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Targeted Charging Review
Final Decision

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How does the Targeted Charging Review fit into Ofgem's wider work?

The Targeted Charging Review (TCR) is one of a number of Ofgem initiatives to ensure regulatory and commercial arrangements help to unlock the benefits of the changing energy system as we seek to ensure a system that works for all users.

The TCR complements the ongoing Access and forward looking charges review, RIIO2 price controls, and the Smart Systems and Flexibility Plan. Getting the foundations of charging in place through the TCR ensures that the cost reflective charges are not distorted by the cost recovery charges.

The scope of the TCR included:

- consider reform of residual charging for transmission and distribution, for both generation and demand, to ensure it meets the interests of consumers, both now and in future; and

- keep the other 'embedded benefits' that may be distorting investment or dispatch decisions under review.

We have decided to make changes to the way in which some of the costs of the electricity networks are recovered, so that the 'residual charges' are recovered more fairly now and in the future. We have also decided to remove some remaining distortions called 'non-locational Embedded Benefits' which can increase costs for consumers and affect competition.

Reducing harmful distortions

- Network costs should be recovered in ways that reduce distortions to decisions around efficient access and use of the network
- Reducing harmful distortions helps promote effective competition for consumers by facilitating a level playing field

Fairness

- Avoid undue discrimination among network users due to the recovery of residual charges
- We will give careful consideration to the impacts on vulnerable consumers.
- Fairness to investors or industry participants covered by our aim to be non-discriminatory

Proportionality and practical considerations

- Practical issues are key to assessment of new charging framework, including the availability of the required metering information, implementation cost and simplicity
- We will consider whether transitional arrangements are justified

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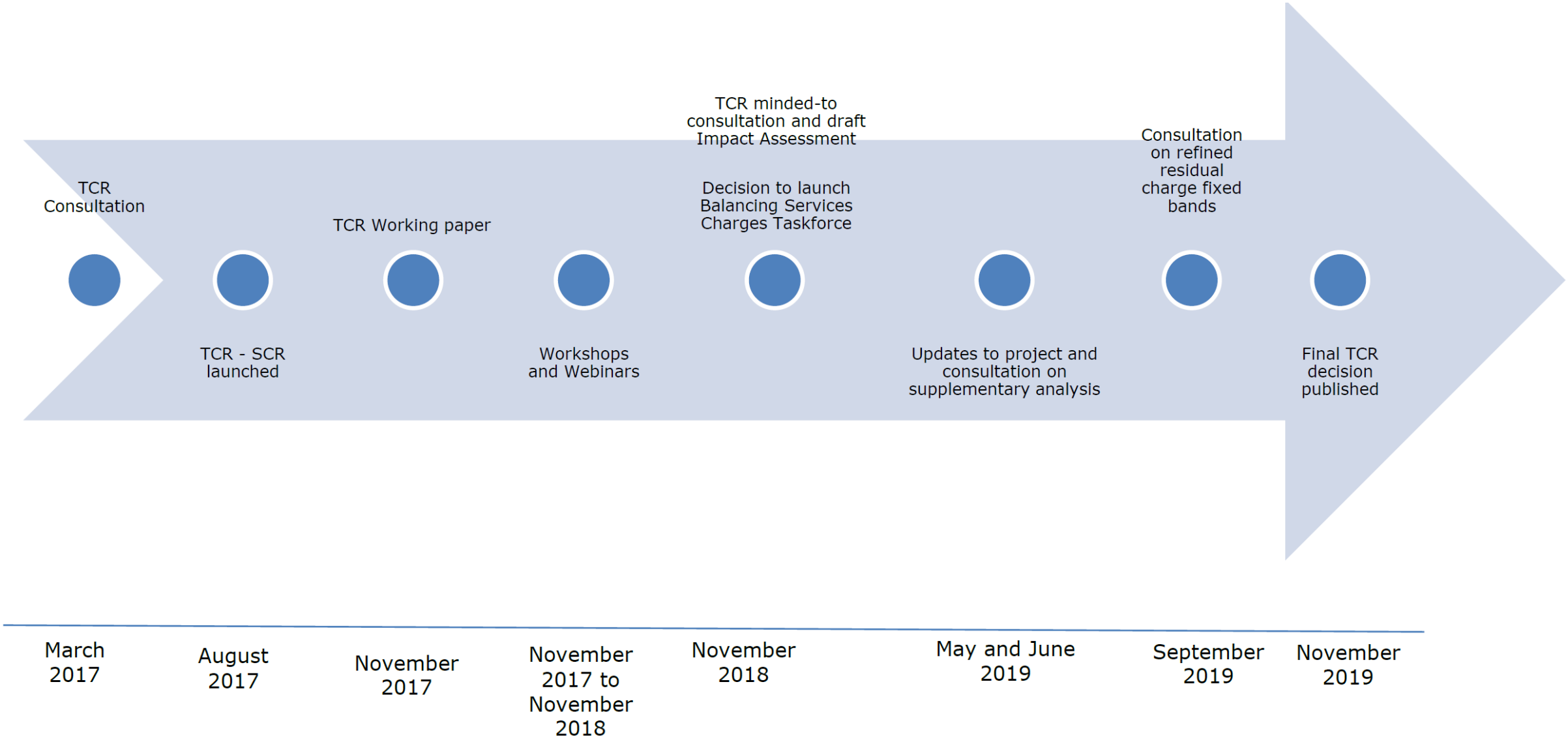
What was the decision making process?



“Defining the problem”

RIIO allowed recovery = Forward looking charges + residual charges

As there will never be full recovery of charges for electricity provision and the networks on which transmission and distribution depend, there has to be a cost recovery component. Therefore, allowed revenue minus forward looking charges determines the value to be recovered. This does not change as users, or their consumption, changes and therefore the fundamental principle is that if you access electricity through the network you should contribute towards its costs.

Under the current system, we believe that:

- As people increasingly take action to reduce their charges, a greater proportion of the residual charges falls on a reducing number of consumers who are less able to take action.

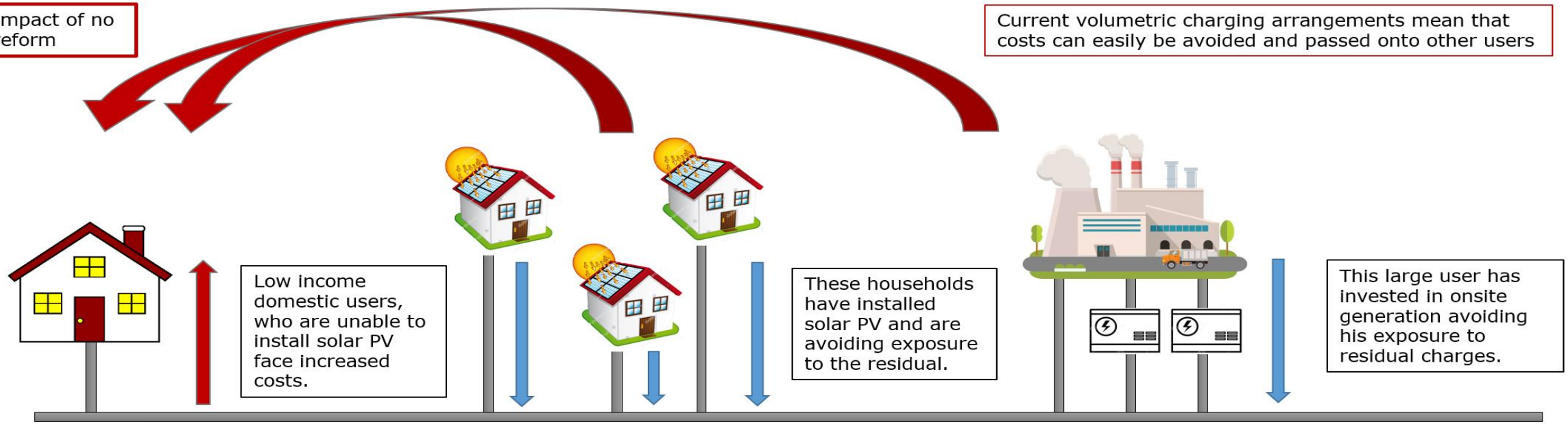
- Availability and affordability of smaller scale generation means that increasing numbers of consumers can reduce their net demand or charges by generating on-site, or alternatively users can reduce their use when they know it is being measured for billing purposes. This does not reduce the total amount of residual charges to be recovered. We do not think this is appropriate as there is no associated reduction in system costs through responding to the signals currently sent through residual charges.

- The current way that residual charges are set creates some incentives that could lead to a more expensive system overall. What we need is a system and a charging structure that will enable charges, as well as targeted interventions, that encourage and reward behaviours which are in the best interests of all network users.

Why reform residual the network charging framework?

Impact of no reform

Current volumetric charging arrangements mean that costs can easily be avoided and passed onto other users



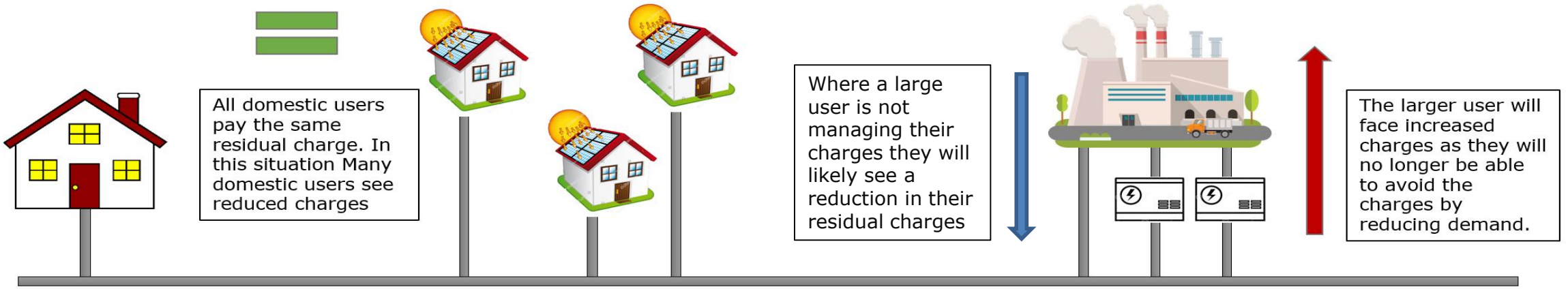
Low income domestic users, who are unable to install solar PV face increased costs.

These households have installed solar PV and are avoiding exposure to the residual.

This large user has invested in onsite generation avoiding his exposure to residual charges.

With TCR reform

Fixing charges removes distortions within the charging framework.



All domestic users pay the same residual charge. In this situation Many domestic users see reduced charges

Where a large user is not managing their charges they will likely see a reduction in their residual charges

The larger user will face increased charges as they will no longer be able to avoid the charges by reducing demand.

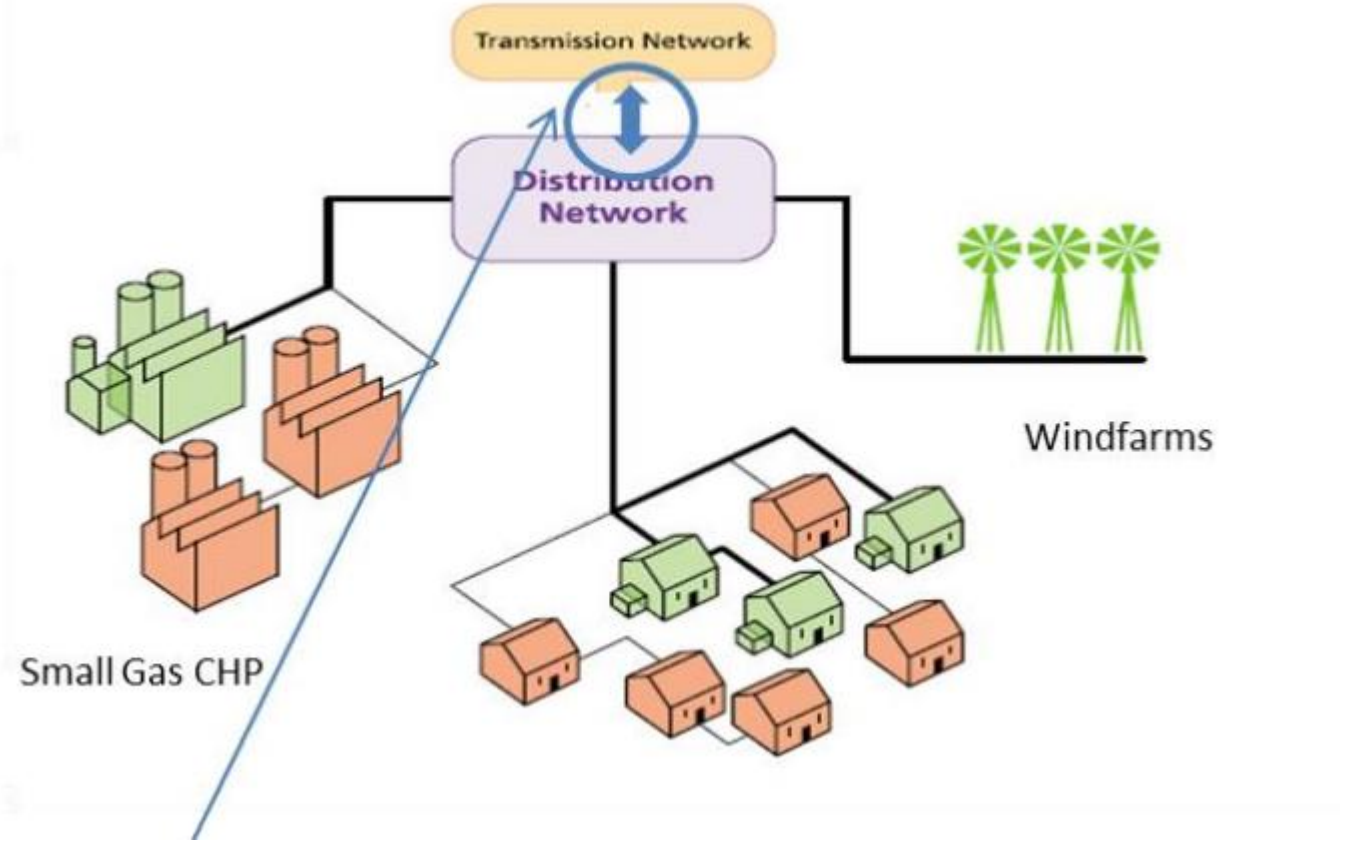
“Reforms to non-locational Embedded Benefits”

- "Embedded Benefits" is the name given to the differences in transmission and balancing services charging arrangements between Smaller Distributed Generators (which are less than 100MW connected to the distribution network) and larger generators (>100MW) connected to either distribution or transmission networks. Some of these benefits extend to micro-generation and on-site generation, particularly when power is exported onto the network.

- Prior to 2017, all Embedded Benefits provided beneficial treatment to Smaller Distributed Generators. However, since the 2017/2018 charging year, one of the charges not faced by Smaller Distributed Generators (the Transmission Generation Residual charge) has become negative. As a result, larger generators now receive a tariff reduction, for which they are credited, rather than paying an additional charge. This means there is now a mix of benefits and disbenefits to Smaller Distributed Generators.

- We have considered this with respect to on-site generation which also has some Embedded Benefits and expect further reforms after the second Balancing Services Charges Taskforce which we will discuss later. As a reminder, The Access and forward looking charges review is considering the 'Locational' Embedded Benefits.

Suppliers are charged transmission charges (TNUoS) and system operation charges (BSUoS) based on their **NET DEMAND –** this leads to Embedded Benefits where Smaller Distributed Generators are paid to reduce net demand and therefore reduce the amount of balancing services charges that suppliers pay.



Net Demand – this is measured here at the Grid Supply Point to charge transmission charges

Embedded Benefit	Description	Estimated Size (2020/21)	Impact on Smaller Distributed Generation	Impact on on-site generation
Transmission Demand Residual	Smaller Distributed Generation can receive payments from suppliers and the ESO. On-site generators can receive the same payments when exporting and save demand users the same charges	This will have been phased out by 2020.	Phased out between 2018 and 2020 (Previous code decision - CMP 264/265).	Phased out for exporting on-site generation by CMP 264/265. Remainder addressed by proposed reform of Transmission and Distribution residual charges in TCR.
Transmission Generation Residual	Smaller Distributed Generation does not pay or receive the generation residual. Neither does on-site generation. Larger generation receives a credit for this charge	£279m per year cost to consumers.	Addressed by TCR decision to set the TGR to zero, subject to compliance with 838/2010, which will be implemented in 2021	Addressed by TCR decision, to set the TGR to zero which will be implemented in 2021.
Balancing services charges: payments from suppliers	By reducing a supplier's net demand, Smaller Distributed Generation receive payments for reducing balancing services charges for suppliers. On-site generators receive the same payments when exporting and save demand users the same charges.	£109m per year additional to consumers.	Addressed by TCR decision, to set balancing services charges on gross imports at the Grid Supply Point, which will be implemented in 2021.	Addressed by TCR decision, to set balancing services charges based on gross imports at the Grid Supply Point, which will be implemented in 2021 for exporting on-site generation. Non-exporting on-site generation will be addressed in future if balancing services charges are levied on a similar basis to Transmission and Distribution residual charges.
Balancing services charges: avoided charges	Smaller Distributed Generation and exporting on-site generation currently does not pay generation balancing services charges	£100 to £150m per year additional cost to consumers.	This distortion will be addressed by the second Balancing Services Charges Taskforce which will consider who should pay and the design of the charge.	This distortion will be addressed by a second Balancing Services Charges Taskforce which will consider who should pay and the design of the charge.

Reform Options: Full vs Partial

Partial Reform (Includes Embedded Benefits 1 and 2)

1. Set the **Transmission Generation Residual to zero** (subject to compliance).
2. Smaller distributed generators **will not be able to offset supplier's liability for balancing services charges** (and get paid for doing so). This leads to the same gross metering of a supplier's customer demand now in place for the Transmission Demand Residual following the 2017 decision on Embedded Benefits (CMP264/5).

Full Reform (Includes Embedded Benfits 1,2 and 3)

1. Set the **Transmission Generation Residual to zero** (subject to compliance).
2. Smaller Distributed Generators **will not be able to offset supplier's liability for balancing services charges** (and get paid for doing so). This leads to the same gross metering of a supplier's customer demand now in place for the Transmission Demand Residual following the 2017 decision on Embedded Benefits (CMP264/5).
3. **Smaller Distributed Generators** would be liable to **pay balancing services charges**

Additional work after the minded-to consultation

- Following consideration of reports by Oxera and Aurora, we thought it would be prudent to undertake an additional sensitivity analysis to test the robustness of projected impacts on consumer and system costs from our proposed reforms to Embedded Benefits

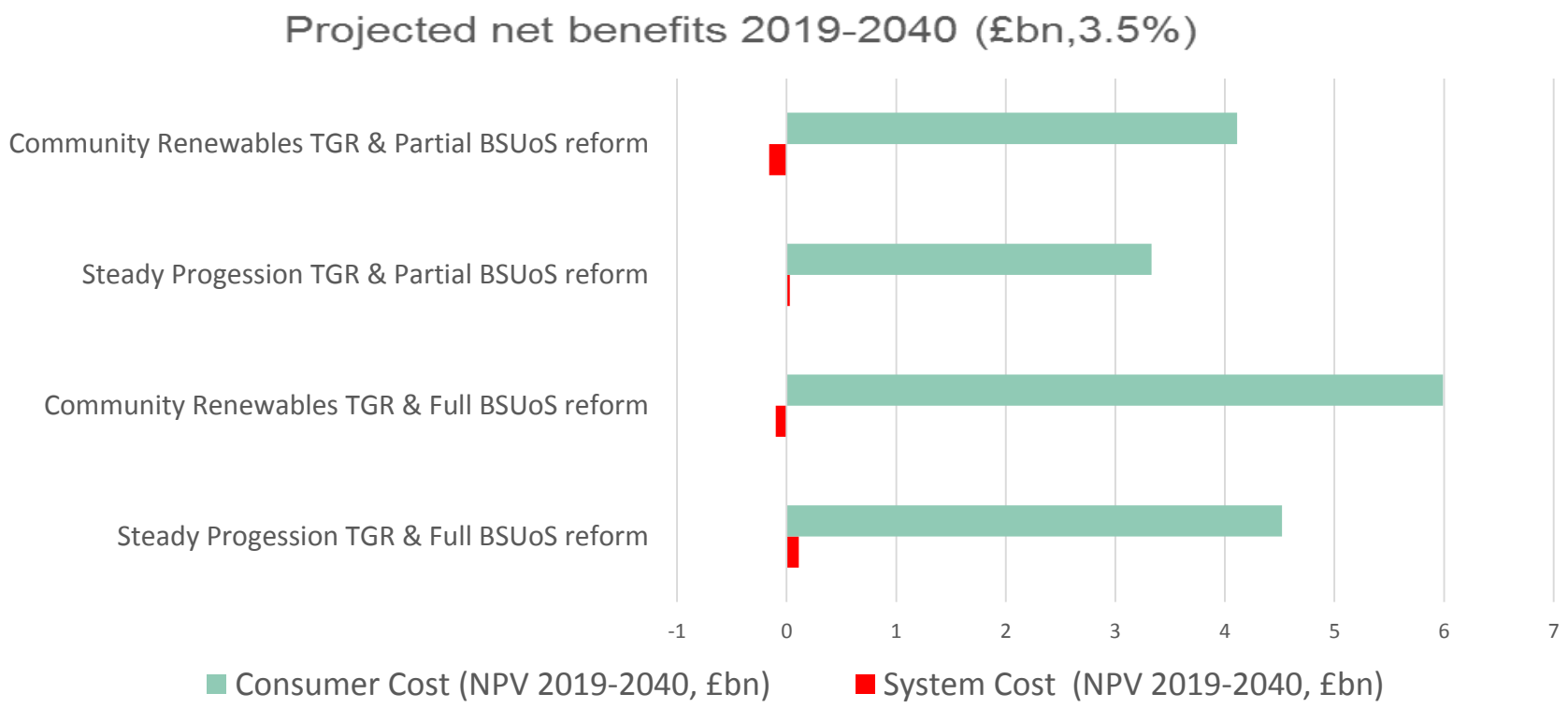
- We published some supplementary analysis in September 2019 – which provided an illustration of the benefits case for consumers **IF** the government policy which was set for the 2019 CfD round continued into future rounds.

- We agree that regulation (to the extent practical) should be predictable. In this regard, we have been clear that our network charging framework should evolve over time as the system changes.

- Reforms can be initiated both through Ofgem reviews and industry open governance.

- Delivering good long-term outcomes for consumers is best achieved by allowing efficient price signals to drive behavioural response so that the system works well, and ensuring residual charges do not create harmful distortions to these signals and are fair.

Projected net benefits 2019-2040



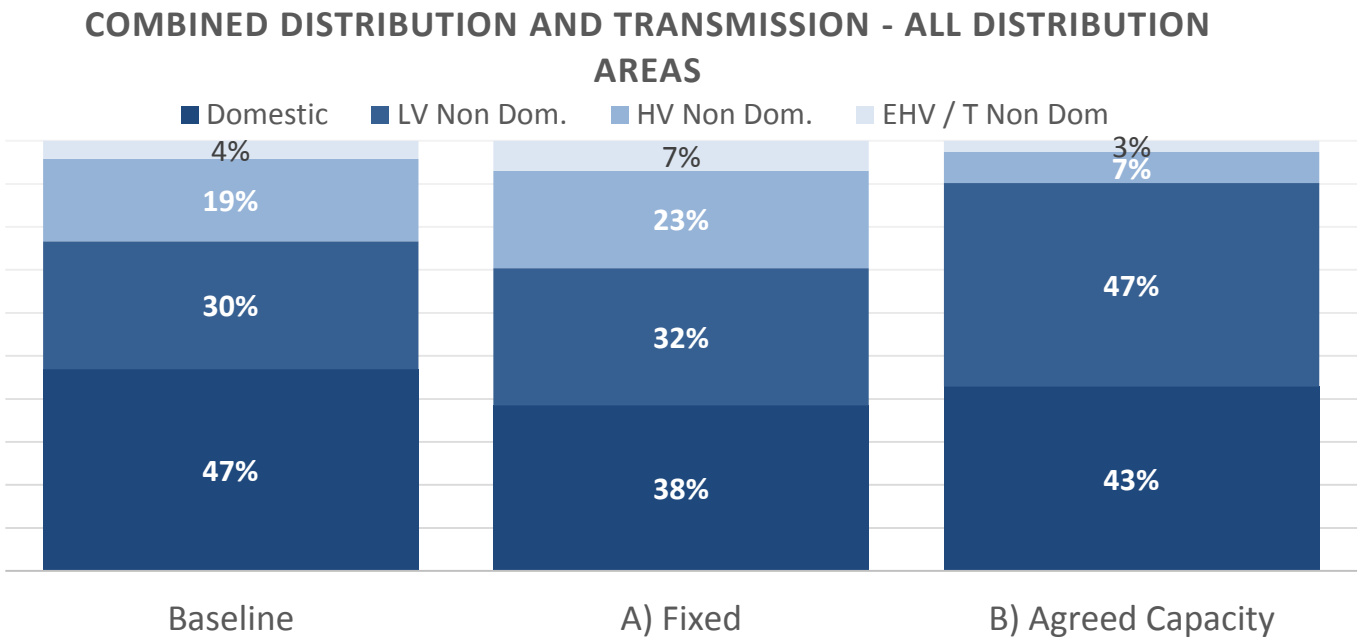
- The wider system analysis indicates that both options are broadly neutral with regards to system costs.
- TGR & Full BSUoS reform leads to a greater consumer benefit, which is consistent with our assessment that it removes more harmful distortions.
- On this basis we proposed TGR & Full BSUoS reform as our leading option in the minded-to consultation
- We considered this alongside the findings of the Balancing Services charges task force.
- Following consultation, we have decided to implement TGR & partial BSUoS reform, with further consideration to be given to balancing services charges, treating them as a cost recovery charge.

“Reforms to residual charges”

Why place residual charges onto final demand consumers only?

Charging base	Advantages	Disadvantages
Generation only	• Generators may not be able to pass through all network charges in the short term if levied on a fixed/capacity basis, so consumers could realise some short term savings	• Could distort generation investment decisions • Could distort generation dispatch decisions • Currently only TG, larger EG and extra high voltage connected generation are exposed to residual charges, levying it on other EG would likely be difficult to implement • Potential to disadvantage grid-connected generation compared with on-site generation if comparable charges are not levied on on-site generation • Creates disadvantage for GB generators compared with interconnected generators who don't pay GB network charges
Final demand only	• Removes potential for distortions of generation investment and dispatch decisions • Addresses the distortion that only some generation currently faces generation residual charges • Consistent with removing intermediate demand charges from storage • Similar to current arrangements, so minimises disruption	

Impacts of leading options (North East, 2019/20)



- **Fixed charges** allocate more to non-domestic segments, **less** to domestic. Domestic charges for lowest consumers of electricity increase by around £20, and fall for other categories. Users currently managing their residual exposure currently will see increases. All users within a user class will pay same charge.

- **Agreed Capacity** charging allocates **less TNUoS** and slightly **more CDCM to domestic,** driven by assumption of domestic capacity. This moderately **increases charges for LV users. HV, EHV and T contributions all fall.** Domestic charges for the lowest consumers increase by around £20, and fall for other domestic groups. Users currently managing their residual exposure currently will see increases. Larger users pay higher charges.

Our two lead options were **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

Open letter – summary of refined approaches			
Option	**Residual charge allocation**	**Segmentation approach**	**Charge calculation**
Refined banded fixed charge	Applicable residual charges for each licensed area are allocated to the different voltage levels, according to the total net consumption volumes of all consumers at each voltage level.	Consumers connected at each voltage level are segmented further into bands based on the distribution of consumers in the population at each voltage level. The residual charges for each voltage level are allocated to customer bands according to the total net consumption volumes for all consumers in each band.	The allocated proportion of the residual charges for each consumer band is divided equally among all consumers in that band - all consumers in a band pay the same fixed charge (within each licensed area).
Hybrid fixed-agreed capacity charge (combining an agreed capacity charge for large users and a fixed charge for small users)	Applicable residual charges for each licensed area are allocated to the different voltage levels, according to the total net consumption volumes of all consumers at each voltage level.	For large users - N/A - a linear capacity charge is calculated, so no further allocation to bands required. Small users are further segmented into bands.	The allocated proportion of residual charges for consumers with agreed capacity charges is divided equally on the basis of units of capacity at that voltage level - all consumers pay the same per unit capacity charge in each voltage level (within each licensed area). Residual charges for each consumer band are divided equally among all consumers in that band - all consumers in a band pay the same fixed charge (within each licensed area).

- Stakeholders had a range of views on the appropriate balance of our principles and what constitutes a fair outcome.

- While a number of respondents did suggest alternative options or adjustments there was not a clear consensus in support of a single approach.

- We have considered how our minded-to proposals and the proposed fixed banded approach could be adapted, or potentially combined, to perform better against our principles, and identified simplifications to our proposed approach, drawing on the suggestions made by respondents.

Summary of our Assessment for the final decision:

- We continue to be of the view that residual charges should be allocated between users at different voltage levels and to different segments for those connected to distribution networks based on net volumes.
- We think this tangible basis in energy usage provides a strong justification, consistent with our principles and has relatively lower distributional effects overall compared with other options we assessed during the process.
- We note the lack of alternative datasets which exist for all customers.
- We recognise some larger users would face a somewhat greater share of residual charges than today.
- Further segmentation of users is needed to increase the equity of charges for those connected to the distribution network. Under our minded-to proposal, a large range of users of different sizes in a single LLFC would face the same fixed charge, which we do not consider performs well under our fairness principle.

Implement a fixed residual charge for final demand consumers only, with distinct arrangements for unmetered sites.

Domestic consumers:

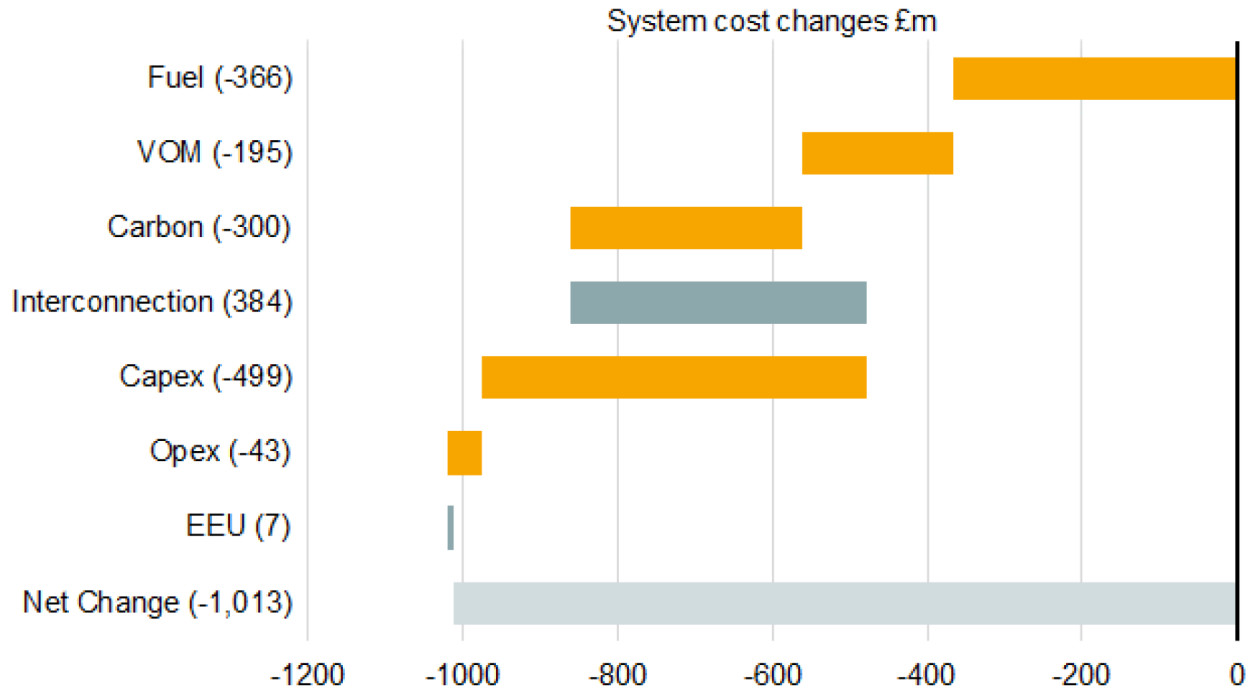
- a single transmission residual charge, and
- a single distribution residual charge within each of the 14 distribution licensed areas. So all domestic customers within each of 14 distribution areas will pay the same level of residual charge.
- **Vulnerable consumers** have been taken into consideration throughout the process. We carried out multiple vulnerability assessments and concluded that trade-offs would occur with any solution.

Non-domestic consumers:

- a single set of transmission residual charges, and
- a set of distribution residual charges for each of the 14 distribution licensed areas for each fixed charging band.
- Bands will be defined by a consumer's voltage level and, where further segmentation is required, further boundaries will be defined depending on data availability:
  - For larger consumers for whom data is readily available, further boundaries based on agreed capacity, and
  - for smaller consumers for whom this data does not routinely exist, further boundaries based on net consumption volume

Charges for **unmetered customers** will be derived considering their net consumption volume or agreed capacity, on the basis of their 'profiled' demand and the applicable charging model.

System benefits



Source: Frontier/LCP

- Overall our modelling shows that there is a **system cost saving** due to reduced fuel usage, CO_2 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 of residual charges CCGT generation and Interconnector imports displace on-site gas reciprocating engines and gas CHP which no longer clear in the CM.

“Overall Benefits”

Residual Charging Reforms - Monetised Impacts (£m)

Net Benefits to GB Consumers: £0.5bn to £1.6bn

System Benefits: £0.8bn to £3.2bn

Reform to Embedded Benefits - Monetised Impacts (£m)

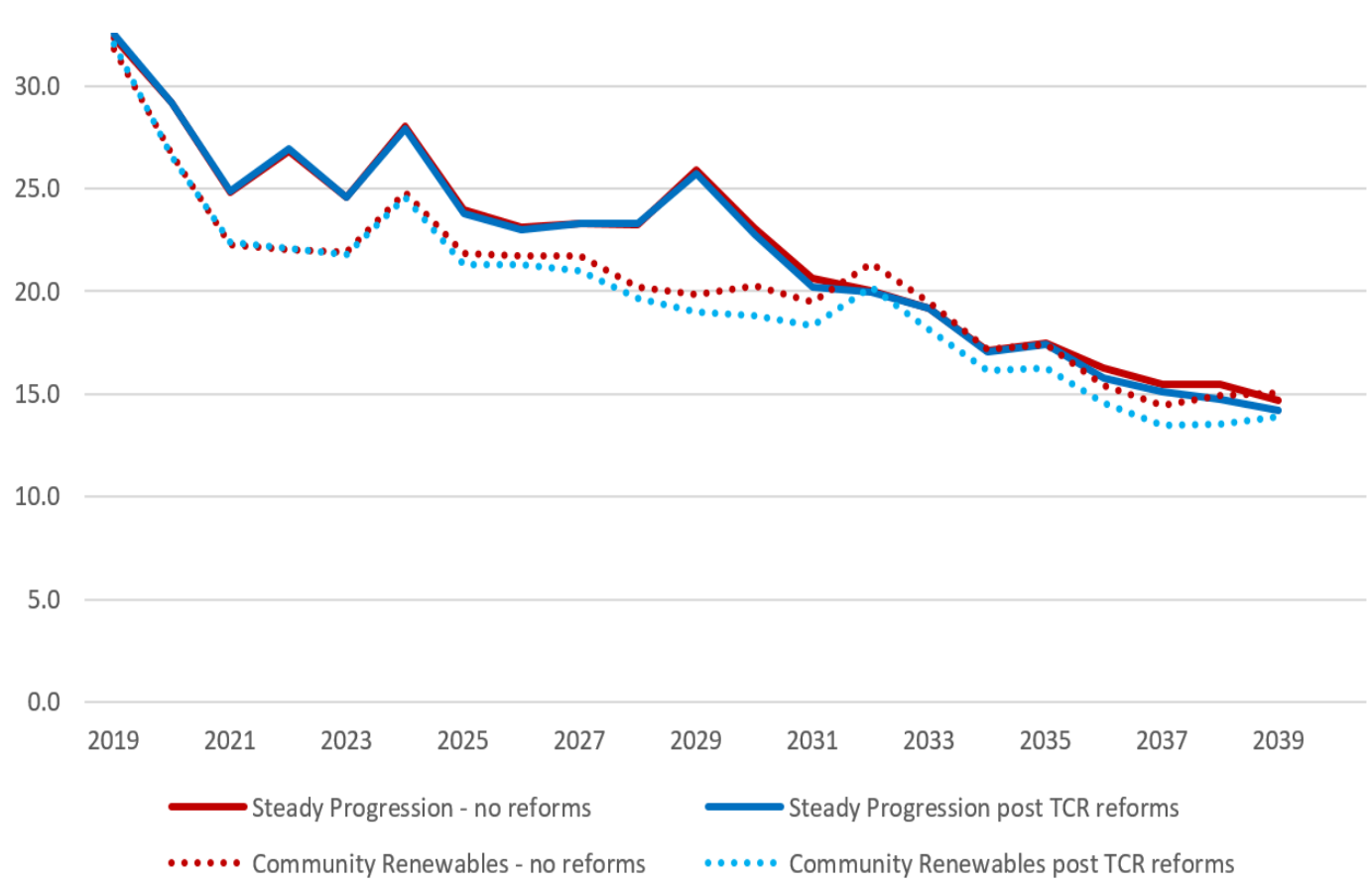
Net Benefit to GB Consumer: £3.3bn to £4.1bn

System Benefits: -£0.3bn to no change

Complete Reform Package - Overall Monetised Impacts (£m)

Net Benefit to GB Consumer: £3.8bn to £5.3bn

System Benefits: £0.8bn to £2.9bn



Projected CO2 emissions in millions of tonnes, with alternative FES scenario

We carried out a quantitative and qualitative assessment of the different implementation options, focusing on our principles of reducing harmful distortions, fairness and proportionality and practical considerations, including potential impacts for consumers and market participants.

Residual charges reforms will be implemented in 2021 for transmission charges, and in 2022 for distribution charges, and reforms to the remaining non-locational Embedded Benefits will be implemented in 2021.

Estimated costs of delaying reforms.

Implementation Options for Residuals	Change in consumer cost (from 2021)
2021	0
Phased between 2021 to 2023	+£60m
2021 for Transmission and 2022 for Distribution	+£25m
2022	+£75m
2023	+£140m

Implementation Options for Embedded Benefits	Change in consumer cost (from 2020)
2021	+£500m
Phased between 2021 to 2023	+£1bn
2023	+£1.5bn

“Next Steps”

We set out a CUSC and DCUSA Direction alongside the decision document. There is considerable cross over of the two code modification for the residual charges reform including but not limited to:

- a definition and methodology to determine 'final demand' as directed
- a definition and methodology to determine a 'single site' as directed
- a methodology to apply the banding to final demand consumers as directed
- a process for new consumers as directed
- a process for change in use/ownership as directed
- a process for Unmetered Supply users as directed
- a methodology for NHH consumers as directed
- a capacity redundancy methodology as directed
- a dispute resolution process as directed
- a review process for charging bands as directed
- a process to consider exceptions where ownership or use of a site changes within the price control period as directed consideration of IDNO's, private wire and complex sites as directed, and
- a methodology for T-connected sites *if* more than 1 band is considered necessary or consider if an exceptions process might be more appropriate as directed.

For Embedded Benefits the main modifications are for the CUSC only, but there will be significant opportunity for industry to get involved in the second Balancing Services Charges Taskforce.

- Directions – These were published alongside the decision and are being addressed by licensees

- Detailed Plan – We have asked for the DNO's, NGESO, other licences and stakeholders to provide a detailed plan on how they are going to work together to implement these changes. We understand this is underway and making good progress

- Modifications – We have begun to receive modification proposals. We are awaiting for the detailed plan before we take detailed decisions regarding any modifications

- A further taskforce - We asked the ESO to launch a second Balancing Services Charges Taskforce which we expect to provide conclusions regarding necessary changes to balancing services charges and implementation timing which are in the best interests of all market participants.

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Our core purpose is to ensure that all consumers can get good value and service from the energy market.
In support of this we favour market solutions where practical, incentive regulation for monopolies and an approach that seeks to enable innovation and beneficial change whilst protecting consumers.

We will ensure that Ofgem will operate as an efficient organisation, driven by skilled and empowered staff, that will act quickly, predictably and effectively in the consumer interest, based on independent and transparent insight into consumers' experiences and the operation of energy systems and markets.