) upon decarbonisation at lowest cost. To get a real-world answer the modelling needs to take into account where renewables can and will build (due to planning etc) not make arbitrary and incorrect assumptions

impact on low carbon generation, capacity to achieve net zero

stability and confidence for future customer investments



What do you see as priority modelling outputs – is any additional analysis needed?

Clarity on how the reform interacts with the TCR

Impact on customers considering moving from gas to electricity

??? All scenarios should be net zero compliant! It's the law!

Impact on split of costs between residual/not

reassurance that any decision won't be flipped again in a couple of years time

Impact on low carbon investment

The only question is how each option achieves this, and the cost

Local area energy and heat planning impacts

What is the success criteria for this reform? That will tell us the outputs we need



What do you see as priority modelling outputs – is any additional analysis needed?

Impact on customer bills and charges should be priority. Implications for DNOs/IDNOs for changes access rights, connection boundary reform and DUoS charge design.

How true grid access parity across T&D could improve the SCR outputs?!

forecast volatility of charges (as will drive risk premia which drives what getting to net zero will cost)

Cost of delivering net zero



Next steps

- Your feedback will input into development and assessment of options.
- We intend to set up another short series of CG webinars towards the end of June – to discuss focused TNUoS reforms and our impact assessment.
- As mentioned earlier, we will continue to engage with the CG over the next few months
- We will be issuing our minded to consultation in late Autumn 2020.
- We are keen to engage. Feel free to contact us directly on FutureChargingandAccess@ofgem.gov.uk

Ask me anything

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