



Forum

Charging Futures Forum

15 January 2019

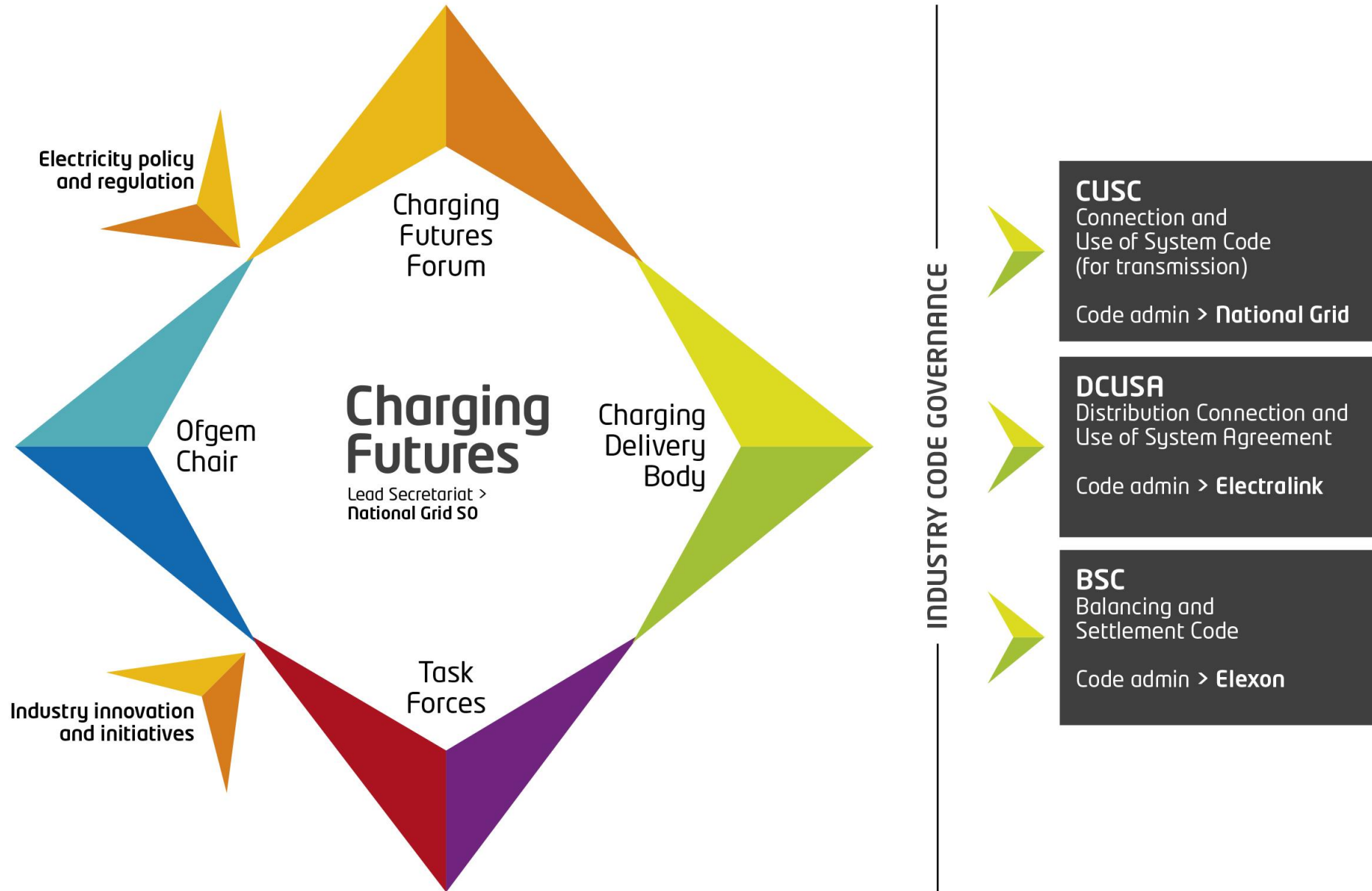


Welcome

**Gareth Davies, Industry Codes Governance
Manager, National Grid SO**



The Charging Futures ecosystem



Your involvement



Learn



Ask



Contribute

Overview of the day

**Gareth Davies, Industry Codes Governance
Manger, National Grid SO**

Objectives

- **Learn** about the progress within the Electricity Network Access & Forward-Looking Charges work package
- **Learn** about the Balancing Services Charges Task Force
- **Learn** about the Targeted Charging Review Minded to decision
- **Ask** the network charging experts your questions
- **Contribute** your thoughts on the Balancing Services Charges Task Force scope of work
- **Contribute** your views on the Targeted Charging Review minded to decision



Agenda, part 1

- > 10:00 – 10:20 **Welcome** – Gareth Davies, National Grid SO & Andy Burgess, Ofgem
- > 10:20 – 10:40 **Electricity Network Access & Forward Looking Charges Review update** - Jon Parker, Ofgem
- > 10:40 – 10:55 **Q & A** - Jon Parker & Andy Burgess, Ofgem
- > **10:55 – 11:10 Coffee break**
- > 11:10 – 11:40 **Balancing Services Charges Task Force overview** – Mike Oxenham, National Grid ESO
- > 11:40 – 12:25 Balancing Services contribution session
- > **12:25 – 13:10 Lunch**



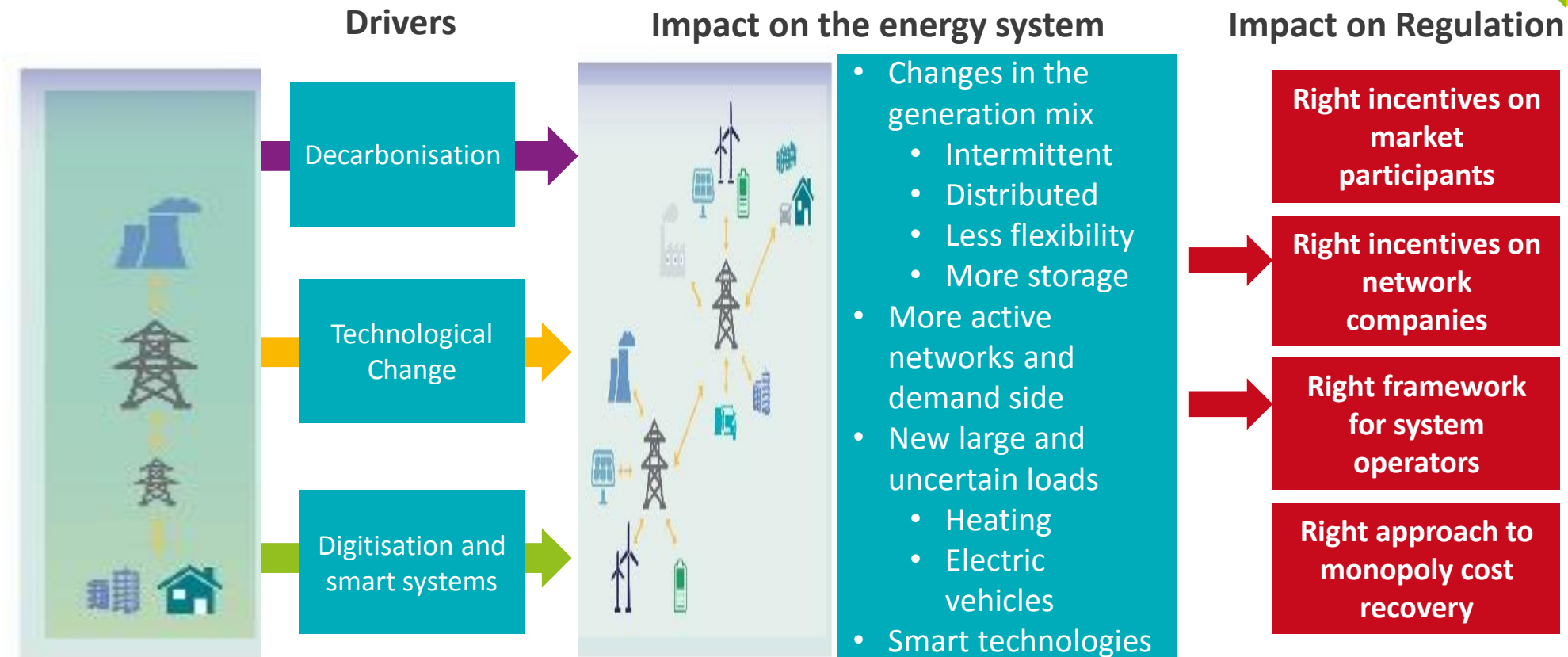
Agenda, part 2

- > 13:10 – 13:55 **Minded to decision and Impact Assessment presentation** - Andrew Self, Ofgem
- > 13:55 – 14:25 Targeted Charging Review contribution session 1
- > **14:25 – 14:50 Coffee break**
- > 14:50 – 15:35 Targeted Charging Review contribution session 2
- > 15:35 – 16:05 **Q & A Panel** - Ofgem
- > 16:05 – 16:15 **Closing remarks** - Gareth Davies, NG SO and Andy Burgess, Ofgem

Introduction and overview

**Andy Burgess, Deputy Director, Energy
System Transition, Ofgem - Forum Chair**

Changes in the system means changes in regulation



➤ Access and charging reform



The energy system is going through a radical transformation.

These changes could create challenges and opportunities for our electricity networks.

We have two major projects addressing how electricity network access and charging should be reformed to address these changes and existing issues:

- > The **Targeted Charging Review (TCR)**. This seeks to remove those distortions not covered by our work on embedded benefits and to allocate fairly the long term fixed costs of the network infrastructure being there for when people may want to use it. We have a Significant Code Review (SCR) to address these issues. We are consulting on our proposed direction to the industry.
- > **Access and forward looking charging reform**. We want to ensure that electricity networks can be used more efficiently and flexibly –so that users can have the access needed, and benefit from new technologies and services, whilst avoiding unnecessary costs. We have just launched an SCR.

➤ Potential changes to BSUoS and the TCR

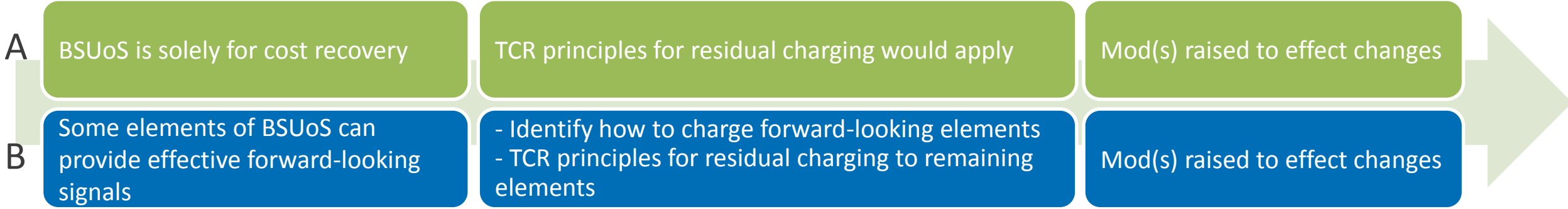
The Balancing Services Charges Task Force will examine the potential and feasibility for some elements of balancing charges being made more cost-reflective.

BSUoS Task Force

Will inform our decision on the removal of the Embedded Benefits for smaller embedded generation as part of the TCR

TCR consultation responses and analysis

In light of the findings of the Task Force, ultimately, there are two possible outcomes for BSUoS, either:





Storage and the TCR SCR

We believe that storage should only face one set of residual network charges and that those charges should be applied in a manner consistent with generation.

Our TCR SCR will address some of the residual charges for storage, but we expect industry-led code modifications to address the remaining issues, as summarised below.

Charge	TCR-SCR proposed changes	Remaining changes (industry-led)
TNUoS residual	Residual charges to apply to final demand only	Remove charges from demand for the purpose of storage
DUoS residual	Residual charges to apply to final demand only	Remove charges from demand for the purpose of storage
BSUoS	Address disparity between charges faced by larger generators and benefits received by smaller generators	Remove charges from demand for the purpose of storage

Electricity Network Access & Forward-Looking Charges Significant Code Review

Jon Parker, Head of Access project, Ofgem



Objectives of this session

In December 2018, we launched a Significant Code Review (SCR) of Access and Forward-Looking charges. Today's session seeks to provide you with:

Overview/Update on the SCR

- > The case for change
- > Our work to date on access and forward-looking charges
- > Recap of our July 2018 consultation
- > Overview of our December 2018 decision to launch an SCR

Next steps

How to get involved



The case for change

Context:

The energy system is changing (*growth of electric vehicles, distributed generation and battery storage*)
These changes could create challenges and opportunities for our electricity networks

The case for change

Increasing **constraints** caused by both **generation and demand at distribution level**, yet also increasing **opportunity** to mitigate these through **flexibility**

*(Imperial College suggests potential **savings of up to £4-15bn cumulatively to 2050** from reducing electricity network reinforcement)*

Substantially **different approach across transmission/distribution and generation/demand boundaries** means increasing risk of **distorting investment and operational decisions**

What are access and forward looking arrangements?

Our Electricity Network Access project is seeking to reform electricity network access and forward-looking charge arrangements:

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 either increase or decrease network costs in the future.

This is different to the **residual element** of network charges that are ‘top up’ charges set to ensure that the network companies’ allowed revenue can be recovered, after other charges have been levied. The residual charges are being reviewed as part of our Targeted Charging Review and we have asked for responses to our proposals by 4 February 2019.



The work so far

- > Published a working paper in November 2017 on “Reform of electricity network access and forward looking charges”
- > Commissioned **Baringa to gather evidence** to assess the materiality of current inefficiencies
- > Set up **two industry task forces under the Charging Futures** to help assess options for the change
- > Presented at last three Fora and held workshops on some potential options for change in Glasgow
- > Published a **consultation in July 2018**, seeking views on launching an SCR and priority areas for reform
- > Decision on SCR and scope of the review published on 18 December 2019



Recap – July 2018 consultation

We sought views on:

- > Case for change
- > The scope of the review (our view in the July consultation is outlined below)

Network access arrangements

Improving access choice and definition for larger users

Clarify access rights and choices for smaller users, including households

Improving the allocation of access rights, including enhancing the scope for markets

Forward-looking charging arrangements

Wide-ranging review of distribution use of system charges (DUoS)

Review of distribution connection charging boundary

Focused improvements to the transmission use of system charges (TNUoS)

- > How to take forward the work
- > Timelines for the review
- > Engagement with stakeholders



December 2018 Decision to launch a Significant Code Review

In December 2018, we decided to launch a Significant Code Review of access and forward-looking charges

What is an Significant Code Review? The Significant Code Review (SCR) process provides a tool for Ofgem to initiate wide ranging and holistic change and to implement reform to a code based issue.

Why have we decided to launch an SCR? We believe an SCR is the best tool available for us to manage successfully the complex and interrelated questions which may need changes across multiple industry codes to deliver this objective. There was considerable support for this from stakeholders.

Objective of the 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.

Guiding principles: We have developed some detailed guiding principles to help inform the development and assessment of options:

1. Arrangements support efficient use and development of network capacity
2. Arrangements reflect the needs of consumers as appropriate for an essential service
3. Any changes are practical and proportionate



The scope of our review

Included in the SCR – Ofgem-led

- > 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

Areas led by industry outside the SCR

- > Review of balancing services charges (BSUoS)
- > Access right allocation

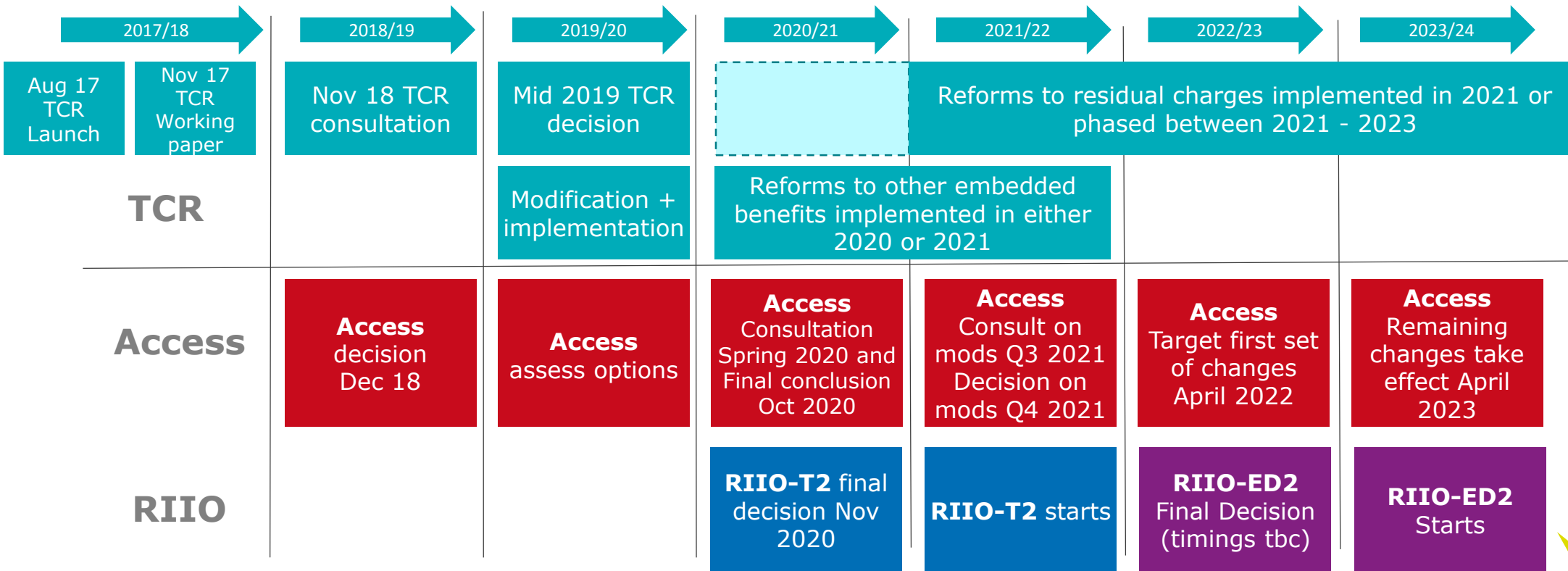
Excluded from the SCR and wider industry review

- > Introducing fixed duration long-term access rights
- > Introducing geographically exclusive local access rights which do not allow access to the rest of the system
- > Wider changes to transmission network charges
- > The transmission connection charging boundary



Timelines and links with other projects

We are reviewing the charging framework holistically; working closely with the Access reform and RIIO project teams to ensure a consistent approach is taken to the different reforms underway across the energy system.





Challenge Group and Delivery Group

We are committed to undertaking the SCR in a transparent and open manner. There will be ongoing role for the Charging Delivery Body and Charging Futures Forum.

In addition, we intend to introduce and chair a new Challenge Group and Delivery Group:

- > **Challenge Group** – will provide ongoing wider stakeholder input into the SCR. This will provide a challenge function and ensure that policy development takes into account a wide range of perspectives and is sufficiently ambitious.
- > **Delivery Group** - will comprise network companies, the Electricity System Operator and relevant code administrators. This group will help us develop and assess options, drawing on their expertise and knowledge of how the networks are planned and operated. May commission and coordinate smaller working groups to complete some activities.



Other ways to get involved

There are lots of other opportunities to stay up to date and get involved by:

- > Attending the Charging Futures Forum and using Charging Futures resources (webinars, podcasts)
- > Applying to become a member of the Challenge Group email networkaccessreform@ofgem.gov.uk by **21 January**
- > Observing Delivery Group meetings
- > Getting involved with the wider industry work on balancing services charges (National Grid ESO) and allocation of access (ENA)

Q & A

Facilitated by Gareth Davies,
National Grid SO





Q & A members



Andy Burgess, Ofgem



Jon Parker, Ofgem



Facilitator - Gareth Davies



Ask the experts

Access & Forward Looking Charges

- Jon Parker
- Josh Haskett

Targeted Charging Review

- Andrew Self
- Kayt Button
- Sean Hennity
- Dominic Green

Balancing Services Charges Task Force

- Mike Oxenham



Forum

Coffee break

10:55 – 11:10



Balancing Services Charges Task Force

**Mike Oxenham, Electricity Markets
Development Manager,
National Grid ESO**



Balancing Services Charges Task Force

The background of the slide features four Edison-style light bulbs hanging in a row from top to bottom. The bulbs are illuminated, casting a warm, yellow-orange glow. The background is a soft, out-of-focus gradient of similar warm tones. The text is overlaid on this background.

Mike Oxenham
Electricity Markets Development Manager
National Grid ESO

Wider Context

- Ofgem has announced an ESO-led Task Force under Charging Futures arrangements
- The Task Force will build upon work done to date by ESO with our stakeholders
- The Task Force will inform the direction of balancing services charges



Timing and Deliverables

Based on the Ofgem letter and the draft Terms of Reference the Task Force will:

Deliverable	Date
Assess the extent to which elements of the charge <u>currently</u> provide a forward-looking signal which influences behaviour	February 2019
Assess the <u>potential</u> for existing elements of the charge to be charged more cost reflectively and hence provide better forward-looking signals	March 2019
Assess the <u>feasibility</u> of charging any potentially cost reflective elements of the charge on a forward-looking basis	April 2019 (Draft Report)
Assess the <u>feasibility</u> of the candidate charges to influence user behaviour and so identify extent elements which should considered cost-recovery	May 2019 (Final Report)

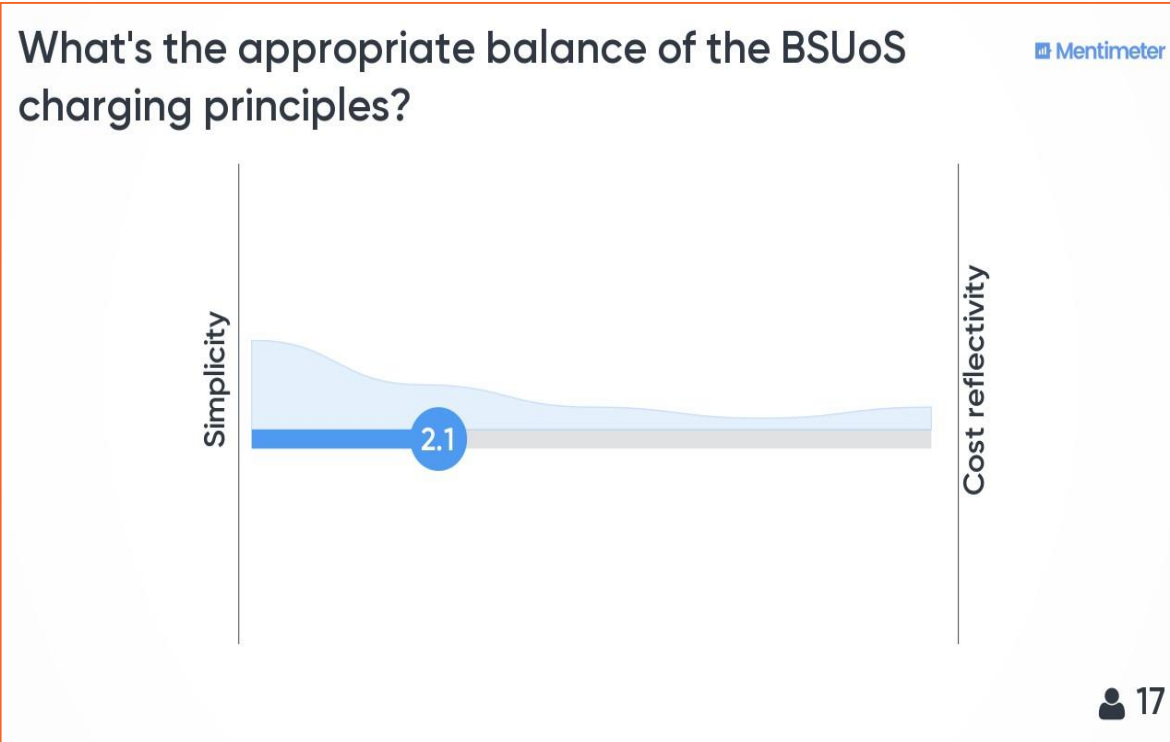
The above timetable will allow Ofgem to consider the task force output alongside feedback to their TCR minded to position consultation and prior to Code Modifications (if any) being raised.



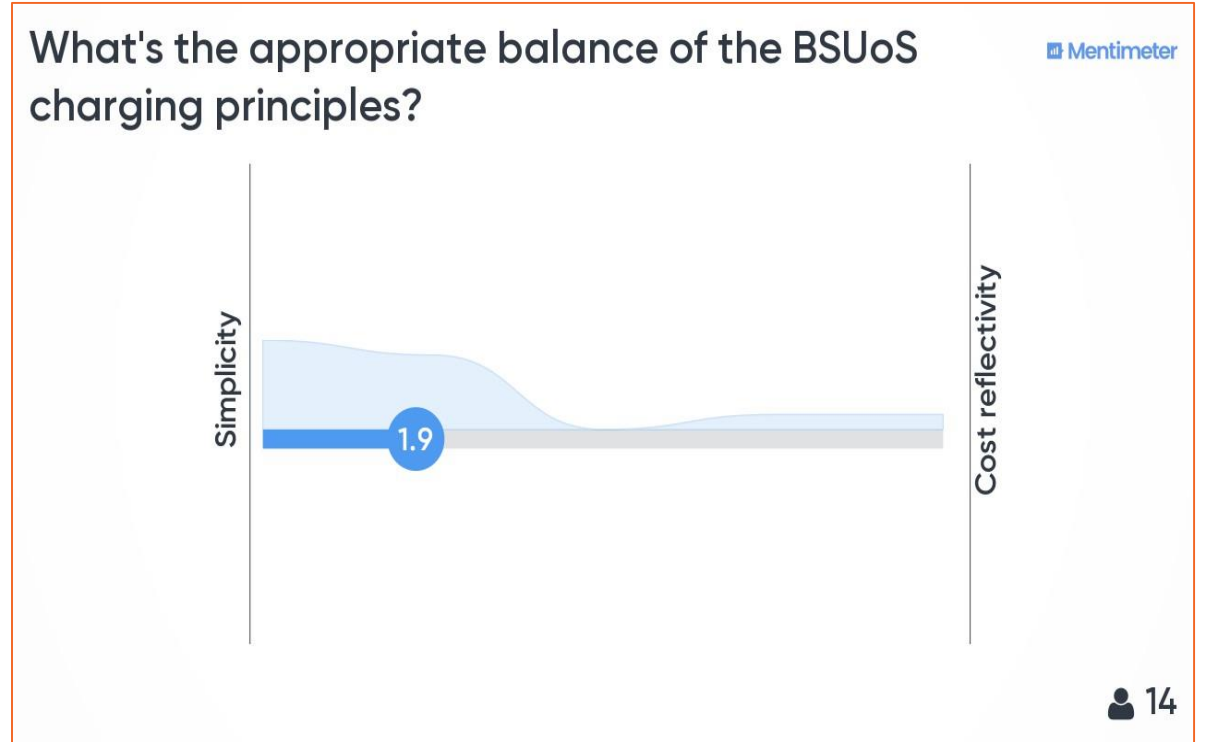
Next Steps

- Task Force members are in the process of being appointed from a selection of experienced and interested volunteers
- The draft Terms of Reference will shortly be approved by Ofgem and published by ESO
- The Task Force is expected to first meet towards end January 2019

ESO Workshop Survey Feedback

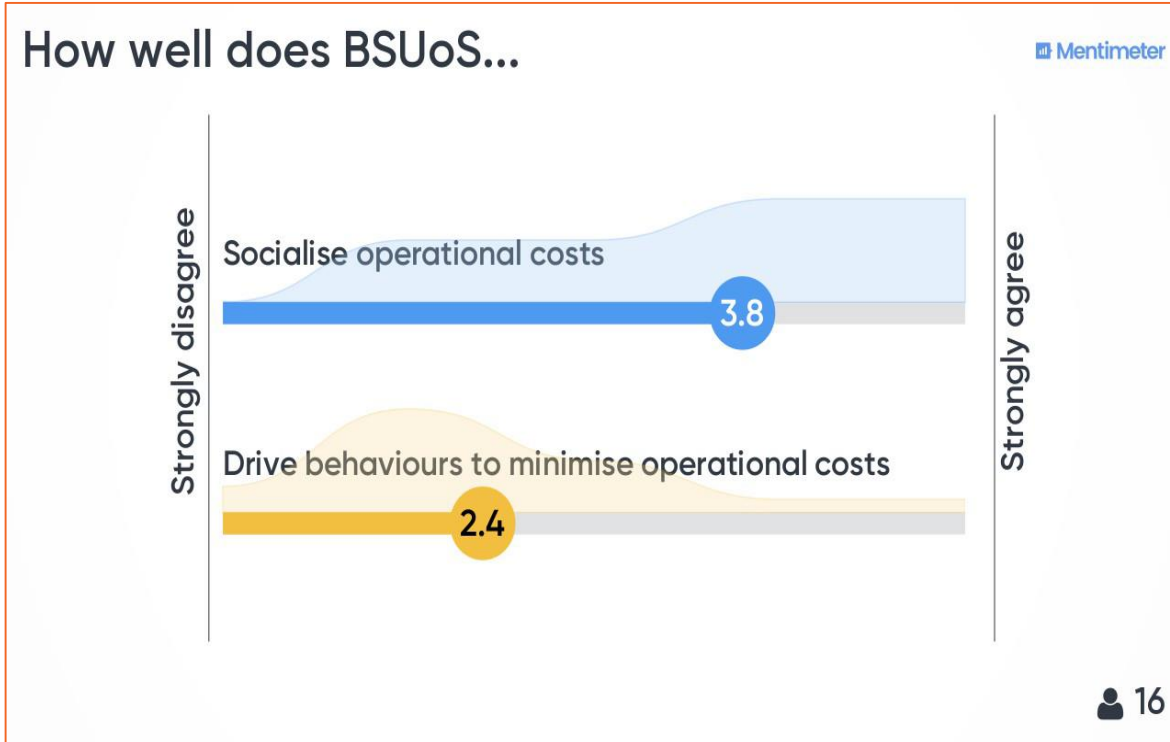


5th October Workshop

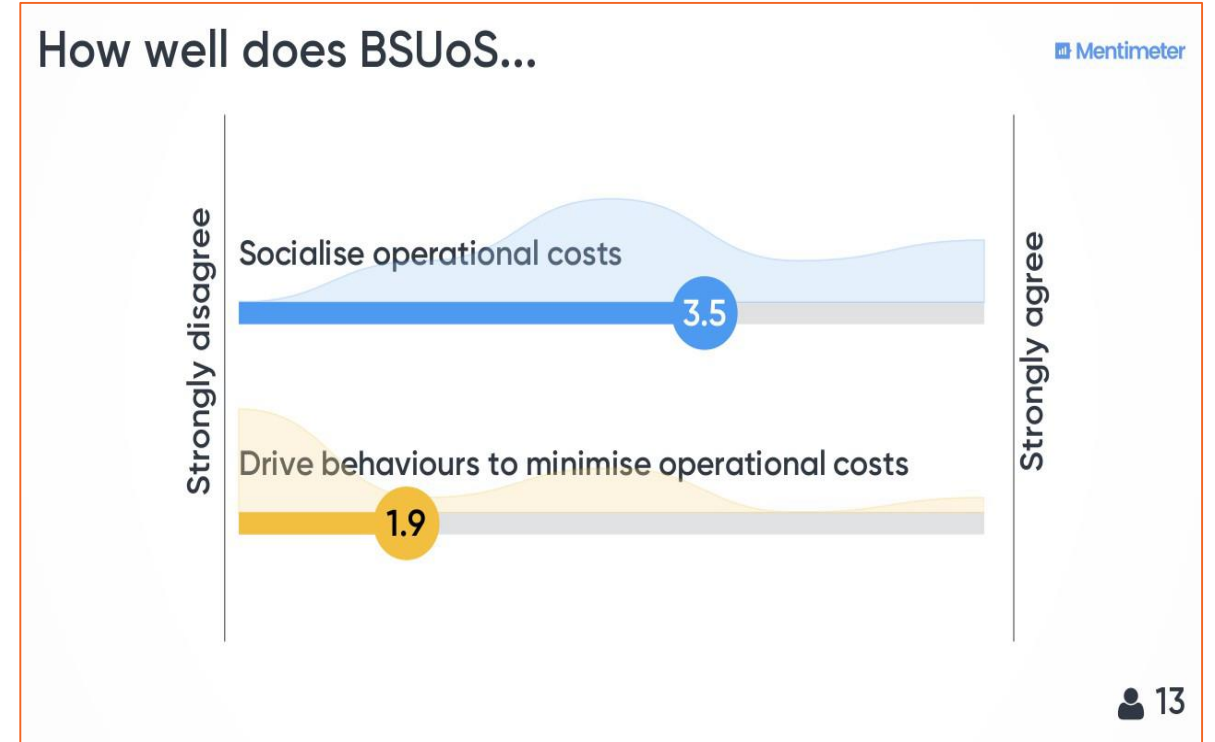


12th October Workshop

ESO Workshop Survey Feedback

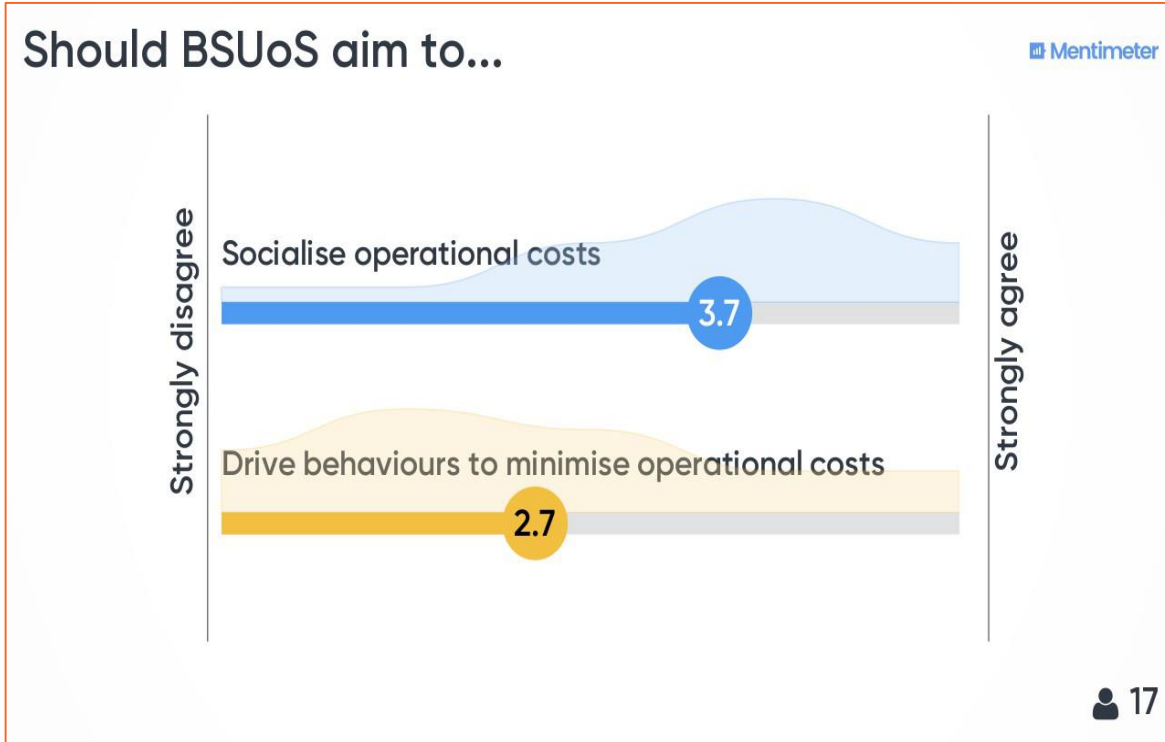


5th October Workshop

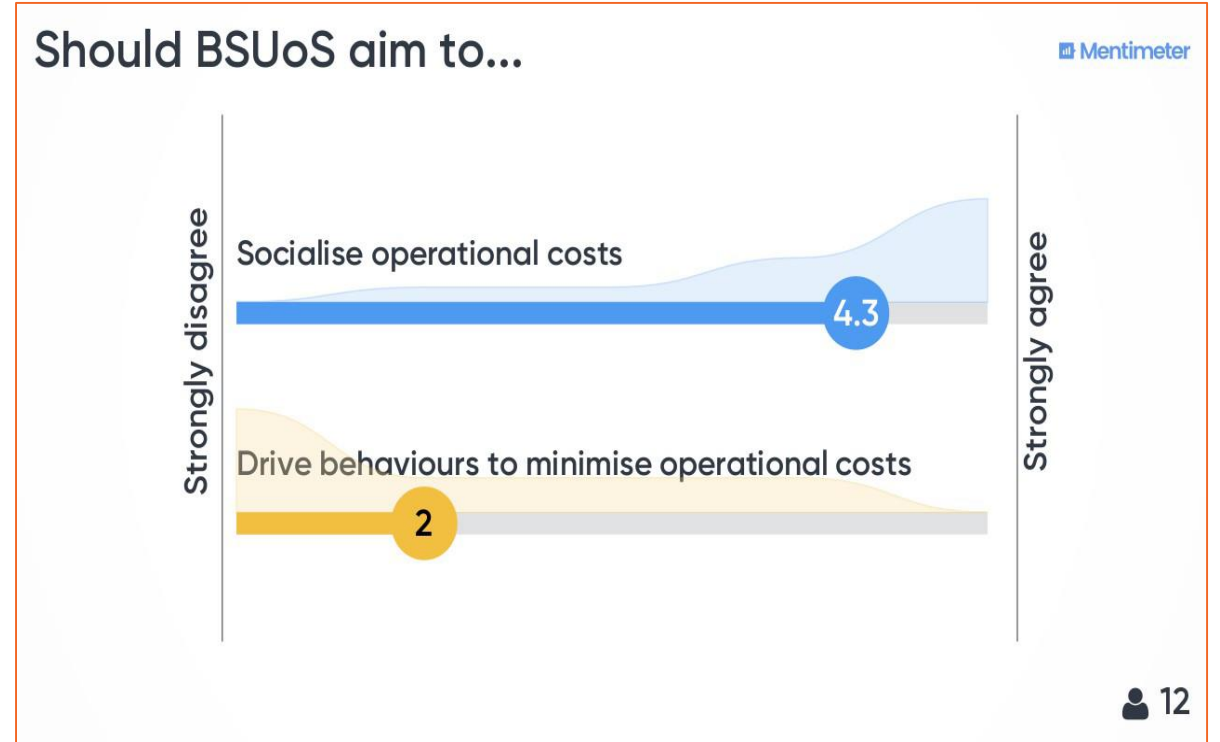


12th October Workshop

ESO Workshop Survey Feedback



5th October Workshop



12th October Workshop

ESO Analysis Example



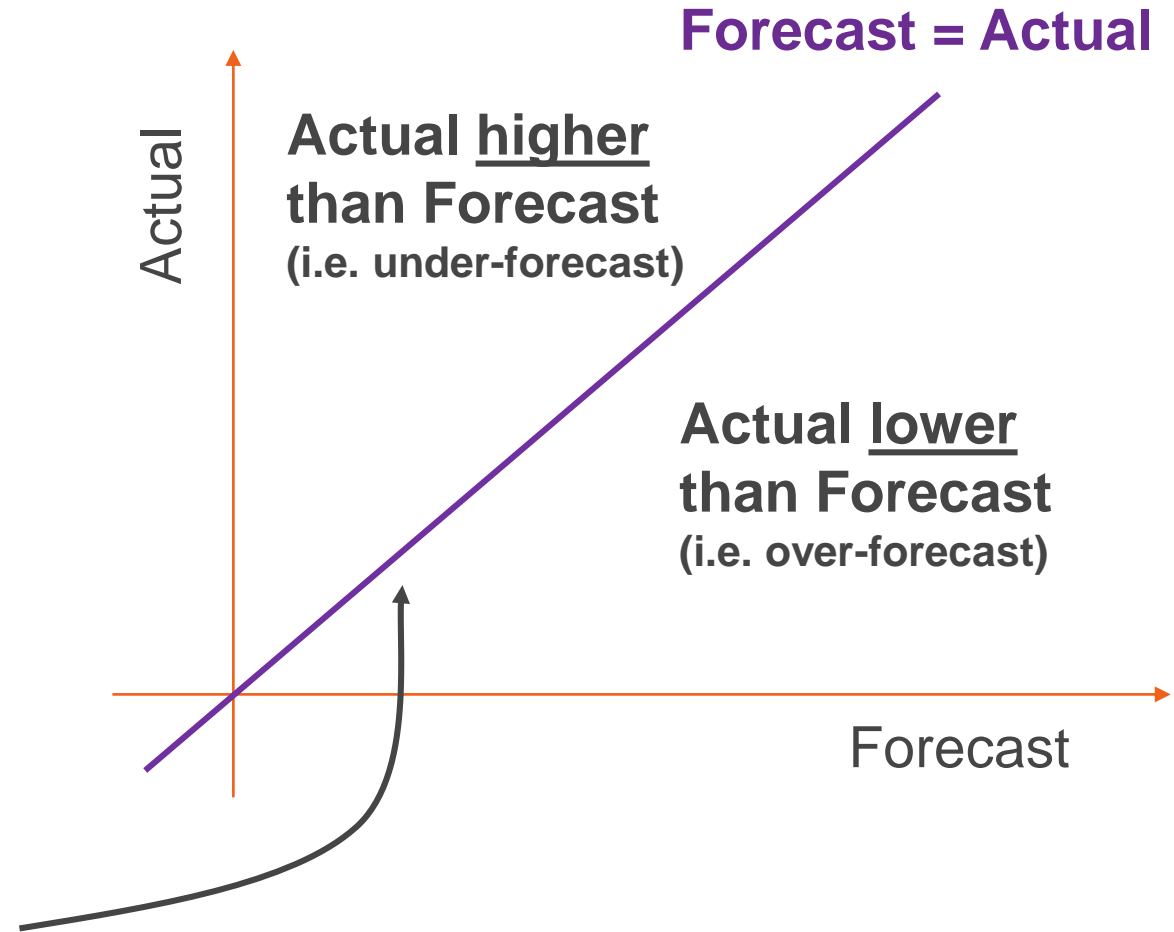
ESO Analysis Example

- It is sometimes assumed that there is a strong correlation between higher BSUoS costs and higher constraint costs due to higher wind generation output.
- This analysis shows there to be no meaningful correlation in the example Settlement Period (SP35) between:
 - Total costs and wind output
 - Constraint costs and wind output
 - Energy imbalance costs and wind output
 - Positive reserve costs and wind output
- We might conclude from this dataset that within current BSUoS charging there are no clear signals between BSUoS costs and wind generation output; this data-set is however limited.

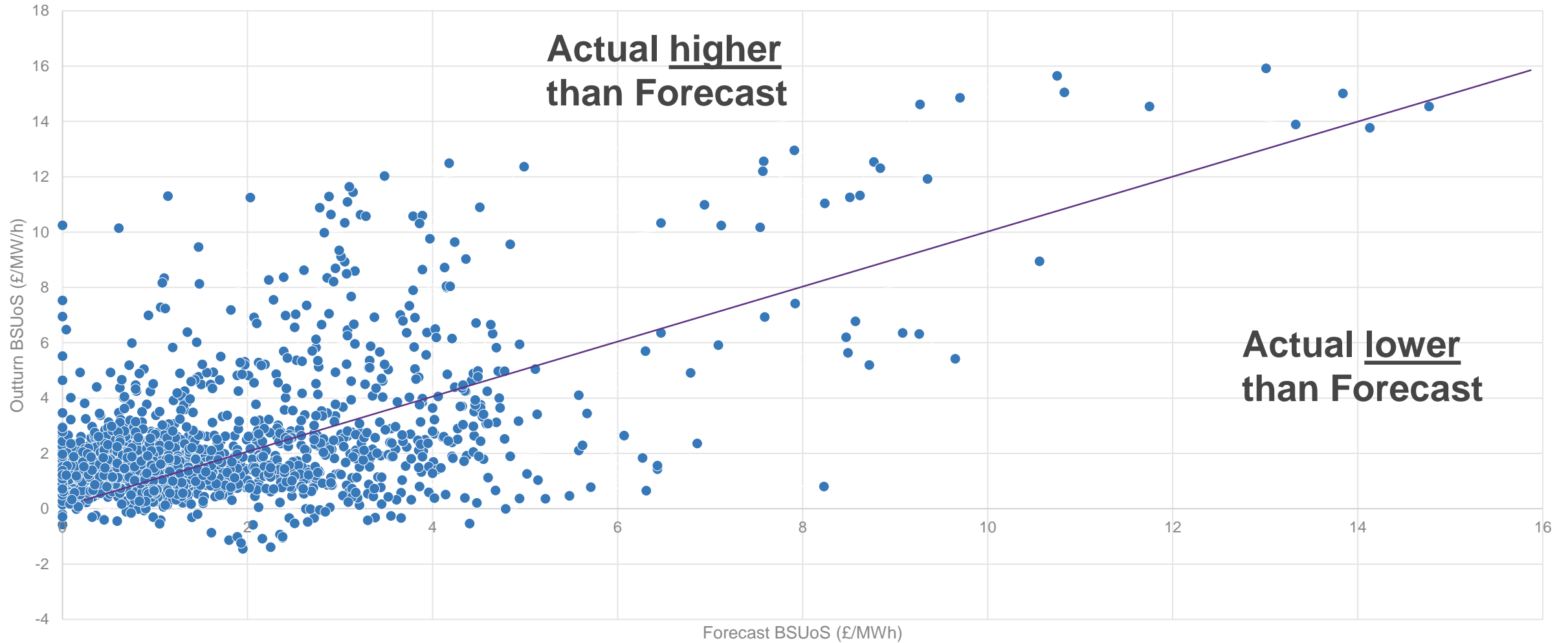
Day-Ahead BSUoS Forecast

- In December 2018, we introduced a day ahead half-hourly BSUoS forecast
- Using Scatterplots, we'll compare the December forecast to the actual data

To be an effective forecast, the actual should be close to this line i.e. closer to the forecast

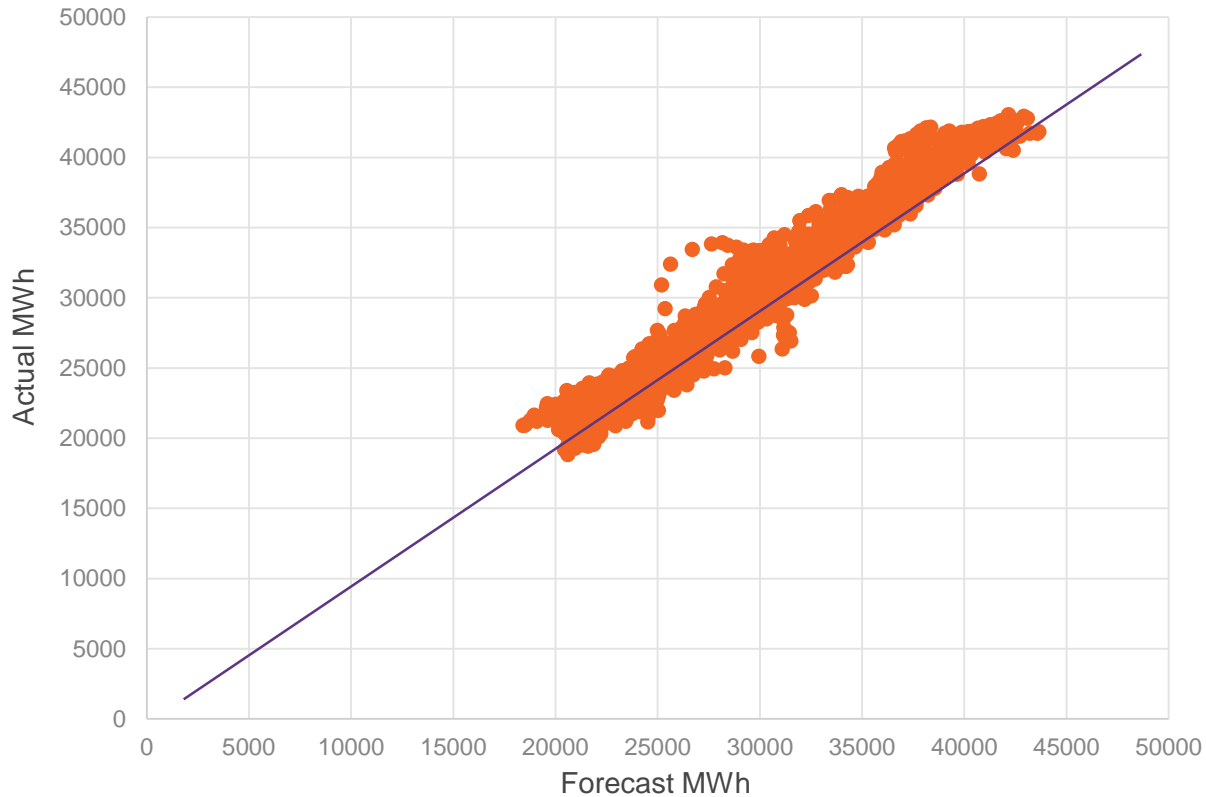


Outturn vs Day-Ahead Forecast BSUoS Tariff (Dec 2018)



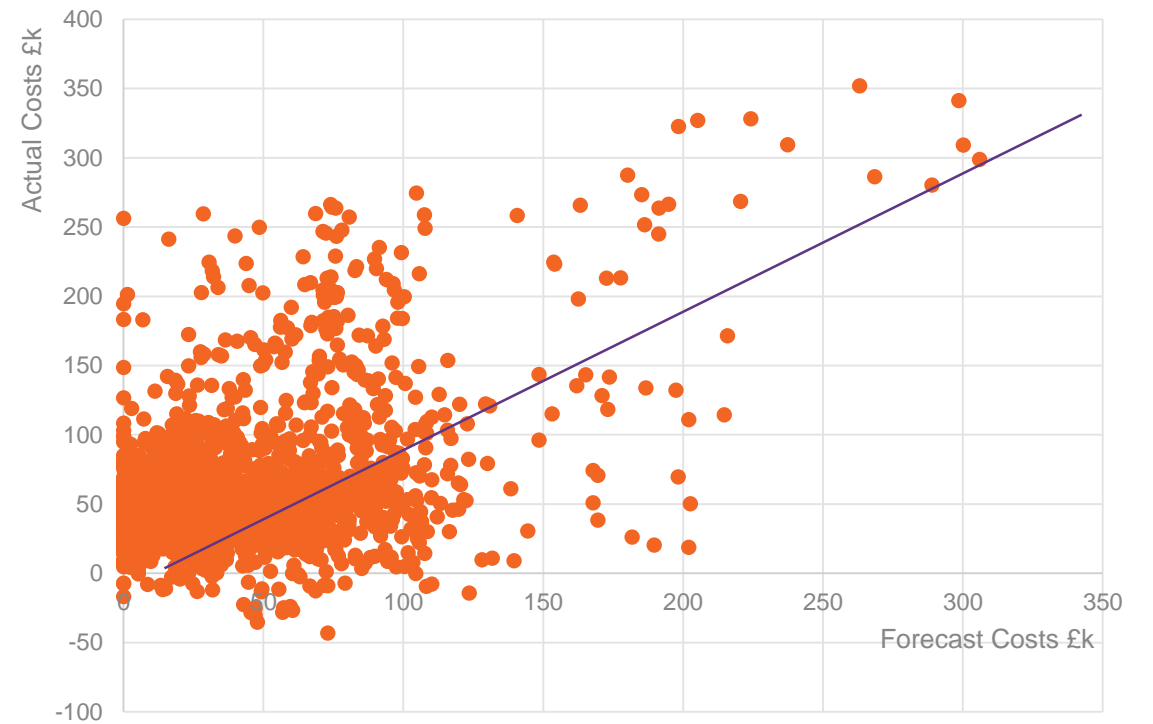
BSUoS = Cost / Volumes

Outturn vs Forecast Volumes (MWh)



**Volumes forecasts are good.
Error over the month is 1%.**

Outturn vs Forecast Costs (£k)



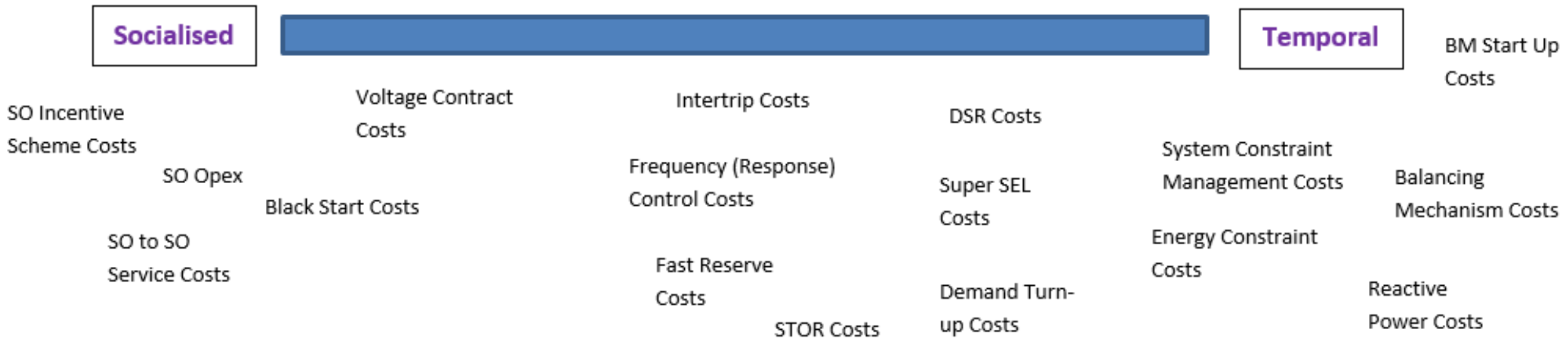
**Cost data is a lot harder to predict
even at day-ahead.**

Your Contribution Session



Your Contribution Session

We thought it would be useful to provide an overview of some of the current cost components within BSUoS as follows.



**Thanks for listening
and for your views!**



Ask the experts

Access & Forward Looking Charges

- Jon Parker
- Josh Haskett

Targeted Charging Review

- Andrew Self
- Kayt Button
- Sean Hennity
- Dominic Green

Balancing Services Charges Task Force

- Mike Oxenham



Forum

Lunch

12:25 – 13:10



Targeted Charging Review Significant Code Review

Andrew Self, Head of TCR, Ofgem



Aim of this session

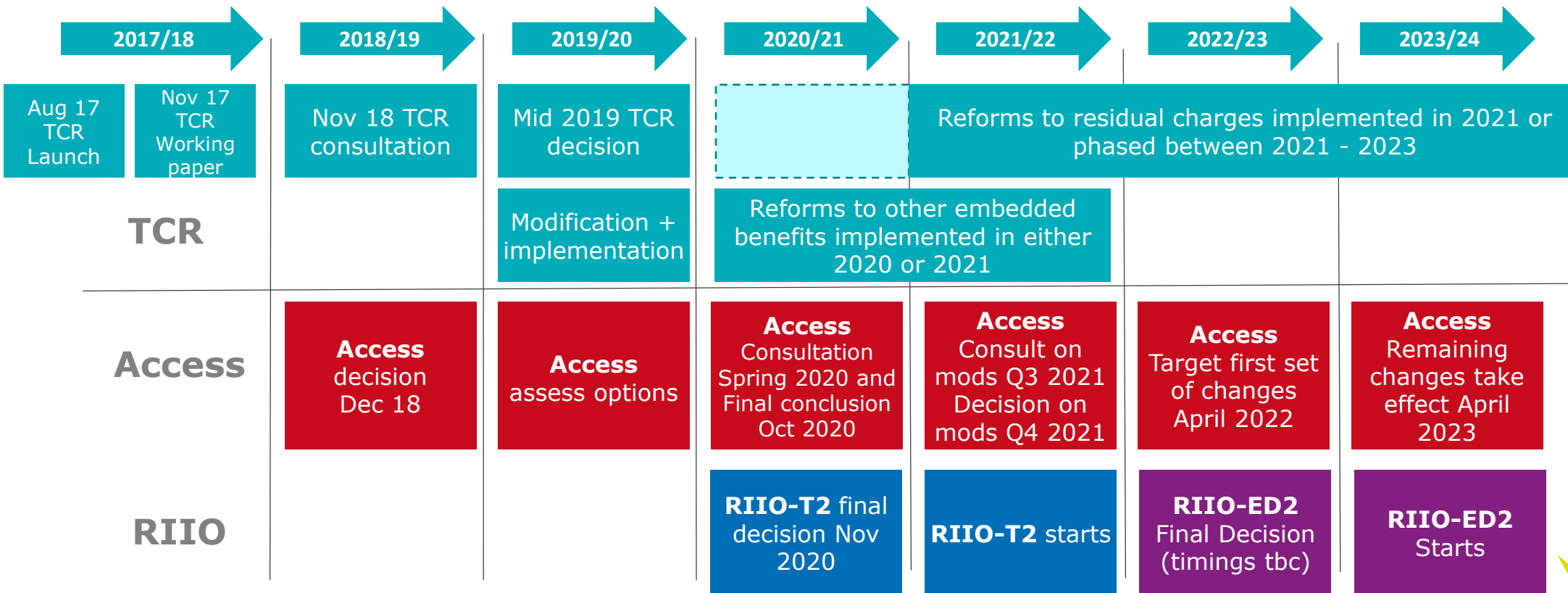
- Set out the objectives of the TCR and the links to other projects
- To present our draft findings and ensure our proposed policy positions are understood ahead of submitting responses to our consultation
- Listen to your feedback and early views on our proposals

This is a consultation and is not a final decision.

Our consultation closes on 4 February and we invite all stakeholders to submit responses.

Reminder: TCR and interaction with other Ofgem projects

We are reviewing the charging framework holistically; working closely with the Access reform and RIIO project teams to ensure a consistent approach is taken to the different reforms underway across the energy system.



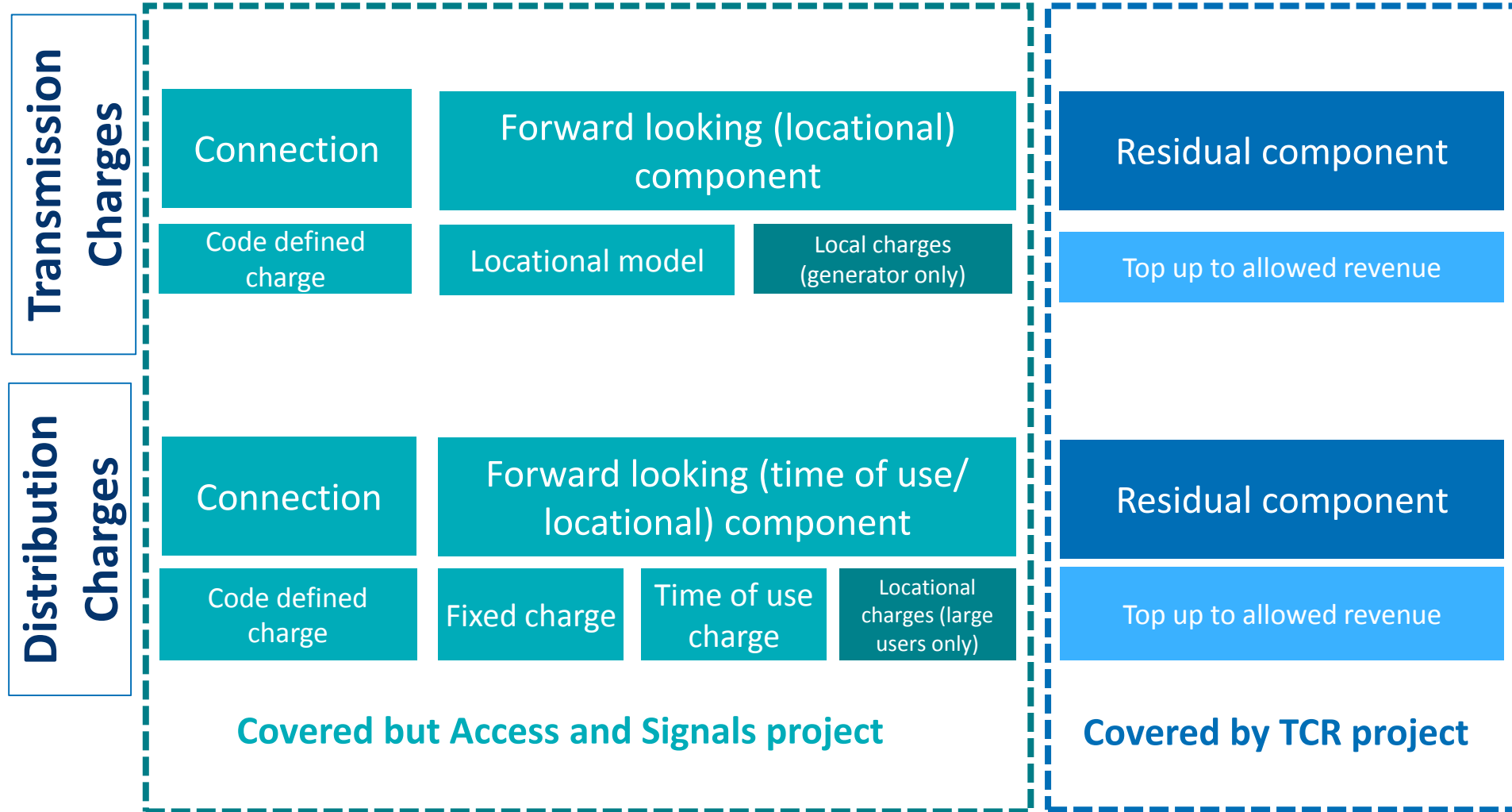


Reminder: what is the TCR

- It aims to reduce the harmful distortions caused by the current charging arrangements and ensure residual charges are fairly distributed.
- Three principles have guided our work:
 - a) Reducing harmful distortions
 - b) Fairness
 - c) Proportionality and practical considerations.
- The TCR has two key areas of proposed reform:
 - Residual network charges
 - Other embedded benefits



Reminder: charging components



Opening question

How well do you currently understand the proposals in our TCR consultation? (0-10)



Reminder: why reform residual the network charging framework?

What is the problem?

- The current charging framework is designed for a system with very different characteristics than today
- The rapid pace of changes in energy mean that the issues are likely to become worse over time
- Ofgem is therefore taking action to address this in the interests of current and future consumers as a whole.

We think that residual network charges should be reviewed in order to reduce harmful distortions, and so that costs are shared fairly.



Reminder: why reform residual the network charging framework?

Under the current system, we believe:

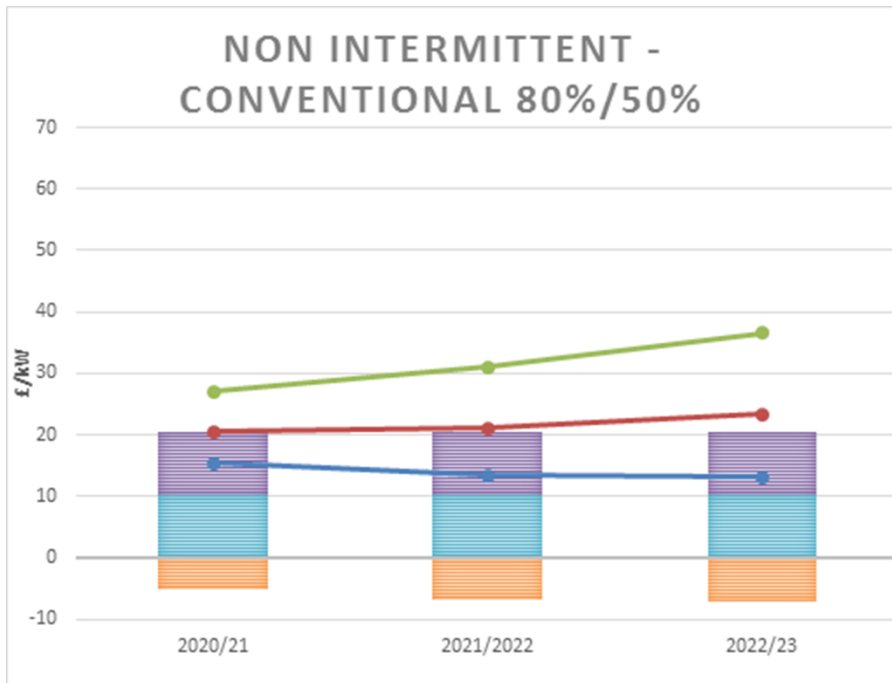
- Some users may make decisions based (in part) on residual charges, and pay lower charges as a result, although their actions have not reduced the total level of costs which need to be recovered.
- The increase in availability and affordability of smaller scale generation means that some consumers can reduce their net demand.
- The current way that residual charges are set creates some incentives that could lead to a more expensive system overall.
- Current residual charges fall increasingly on groups of customers who are less able to take action.



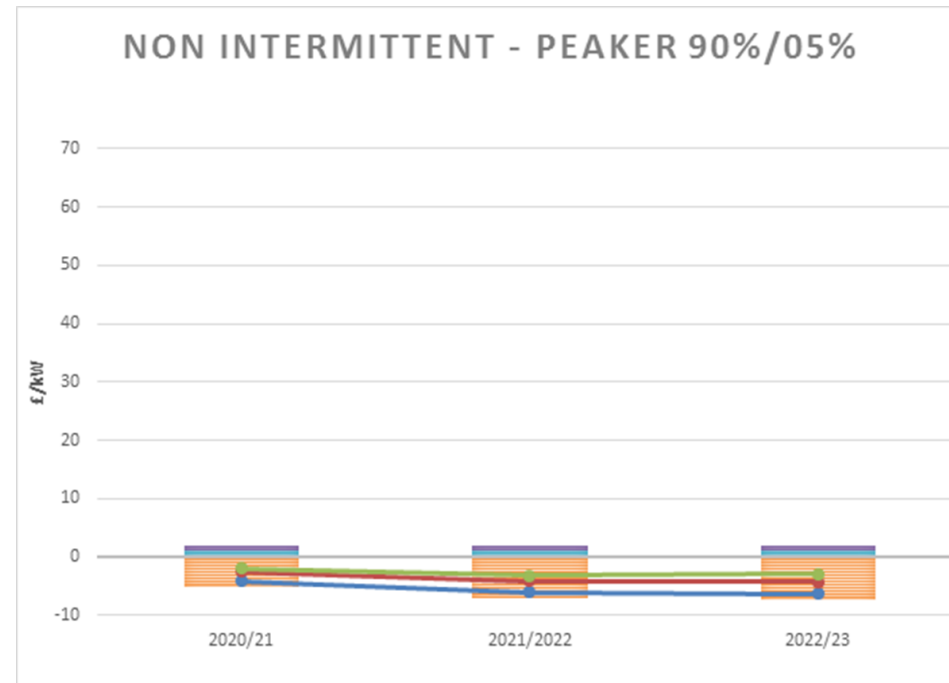
Reminder: why embedded benefits require reform?

We think 'embedded benefits' are impacting various markets:

- Wholesale price and dispatch
- Capacity Market (CM)
- Contracts for Difference (CfDs)
- Inefficient investment in generation capacity
- Ancillary services
- Directly increased consumer costs



BSUoS payment
Generation residual
Total - Rising to £3.50/MWh (straight line)



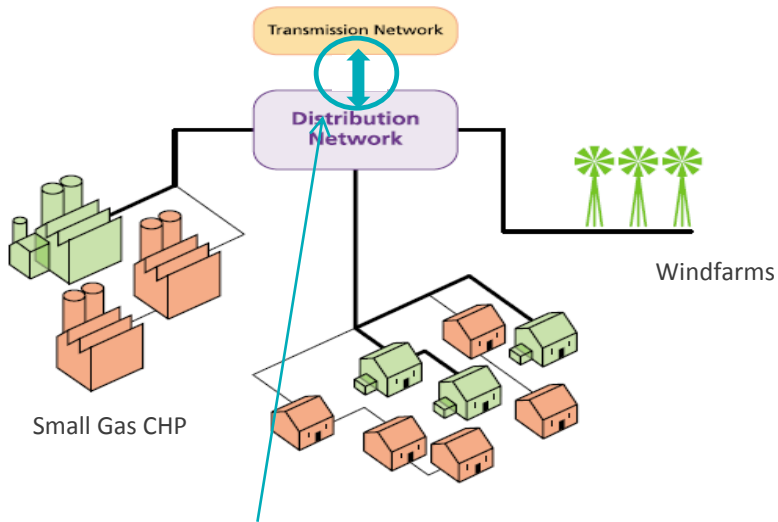
BSUoS avoided charges
Total - Flat at £2.33/MWh
Total - Rising to £5.00/MWh (straight line)



Distributed Generation is growing fast

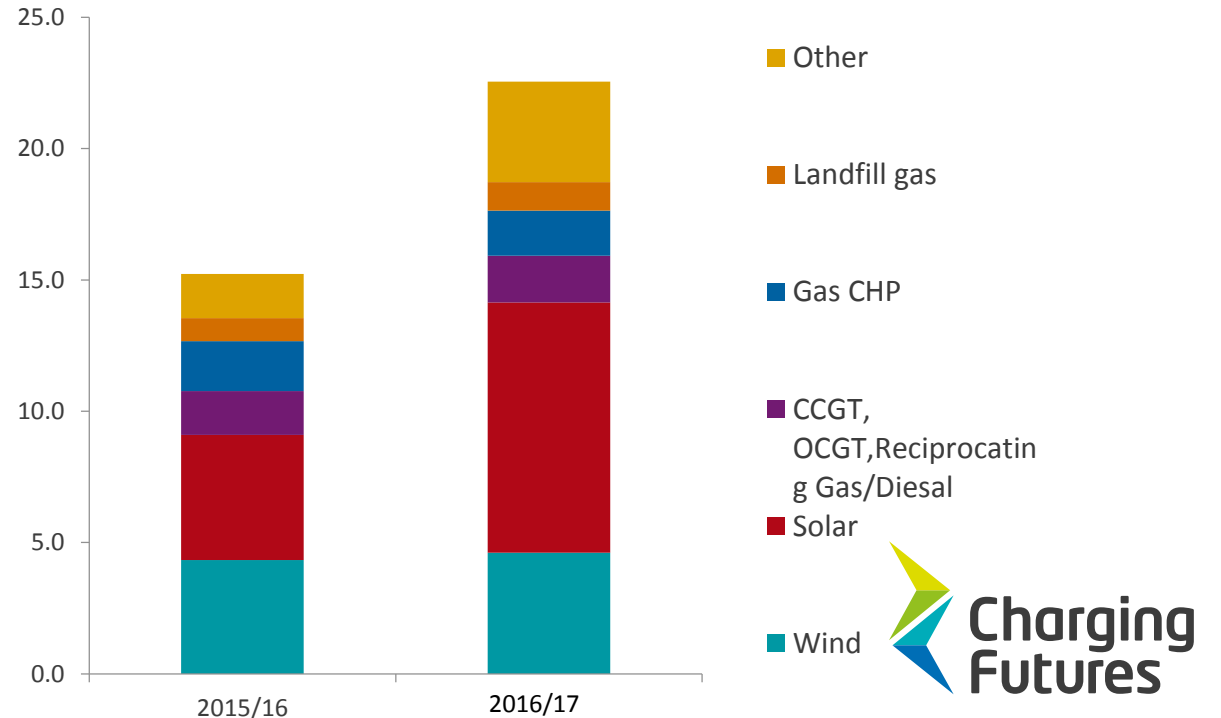
Suppliers are charged transmission charges (TNUoS) and system operation charges (BSUoS) based on their **NET DEMAND** – this leads to Embedded Benefits

National Grid estimate that there is 25GW of DG connected. Both renewable and gas & diesel plant. Last year it contributed 4-5GW (c.10%) towards peak demand



NET DEMAND

Demand measured here is net demand. National Grid measure demand here to charge transmission charges





Embedded benefits

- There are a range of embedded benefits – we have removed the largest distortion, but others remain

Issue	Description	Size
Transmission Demand Residual	Smaller distributed generation can receive these payments from suppliers and National Grid. On-site generators can receive the same payments when exporting and can save demand users the same charges	£47/kW <i>£350m/year cost to consumers and rising</i>
Transmission Generation Residual	Smaller distributed generation does not pay or receive the generation residual. Neither does on-site generation	-£2.34/kW Payment to transmission generators increase size of Transmission Demand Residual and distorts wholesale markets
BSUoS charges: payments from suppliers	The demand BSUoS charge is based on a supplier's net consumption from the transmission system, so smaller distributed generation can offset demand and receive payments for reducing charges for suppliers. On-site generators can receive the same payments when exporting and can save demand users the same charges	£2-£2.50/MWh <i>£100m-£150m/year additional to consumers</i>
BSUoS charges: avoided charges	Smaller embedded generation currently does not pay generation BSUoS charges	£2-£2.50/MWh <i>£100m-£150m/year additional to consumers</i>

Residual charges – our proposals





Using the TCR principles to assess the refined options

Option	Reducing Distortions	Fairness	Proportionality and practicality	Distributional impact
1) Fixed charge (set by volume)	Removes existing distortions	Different charges for smaller and larger user groups is equitable	Relatively easy to implement, but boundary issues	Low distributional impact between segments, but some within
2) Agreed capacity charge (deemed for domestics and microbusiness)	Removes existing distortions	Lower transparency and justifiability	Requires deemed capacity values, and management of capacity values	Lower distributional impact within segments
3) Rolling ex ante capacity charges	Removes existing distortions but ex-post is avoidable	Lower transparency and justifiability	Ex-post element requires major system changes	Large redistribution of charges
4) Mostly Fixed charges (75%), with ex-post (25%)	Removes existing distortions but ex-post is avoidable	Complex and non transparent charge	Ex-post element requires major system changes	Modest redistribution of charges
5) Mostly agreed capacity (75%), with Net volumetric (25%)	Removes most distortions, but leaves in place some volumetric charge	Lower transparency and justifiability	Requires deemed capacity values, and management of capacity values	Lower distributional impact within segments

- To narrow down the 5 refined options we conducted a qualitative based assessment, comparing the options to the TCR principles
- We identified 2 leading charges to continue for further analysis and consultation

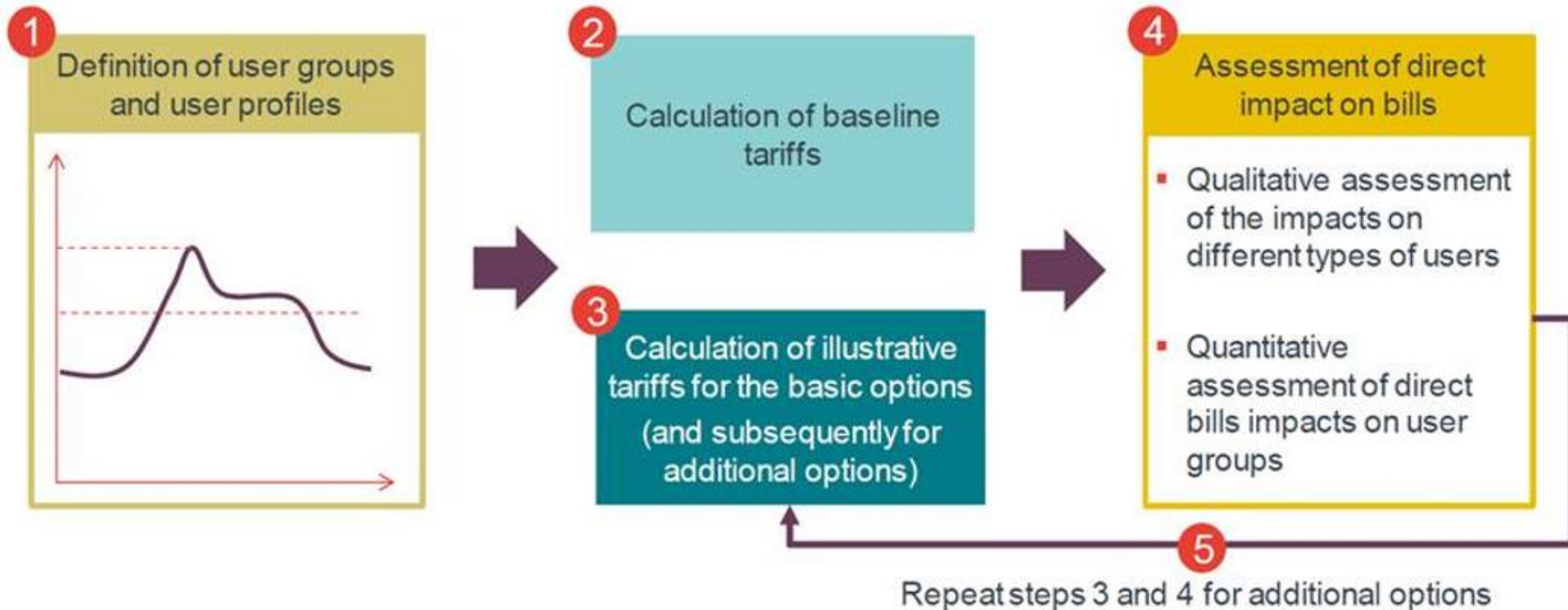


Our lead options

Our two lead options are **Fixed** and **Agreed Capacity** (deemed and fixed for smaller users)

Option	Justification	Allocation approach		Charge basis	
A) Fixed Fixed charge is calculated for each user segment, defined by Line Loss Factor Classes. The allocation between segments is based on total segment metered volume (net)	There is a strong theoretical underpinning for fixed charges. Allocation is based on an easily measurable quantity, and updates annually for segments	Small users	Allocated based on net volumes in segment	Small users	Fixed charge
		Large users		Large users	
B) Agreed Capacity For those larger users which have agreed capacity, a charge is calculated directly. Deemed capacities are set for domestics and smaller non-domestics	Ex ante capacity charges for larger users allow for more differentiation and fewer boundary effects. Reduces distributional impact by deeming capacity for small users	Small users	Allocated based on deemed capacities, with bands for domestics and small businesses	Small users	Fixed charge
		Large users	Allocated based on agreed capacities	Large users	Agreed capacity charge

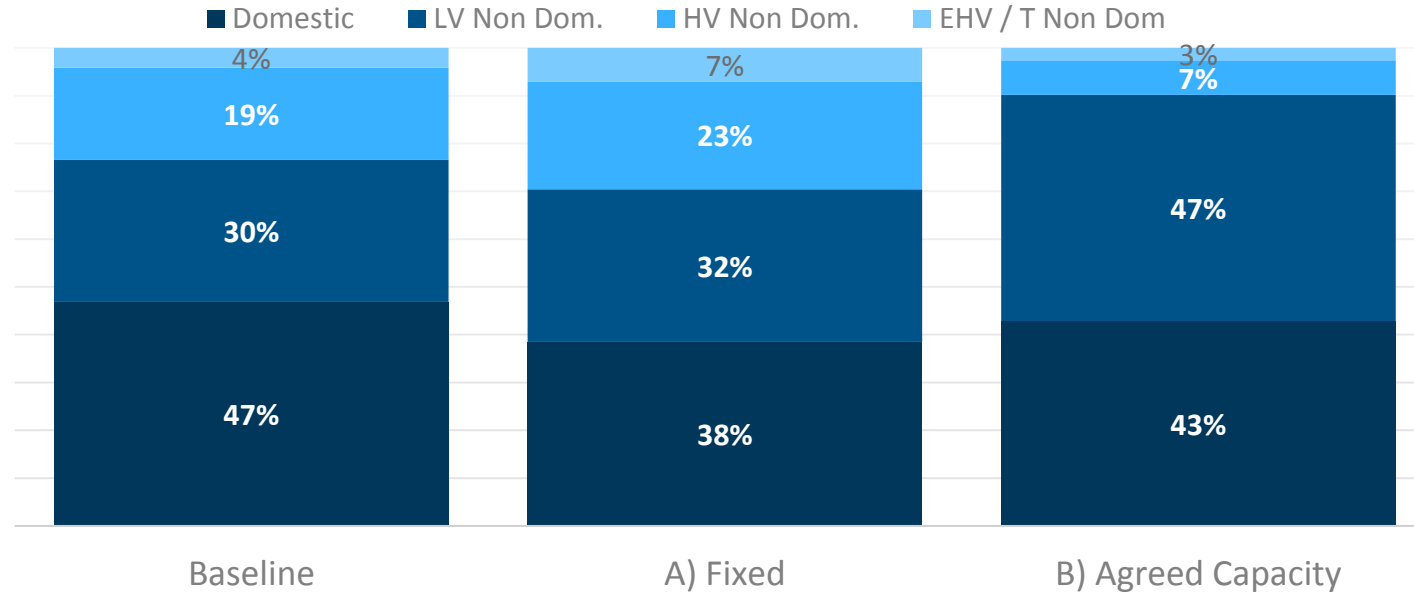
How we conducted the distributional analysis





Impacts of leading options

COMBINED DISTRIBUTION AND TRANSMISSION

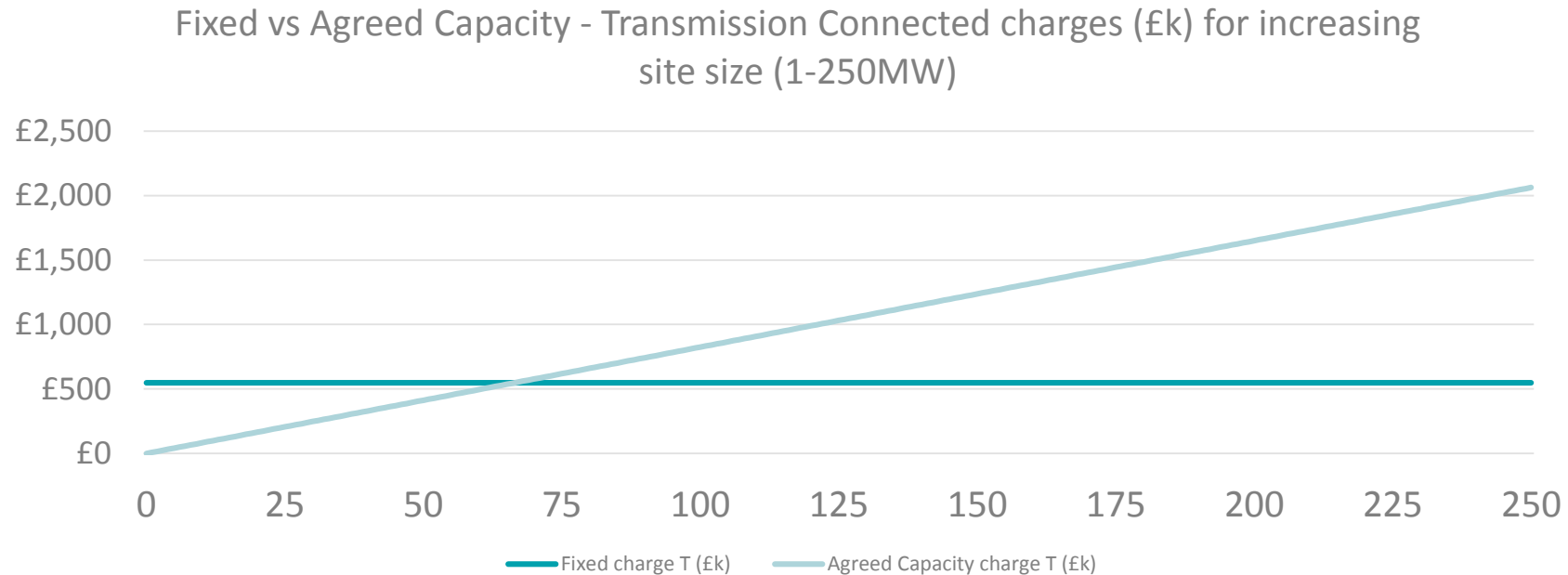


- **Fixed charges** allocate a slightly larger proportion of residual charges to non-domestic customer segments.
- **Agreed Capacity** charging allocates **less transmission** and slightly **more distribution to domestic users**, driven by assumption of domestic capacity.



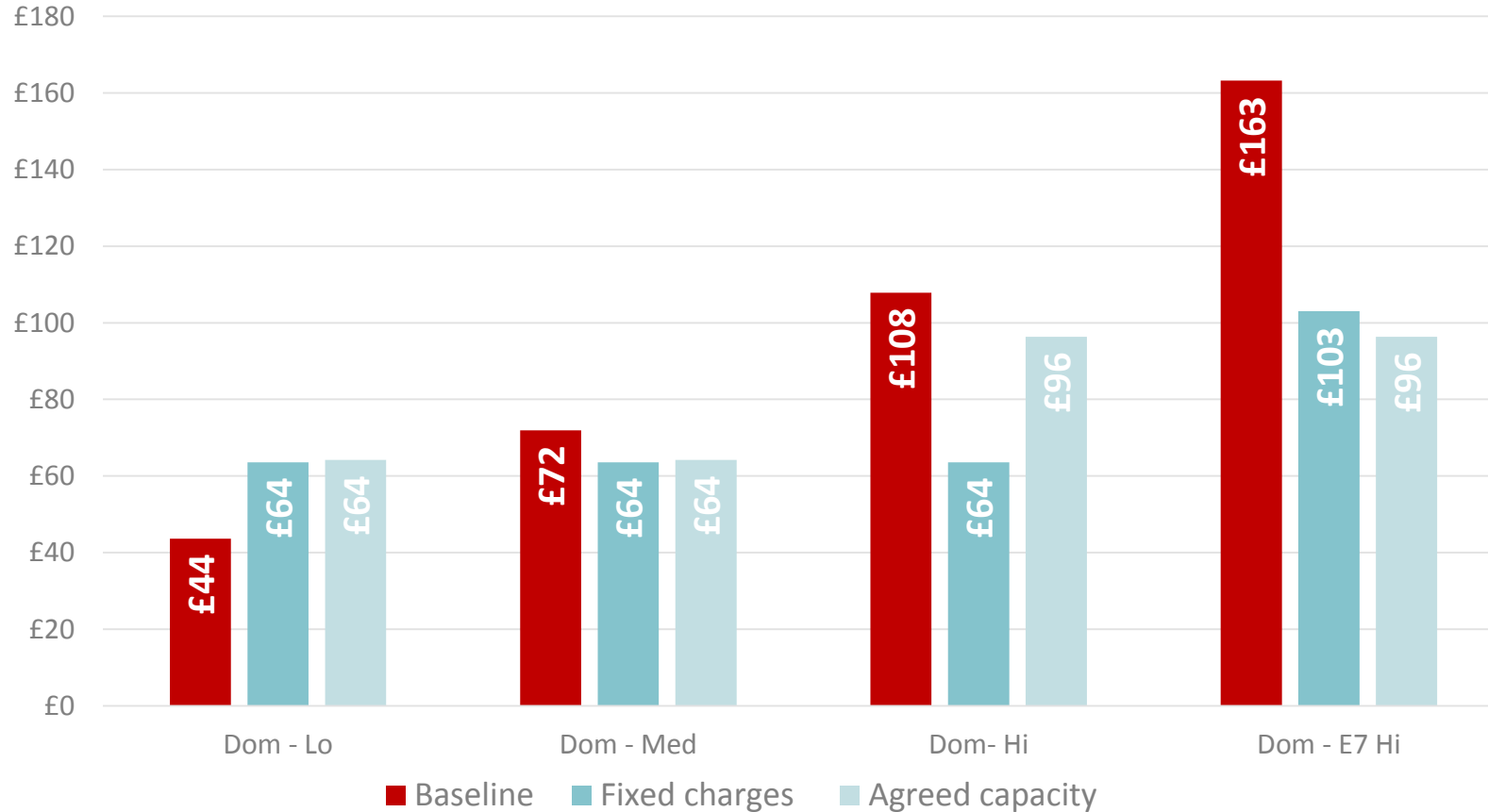
Impacts of leading options

Our leading options take different approaches to the size of charges paid by different users within a user class



- **Fixed charges** - All users within a user class will pay same charge, set based on the *segment's* contribution to the volumes on the system
- **Agreed Capacity** - User with agreed capacity holdings will pay based on the capacity they hold, so larger users will pay higher charges. Capacity charge reflects the *individual site's* share of capacity on the system

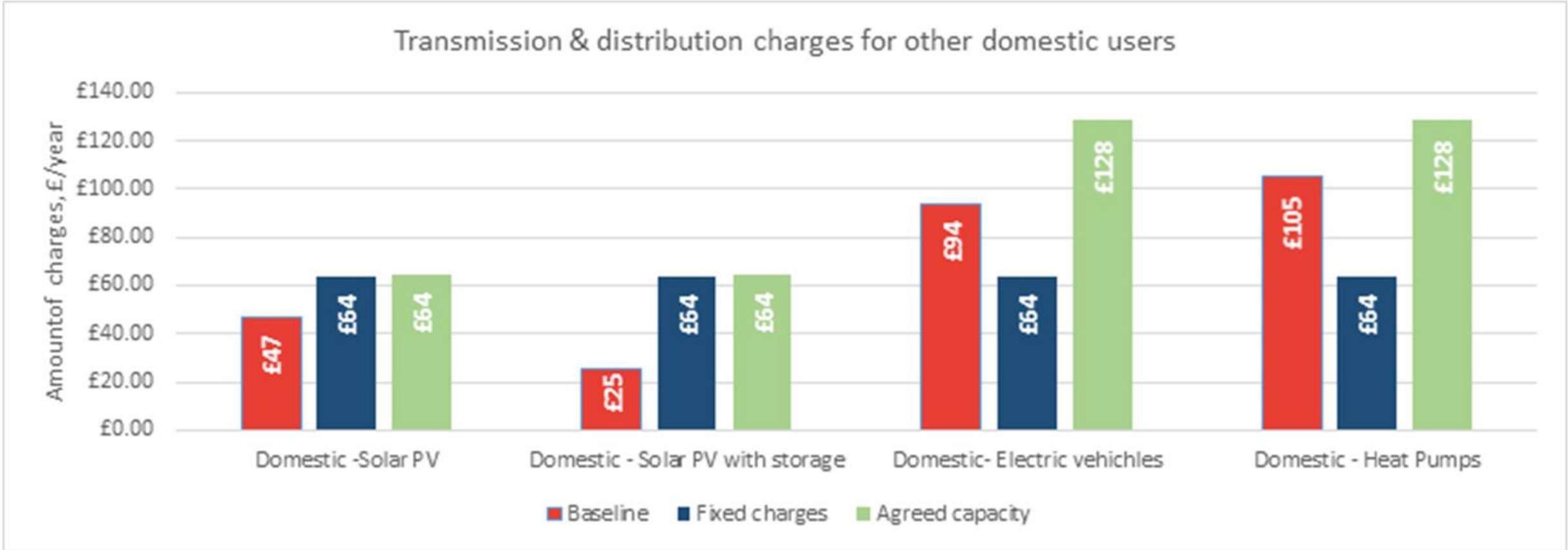
Impacts on Domestic User Groups (North East)



- Both of our leading options lead to **annual reductions in residual charges** of around **£8 for the median user**
- Higher consuming users see reductions in their charges, and low consuming users will see increases



Impacts on Domestic with onsite installations

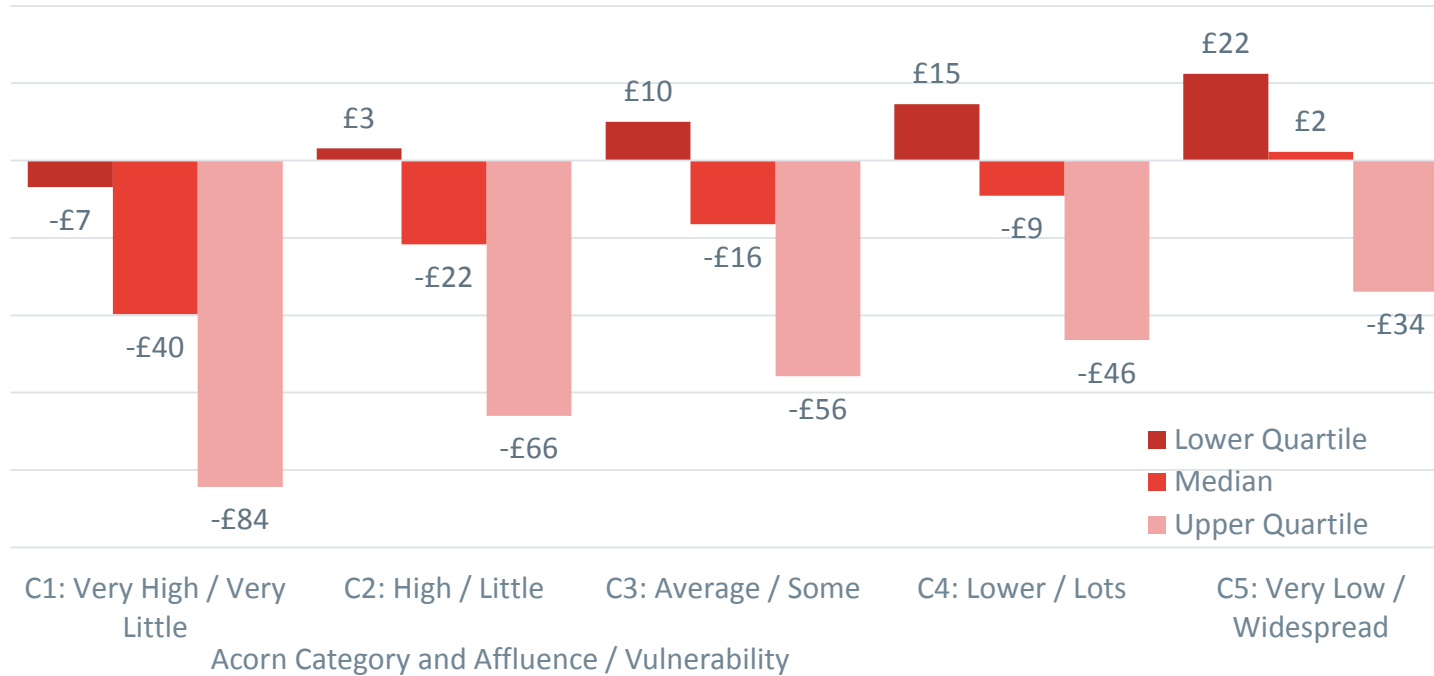


- Those households with solar PV or battery installations will see an increase in their contribution to residual charges
- Households with EVs or heat pumps will see a reduction under Fixed charges and increases under agreed capacity



Impact on vulnerable users

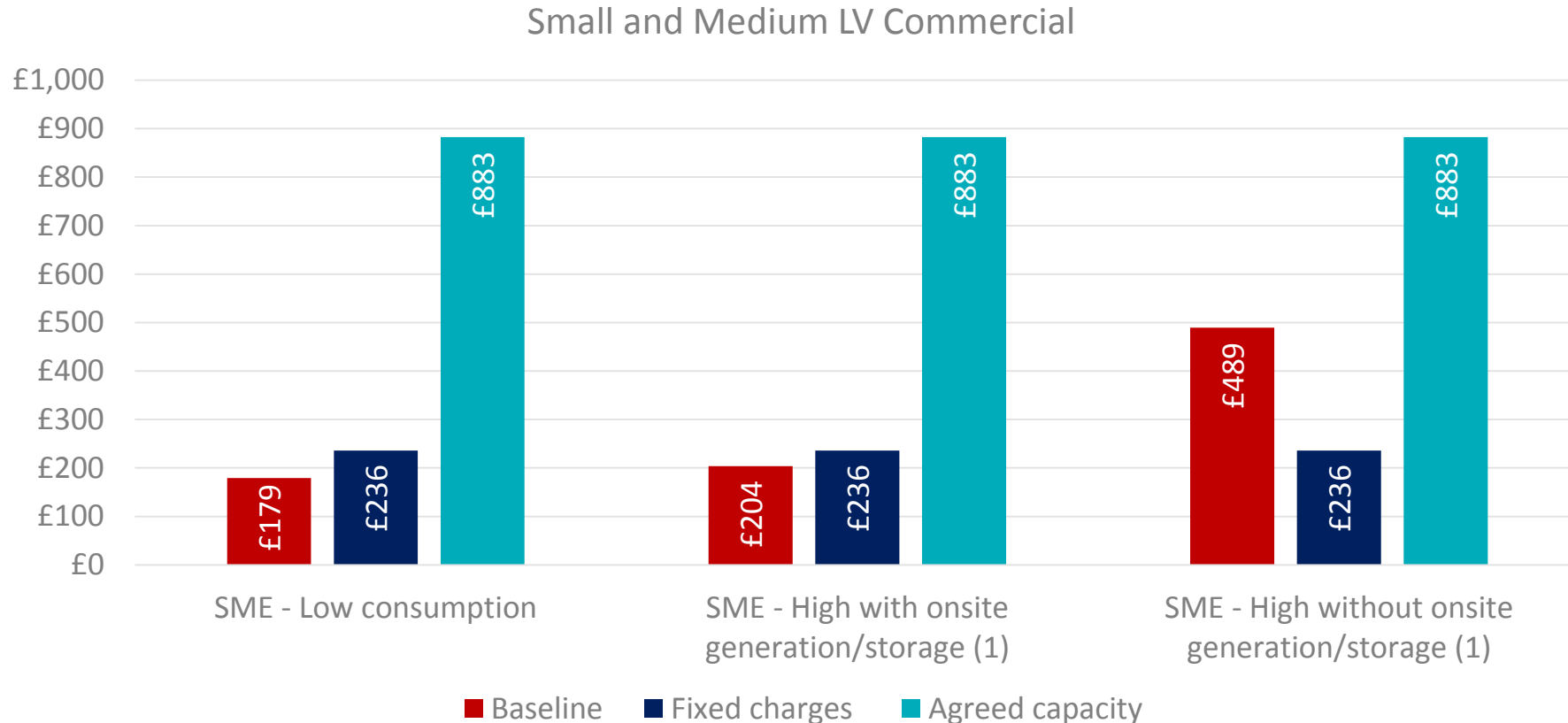
Static Impact of moving to Fixed change (£/yr) by Acorn Category



- Vulnerable consumers are present in most domestic consumption groups. There is a large range of possible consumption for vulnerable users, and so a range of bill impacts
- Most vulnerable consumers will benefit from our leading option



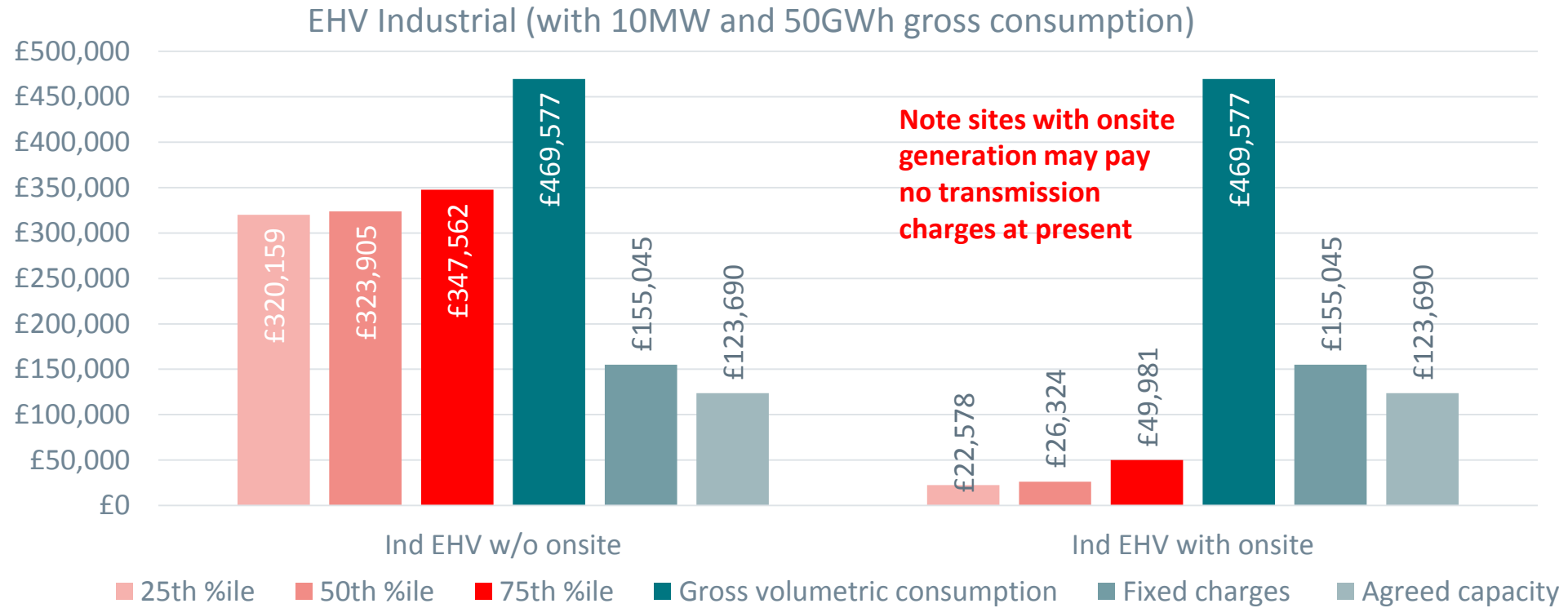
Impacts on Small and Medium low voltage Commercial



- Under a **fixed charge option**, all SMEs in the same LLFC will receive the same charge, meaning that **larger users will see reductions** and some users at the lower consuming end will see **moderate increases**
- Under an **agreed capacity option**, **some** users will face an **increase**. This is because these users will move from being charged on a volumetric basis on their own consumption, which may be similar to that of a household, to a Fixed Charge which reflects the average consumption within an SME Line Loss Factor Class, which is higher



Impacts on high-level segment contributions



- The degree of change seen by extra high voltage sites are dependent on their current charge
- There is significant variation in charges due to location and whether the user manages their exposure to triad charges. For those who do not participate in triad management, both charging options may lead to significant reductions in charges

EDCM fixed charges

EDCM fixed charge levels

Within the EDCM, all sites have a level of import capacity. As such, in our consultation, for consistency, we applied a fixed charge on all ‘final demand connections’. This is explained in the Frontier report:

- > *‘The EDCM fixed charge is calculated by dividing the total residual to recover by the number of connected customers that are not storage sites. From the data provided by DNOs it is not possible to separately identify sites which are specifically generation sites from those that are load with BTMG. Therefore, the estimate of the fixed charge includes all EDCM customers, which includes generation specific sites. This is unlikely to reflect Ofgem’s intended policy position and hence, the fixed charge estimated is likely to be an underestimate. The charge is likely to be particularly sensitive to this assumption. For example, if the actual number of demand sites is half the number of customers assumed, the fixed charge would double.’*

<https://www.ofgem.gov.uk/publications-and-updates/targeted-charging-review-minded-decision-and-draft-impact-assessment>



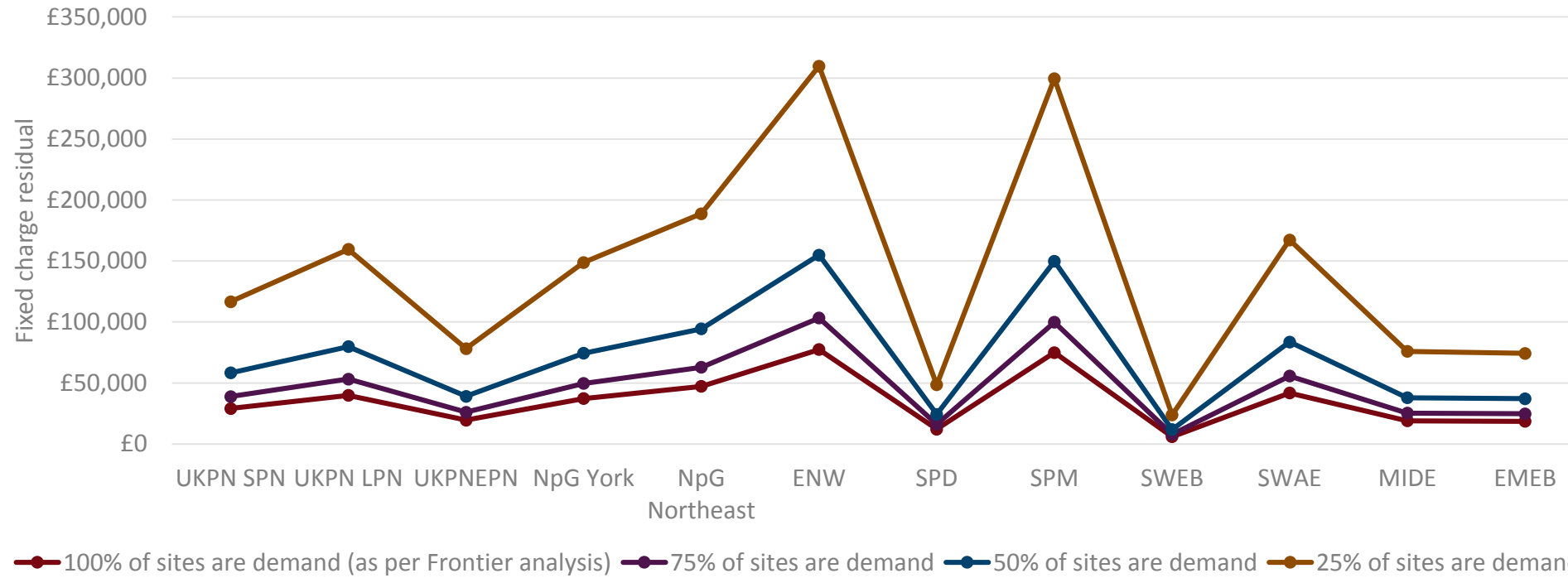
EDCM fixed charges

- We have received some queries regarding this approach, with stakeholders wanting to be understand the impact of these fixed charges in their specific DNO area
- Information in the consultation and on the DNO websites should allow for users to undertake these calculations
- Below is a representation of the North East region and how the residual value would change dependent on the percentage of 'demand sites'. The next slides gives the same calculations across the DNO areas:

Percentage of 'demand sites'	100%	75%	50%	25%
Resulting residual fixed charge	£47,186	£62,915	£94,372	£188,744

EDCM fixed charges

Residual value by percentage of demand sites



	UKPN SPN	UKPN LPN	UKPNEPN	NpG York	NpG Northeast	ENW	SPD	SPM	SWEB	SWAE	MIDE	EMEB
Total number of sites (excluding storage)	91	47	247	146	60	117	115	229	276	183	100	264
Residual value (£m 2019/20)	2,652,823	1,874,532	4,826,684	5,432,247	2,831,163	9,059,848	1,395,296	17,147,745	1,638,234	7,649,670	1,897,315	4,900,169



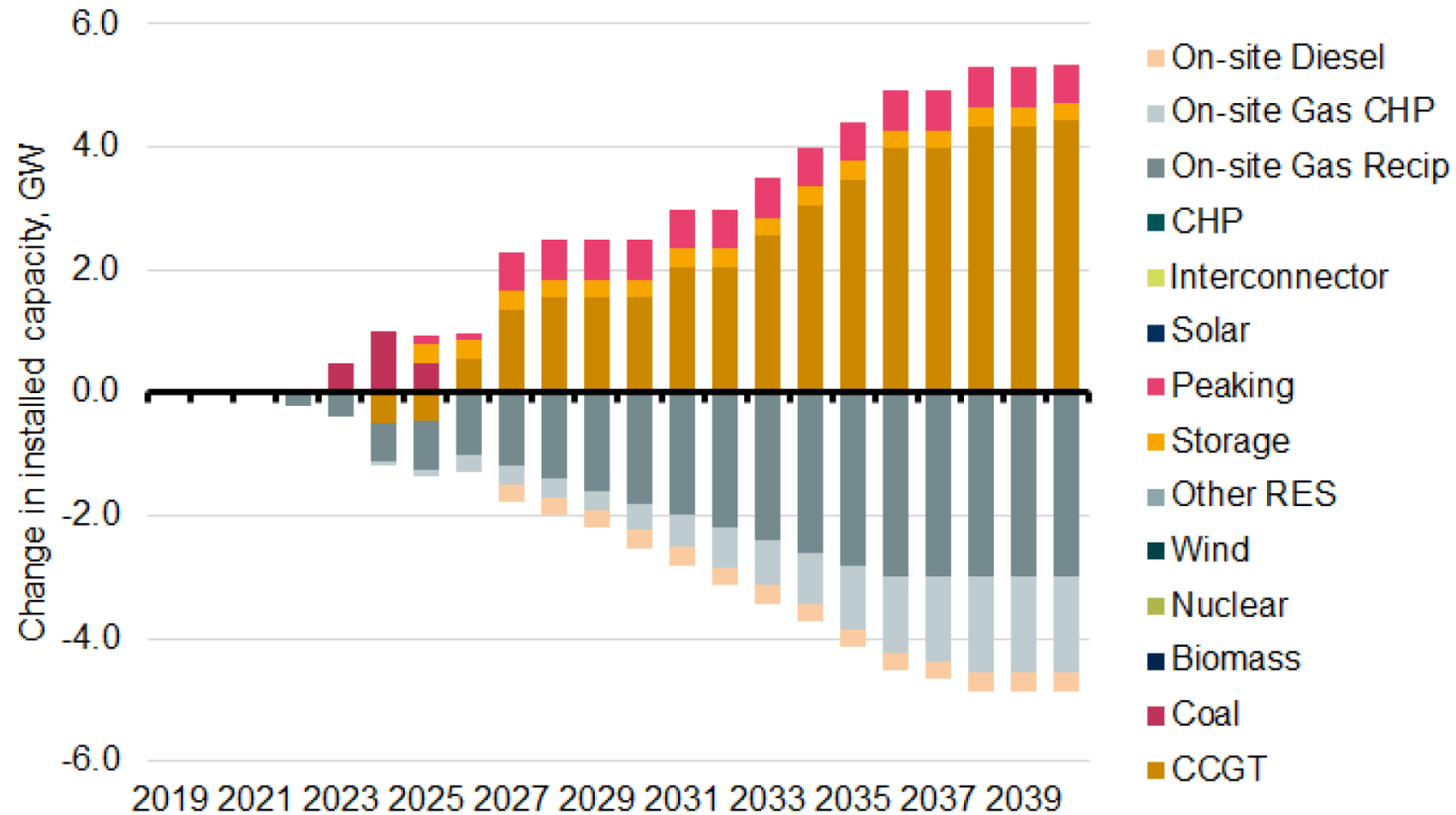
Using the TCR principles to assess the refined options

Option	Reducing Distortions	Fairness	Proportionality and practicality	Distributional impact
1) Fixed charge (set by volume)	Removes existing distortions	Different charges for smaller and larger user groups is equitable	Relatively easy to implement, but boundary issues	Low distributional impact between segments, but some within
2) Agreed capacity charge (deemed for domestics and microbusiness)	Removes existing distortions	Lower transparency and justifiability	Requires deemed capacity values, and management of capacity values	Lower distributional impact within segments
3) Rolling ex ante capacity charges	Removes existing distortions but ex-post is avoidable	Lower transparency and justifiability	Ex-post element requires major system changes	Large redistribution of charges
4) Mostly Fixed charges (75%), with ex-post (25%)	Removes existing distortions but ex-post is avoidable	Complex and non transparent charge	Ex-post element requires major system changes	Modest redistribution of charges
5) Mostly agreed capacity (75%), with Net volumetric (25%)	Removes most distortions, but leaves in place some volumetric charge	Lower transparency and justifiability	Requires deemed capacity values, and management of capacity values	Lower distributional impact within segments

- To narrow down the 5 refined options we conducted a qualitative based assessment, comparing the options to the TCR principles
- We identified 2 leading charges to continue for further analysis and consultation



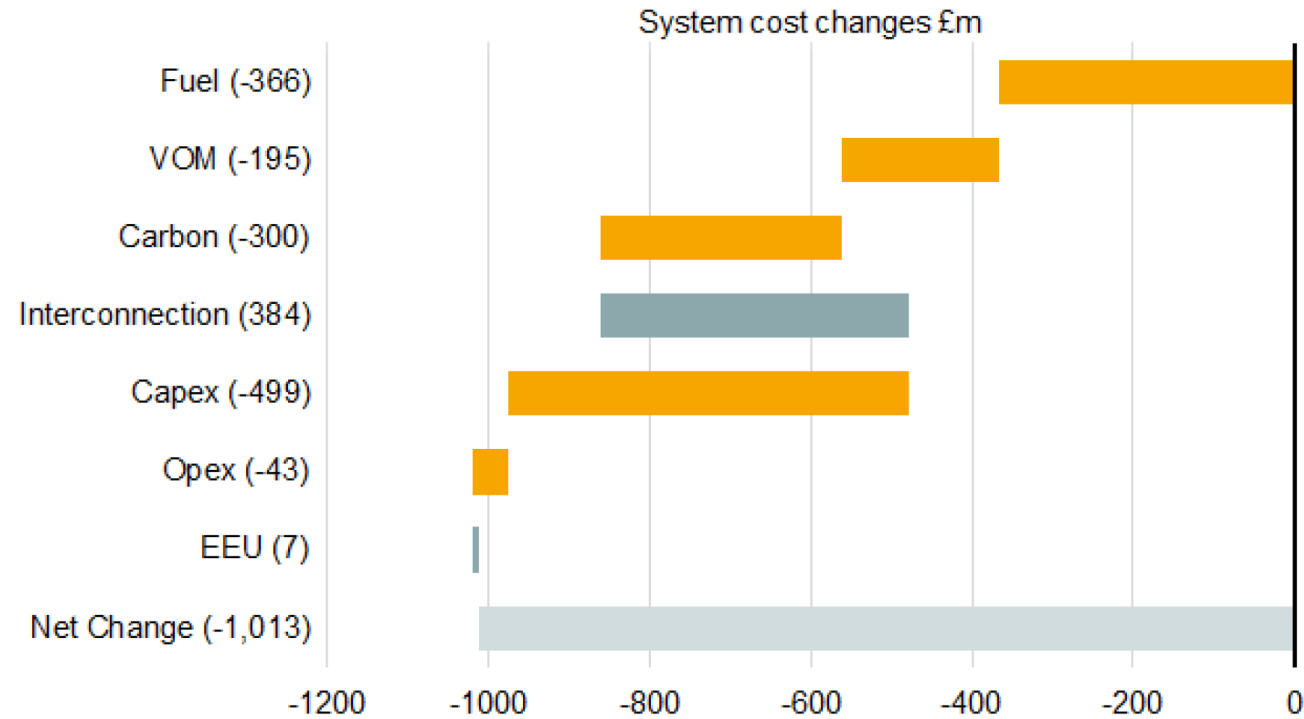
Generation mix



- > Our modelling indicates a reduction in onsite generation (vs the steady progression base case), which is made up by greater amounts of CCGT, peaking and grid-connected storage
- > Similar changes are observed on using the Community Renewables background



System benefits



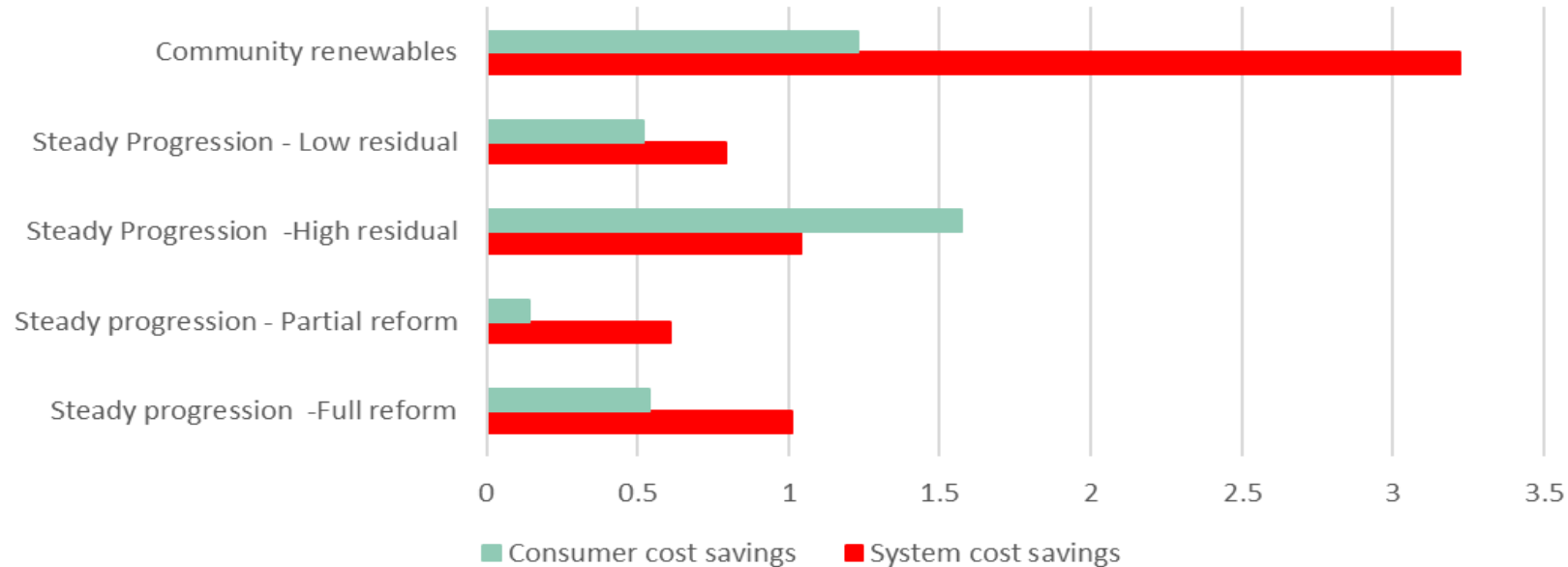
Source: Frontier/LCP

- > Overall our modelling shows that there is a system cost saving due to reduced fuel usage, CO2 emissions, opex and capex spend.
- > The fuel and carbon savings are significant and stem from the change in the technology mix that results from the scenario considered.
- > Under Full Reform CCGT generation and Interconnector imports displace on-site gas reciprocating engines and gas CHP which no longer clear in the CM.



Wider systems modelling shows £bns of potential benefits to 2040

Projected net benefits 2019-2040 (£bn, 3.5%)



- > Our modelling supports our principle-based assessment and indicates a strong long-term case for reform of residual charges
- > Both leading options expected to yield:
 - > System benefits between 2019 to 2040 in the range of £0.8bn to £3.2bn and
 - > Consumer benefits in the range of £0.5bn to £1.6bn.



Ask the experts

Access & Forward Looking Charges

- Jon Parker
- Josh Haskett

Targeted Charging Review

- Andrew Self
- Kayt Button
- Sean Hennity
- Dominic Green

Balancing Services Charges Task Force

- Mike Oxenham



Forum

Coffee break

14:25 – 14:50

To ask questions
Go to: [Sli.do](#) #chargingfutures

Other Embedded Benefits



Two reform options for Embedded Benefits

We have considered two reform options for these Embedded Benefits:

- a) **Transmission Generation Residual (TGR) & partial BSUoS reform:** TGR reform and removing the ability of smaller embedded generators to receive payments from reducing suppliers' contributions to BSUoS charges.
- b) **TGR & full BSUoS reform:** TGR reform, removing the BSUoS payments, and requiring smaller embedded generators to pay BSUoS charges.

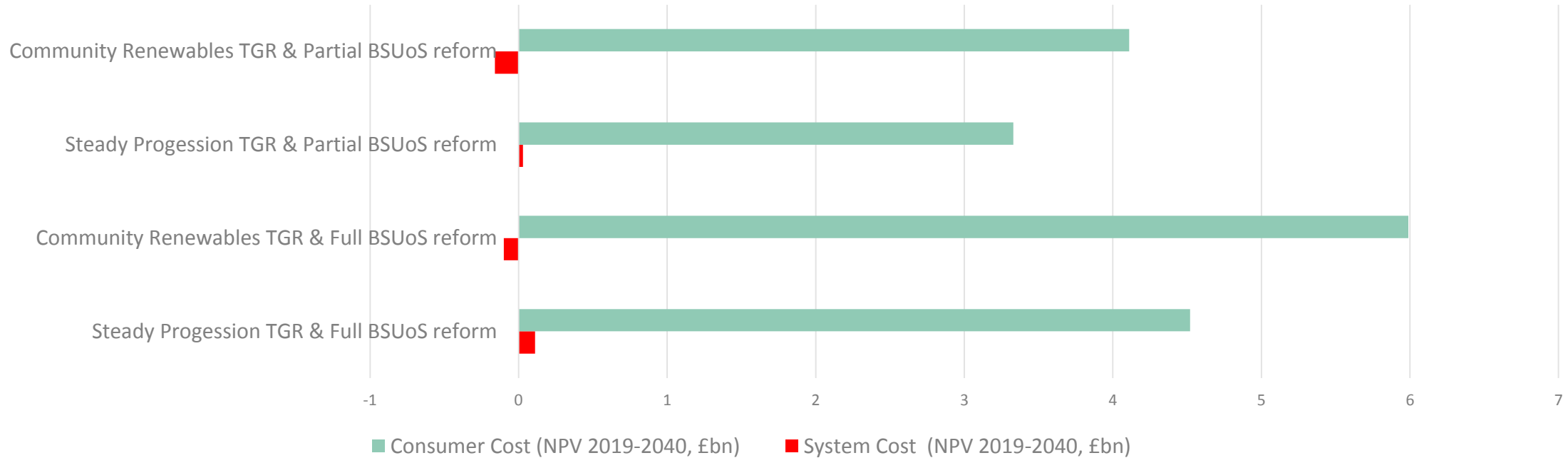
Depending upon the outcome of our consultation, we propose to make the following reforms:

- > Charge suppliers BSUoS using gross demand at GSP (April 2020 or April 2021)
- > Charge BSUoS Charges to Small Embedded Generation (April 2020 or April 2021)
- > Set the Transmission Generation Residual to zero
 - > Subject to maintaining compliance with 838/2010
- > Launched a Statutory Consultation to extend the Small Generator Discount
 - > From the current end date of 31 March 2019 to a revised end date of 31 March 2021



Projected net benefits 2019-2040

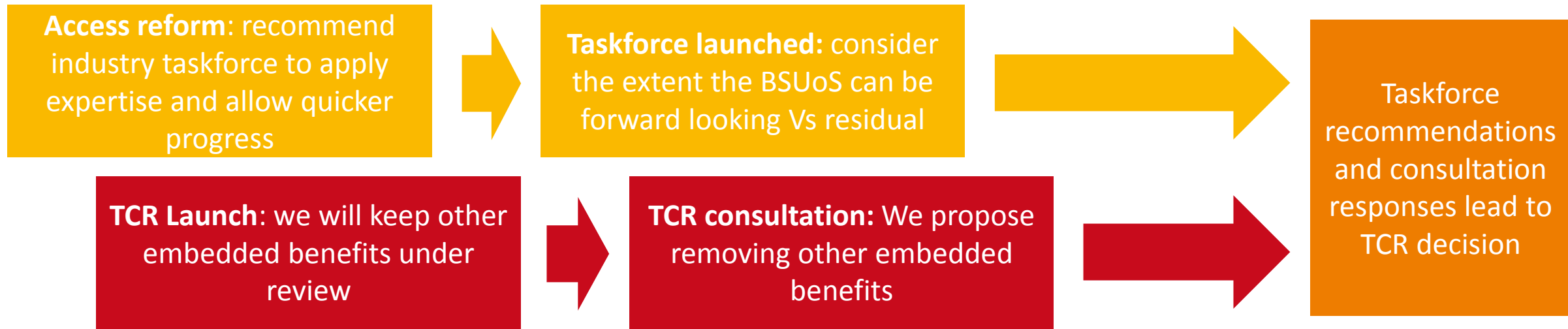
Projected net benefits 2019-2040 (£bn, 3.5%)



- > The wider system analysis indicates that both options are broadly neutral with regards to system costs
- > TGR & Full BSUoS reform leads to a greater consumer benefit, which is consistent with our assessment that it removes more harmful distortions
- > On this basis we currently propose TGR & Full BSUoS reform, but are consulting on both options, and will consider responses alongside the findings of the BSUoS charges task force

➤ Factoring in a taskforce

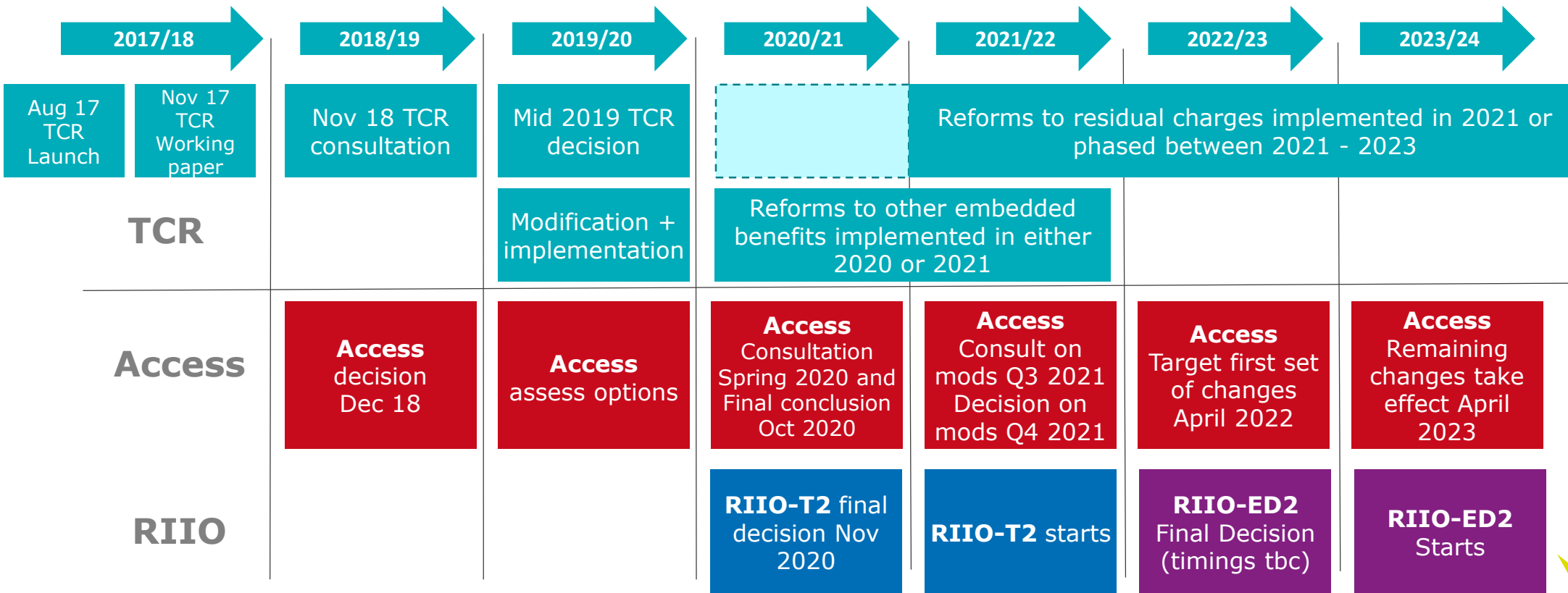
- > Our analysis indicates that whatever the conclusions of the taskforce, reform to key areas of the remaining embedded benefits is required to ensure a level playing field for different types of generator
- > We have requested that the BSUoS taskforce report to us in April, before we take a final decision on the TCR, to ensure we can factor in the findings of the taskforce in our final decision on the TCR.





TCR and interaction with other Ofgem projects

We are reviewing the charging framework holistically; working closely with the Access reform and RIIO project teams to ensure a consistent approach is taken to the different reforms underway across the energy system.





Consultation

- Our consultation period is now open and we invite you to respond to our minded to position consultation by 4 February [here](#).
- If you have any future queries please contact TCR@ofgem.gov.uk.

Q & A Panel

Facilitated by Gareth Davies,
National Grid SO





Q & A members



Andy Burgess, Ofgem



Andrew Self, Ofgem



Facilitator - Gareth Davies

To ask questions
Go to: [Sli.do](#) [#chargingfutures](#)

Next steps and closing remarks

Gareth Davies, National Grid SO

Your feedback

Go to sli.do

#chargingfutures

0 1 2 3 4 5 6 7 8 9 10

 Not likely to Recommend

Extremely likely to Recommend 



Forum

**Thank you, and
have a safe journey
home**

