Impact assessment

Consumer Consent Solution Final Impact Assessment

Division: Energy System Design & Development	
Team: Energy System Digitalisation	
Associated documents:	Consumer Consent Solution Consultation | Ofgem Consumer Consent decision | Ofgem
Coverage: Full coverage	
Type of measure: Retail Competition measures	
Type of IA: Not Qualified under Section 5A UA 2000	
Enquiries:	Digitalisation@ofgem.gov.uk

Contents

Summary: Intervention and Options

What is the problem under consideration? Why is Ofgem intervention necessary?

The energy sector currently lacks a single, standardised process for obtaining and managing consumer consent to share energy data. This fragmentation leads to inconsistent practices, consumer confusion, and "consent fatigue," undermining trust and limiting access to valuable datasets like smart meter data. Unlocking this data is essential for innovation and achieving a flexible, net zero energy system.

Ofgem's proposals for a digital solution will give consumers control over their data, with clear, real-time tools to grant, manage, and revoke consent. Consumer trust in the energy sector is paramount, and a robust solution for obtaining informed consent is key to achieving this. Industry intervention is needed to develop a digital consent solution that will be effective for consumers and efficiently adopted by industry.

Ofgem partnered with what is now the Department for Energy Security and Net Zero (DESNZ) and Innovate UK (IUK) to commission the Energy Digitalisation Taskforce report which made a series of recommendations based on the vision laid out in the Energy Digitalisation Strategy.[1] From this report, the partnership committed to exploring consumer consent as a priority to propel the changes needed to achieve digitalisation across the energy sector.

Ofgem has selected RECCo as the delivery body to design, develop and deploy the Consumer Consent Solution. This will focus on the user journey while remaining flexible enough to fit with current and future systems in both the energy sector and, in future, cross-sector developments.

What are the policy objectives and intended effects including the effect on Ofgem's Strategic Outcomes?

The primary objective of the Consumer Consent Solution is to empower individuals by providing a secure, digital solution for sharing their energy data with trusted market participants. This will enhance consumer trust in data-sharing services, improve access to personal data across the energy sector, and enable greater participation in a digitalised energy system, aligning with a key priority area in Ofgem's 2025 Multi Year Strategy: shaping a retail market that works for consumers.[2]

Establishing clear, system-wide consent processes, the solution will give consumers greater control over their data and reduce barriers to engagement, further aligning with another key priority area establishing an efficient, fair and flexible energy system

[1] Energy Digitalisation Taskforce | Energy Systems Catapult
[2] Ofgem's multi year strategy

specifically referenced in Objective 14: making a more digitalised energy system work for consumers and again in 14.1: setting governance and standards to digitalise system data and improve data sharing.

Ofgem's Forward Work Plan 2024 identifies digitalisation and data sharing as key priorities, including the introduction of a consent mechanism.[3] Without a fast, trusted, and standardised approach to consent, progress on system digitalisation and data, access will be significantly delayed.

Furthermore, the development of a digital consent solution is a critical enabler for accelerating the transition to Clean Power 2030 (CP2030) and beyond.[4] The government's CP2030 ambition includes achieving 10–12 GW of capacity through consumer-led flexibility. A trusted, standardised, and consistent mechanism for consumers to share their energy data is a foundational requirement for this goal and a core component of future Smart Data Schemes.[5]

In November 2023 we published our Call For Input (CFI) here we presented three options to industry stakeholders on solution design as well as a 'do-nothing' or 'business-as-usual' approach.[6]

- **Option 1:** A single technical solution such as a Consumer Consent solution or dashboard.
- **Option 2:** A set of principles and guidelines outlining a consistent way for trusted market participants to obtain consent, similar to Data Best Practice Guidance.
- **Option 3:** A voluntary industry-developed code outlining a consistent way for trusted market participants to obtain consent, akin to the Confidence Code.
- **Option 4:** Business-as-usual; do nothing and allow consent processes to continue without intervention.

Following consultation, **Option One—a single technical solution—emerged as the preferred approach**, with 74% of respondents identifying it as the most favourable.

Justification for preferred option (Option One, a single technical solution)

During a two-year policy cycle across workshops, CFIs, Consultation, working groups, and other engagement, the overwhelming view from industry was that there was an

[3] Forward Work Programme 2024/25
[4] Clean Power 2030 Action Plan: A new era of clean electricity – main report - GOV.UK
[5] Potential new smart data scheme to drive innovation and support consumers in the energy market - GOV.UK
[6] Data Sharing in a Digital Future | Ofgem

issue with siloed and high friction consumer consent that justified intervention in order to realise the nascent flexibility market at the scale required. Further to this, the view was that a technical solution was the best path. During further consultations, this approach was refined to a technical solution with some centralised requirements and significant portions of the solution decentralised.

The consultation showed industry support for RECCo as the preferred delivery body of the three options, and there was strong support for a more combined approach, bringing in expertise from outside of the energy sector for a multi-disciplinary approach to both the consumer-focused and socio-technical aspects of the solution.

The Net Benefit of the preferred option was monetised based on:

- Indicative costs of the design, development, and deployment of the solution
- Indicative cost to industry of aligning with the technical requirements of the solution.
- The expected direct benefits to customers from using the solution in terms of bill reductions.
- The expected indirect benefits of the solution through the enabling and facilitation of other decentralisation and flexibility initiatives.

The timeline of the analysis was from 2025 to 2033, with a monetised base year of 2025.

Preferred option - Monetised Impacts (£m)

The table below displays the overall benefits and costs calculated for each of the three sensitivities tested in this IA as well as the Benefit-Cost Ratio (BCR) for each. The estimated annual costs and savings/benefits were calculated in real terms for each year, then the NPV was calculated based on the annual net benefit for each year from 2025 to 2033 to account for inflation. Further detail on the calculation process can be found in the Methodology (paragraphs 2.4 – 2.8) and in the Cost-Benefit Analysis itself (chapter 3).

Summary of options	Benefits	Costs	BCR	Key considerations
Average or expected scenario	£345.92m	£86.48m	4.00	Utilises the midpoint of the calculated cost ranges and the lower end of the benefits range to avoid optimism bias

Worst case scenario	£100.49m	£101.27m	0.99	Utilises the highest cost assumptions and assumes that only 20% of benefits occur.
Best case scenario	£564.38m	£78.69m	7.87	Utilises the lower bound of the calculated cost ranges and the lower end of the benefits range to avoid optimism bias

Preferred option – Hard-to-Monetise Impacts

Outside of the impacts where a monetary value has been calculated, this policy proposal is expected to increase consumers' sense of control over their data and empower them accordingly. It is also expected to increase the understanding and take up of flexibility services through the value exchange of data. Furthermore, consent is a significant control point for consumers to share their data and device control, which research has shown a motivator to engage in consumer-led flexibility. Finally, these benefits are expected to proportionately benefit those who have not yet engaged with these services or the energy market at large, creating a progressive benefit. These benefits are challenging to ascribe a value to and difficult to measure, however we expect to see increased uptake in engagement and measurable changes in consumer attitudes through satisfaction surveys. Further detail on the Hard-to-monetise impacts can be found in Chapter 4.

Key Assumptions/sensitivities/risks

The analysis has been performed to three sensitivities, reflecting a 'best case', 'worst case', and 'average' scenario. The average scenario broadly utilises the mid ranges of the costs and benefits calculated in this IA and reflects what we deem to be the most likely outcome of the CC Solution. The best-case scenario reflects low costs and a full but conservative realisation of the benefits, whereas the worst-case scenario assumes the highest estimation of costs as well as assuming that related initiatives which would support the benefits of the CC Solution fail to be delivered, leading to only 20% of the most conservative estimation of benefits to be realised. These scenarios allow for the avoidance of optimism bias while also reflecting a wide range of outcomes to the delivery of the CC Solution.

The direct costs and benefits are based on bottom-up calculations. The direct costs are based on RECCo's own estimates, although the granularity has been redacted to protect the procurement process. The direct benefits are calculated to four further sensitivities, based on assumptions regarding the uptake and savings potential likely for different consumer archetypes. Indirect costs and benefits have been calculated in relation to prior similar projects which have already been costed in their own IAs. Market-wide Half Hourly Settlement and Open Banking are used to estimate the

indirect costs, and Flexibility Markets and the Smart Meter Rollout are used to estimate the indirect benefits.

The main risk facing this IA is uncertainty, which we have sought to mitigate through the three main scenarios being modelled, as well as the four sub-scenarios calculated in the direct benefits case. This granularity allows us to ensure that the broadest range of outcomes are covered by our analysis.

The policy will be reviewed, with a scheduled review date set for July 2028.

This proposal is not considered to be within the scope of the Public Sector Equality Duty as discussed in previous CFI, Consultation, and Decision.

1. Introduction

Section summary

The proposed Consumer Consent Solution will enable consumers to confidently grant, manage, and revoke (outside of contractual terms for supply) consent to share their energy data with third parties in a robust, consistent, and trusted way. This will support the transition to net zero at the lowest cost to consumers through improving control of, and access to, valuable smart meter data. This section establishes the problem being addressed by the Solution, the policy objective and context, the details of the consultation so far, and the changes that have been made to this final IA compared to the previously published draft version.

Problem Under Consideration

1.1 Several projects and analyses of the energy sector have identified the lack of a single, standardised process for obtaining and managing consumer consent as a major blocker for access to smart meter data.[7,8,9,10] As a consequence of this lack, issues identified are:

- Reduced visibility of demand on the network which hampers planning and effective balancing of markets.
- This reduced visibility further hampers forecasting, necessitating more assumptions; in turn reducing accuracy, and requiring greater redundancy in increased generation cost.
- Fewer positive consumer outcomes through tailored offerings from industry, and less consumer value available through use of data.
- Challenges in the customer journey through increased complexity, friction, and repetition, leading to lower consumer engagement.

1.2 Several attempts have been made previously to address this issue, following from the recommendations from Citizens Advice and the EDiT report.[11,12,13] They were not successful due to a number of factors, including a focus on centralisation in approach, and the exogenous circumstances of COVID-19 pandemic and war in Ukraine precipitating gas supply issues.

[7] The Smart Meter Data Dashboard - Citizens Advice
[8] Delivering a Digitalised Energy System - Energy Systems Catapult
[9] Consumer-Consent-Final.pdf
[10] Building consumer trust in Smart Data
[11] Update on the midata in energy programme | Ofgem
[12] The Smart Meter Data Dashboard - Citizens Advice
[13] Delivering a Digitalised Energy System - Energy Systems Catapult

1.3 The requirement to reach clean power by 2030 (CP2030) is planned to rely on 10-12GW of consumer led-flexibility in the energy system. There is a clear need for a reliable and scalable consumer consent mechanism and scalable access to smart meter data to support the requisite growth in consumer-led flexibility as highlighted in the Clean Flexibility Roadmap.[14]

Policy Objective

1.4 As we progress towards net zero, the energy system becomes more interconnected, complex, and the pace of change will increase. Current system thinking is developing to address the 'trilemma' of security of supply, decarbonisation, and fair prices. The changes to the system are the greatest in a generation, and the key duty Ofgem must consider is to consumers, both present and future.

1.5 Smart Meter consumption data is considered personal data by the Information Commissioner's Office (ICO) and there are considerable insights that can be garnered from this data into an individual's lifestyle and choices.[15] It is currently legally required that this data be restricted without the express and informed consent of the individual who owns that data, the consumer, except in limited and tightly controlled aspects of the 'public good' basis of accessing that data.

1.6 The Consumer Consent Solution policy focuses on empowering individuals through the provision of a secure and trusted digital solution for consenting to share their energy data with market participants who can offer a value proposition in exchange. The market for products based on the sharing energy data, specifically smart meter data, has been hampered by a lack of consistent process for recording and sharing consent.

1.7 With regards to the overarching policy objectives this work supports, the Consumer Consent Solution is a key area for Ofgem's Multi Year Strategy (MYS) Objective 14: Making a more digitalised energy system work for consumers.[16] It is also referenced in our Strategic Direction Statement (SDS) and Forward Work Plan (FWP), as well as being a foundational requirement for future Smart Data Schemes, which also supports Ofgem's consumer duty. [17,18]

[14] Clean Flexibility Roadmap
[15] What is valid consent? | ICO
[16] Ofgem's multi year strategy
[17] Preliminary Strategic Direction Statement for industry codes
[18] Forward Work Programme 2025/26

Consultation So Far

The Delivery Body

1.8 In August 2024, we consulted on our preferred policy option, to appoint RECCo as the delivery body to design and deliver a digital Consumer Consent platform which would standardise and streamline the granting, managing, and revocation of consent to share energy data for consumers. In April 2025, we confirmed our minded-to position, that RECCo would be the delivery body for this work. We felt the case for intervention was made through the EDiT report, multiple workshops, the Call For Input (CFI) and Consultation and that RECCo was the best placed entity to deliver this work.

1.9 There was strong stakeholder acknowledgement of the issues that a lack of consistent consumer consent caused, as detailed in the CFI and Consultation, and strong support for a new platform for consumer consent and for RECCo as the delivery body. This was viewed by respondents as the most effective proposal at the lowest proposed cost. However, there were consistent views expressed that an analysis of the costs and benefits for both this policy and the appointment of RECCo as Delivery Body be conducted.

1.10 Based on our own assessment and the feedback from respondents, who supported RECCo as the most appropriate of the three potential Delivery Bodies; SmartDCC, Electralink, and RECCo; we have selected RECCo to be the Delivery Body for the Consumer Consent Solution. We have always held that the complicated and multi-disciplinary nature of Consumer Consent as an issue means that no single organisation would have the in-house experience and expertise to effectively address the technical, user experience, accessibility, design, data modelling and development, legal, and governance challenges which the CC Solution will face, which necessitated the setting up of working groups.

The Options Considered

1.11 The initial Call for Input considered three options, as well as a prevailing counter factual of non-intervention.

1.12 **Option 1** A single technical solution such as a Consumer Consent solution or dashboard.

Option 2 A set of principles and guidelines outlining a consistent way for trusted market participants to obtain consent, similar to Data Best Practice Guidance.

Option 3 A voluntary industry-developed code outlining a consistent way for trusted market participants to obtain consent, akin to the Confidence Code.

Option 4 Business-as-usual; do nothing and allow consent processes to continue without intervention.

1.13 Option 1 was selected from the responses to the CFI as the preferred option. These responses reflected and reinforced Ofgem's existing policy position (reached through the previously stated policy analyses) that Options 2 and 3 would not have the desired level of impact in the policy space. Similarly, Option 4, the do-nothing or non-intervention approach has been considered throughout this policy process and is the counterfactual for this analysis.

1.14 Our reasoning for retaining the non-intervention (counterfactual) approach for comparison while placing the alternative policy options considered in the CFI and the alternative delivery bodies from the Consultation is that these alternative options were dismissed as not fulfilling the stated policy aims at the CFI stage and would not achieve the intent of this policy. The alternative delivery bodies were considered to be capable of delivering a solution which would fulfil the policy intent; however this would necessitate restarting the policy cycle, which is outside of the scope of what is being considered.

The Draft Impact Assessment

1.15 We consulted on the draft IA for the delivery of a digital consumer consent solution by RECCo Ltd on 30 October 2025.

1.16 The draft IA set out the potential beneficial impacts, both direct and indirect, for consumers and the energy industry of the design and delivery of this solution as proposed. These were compared with the indicative costs, both direct and indirect, to form a draft Cost-Benefit analysis.

1.17 After the publication of the draft IA, we gathered stakeholder input in response to the following questions:

1. Do you agree that we have - to a reasonable degree - identified, understood, and described the potential costs and benefits of implementing the Consumer Consent Solution with RECCo Ltd delivering the Solution?

Do you agree that we have - to a reasonable degree - identified, understood, and described the potential impacts of implementing the Consumer Consent Solution with RECCo Ltd delivering the Solution?

2. Are there, in your view, any unintended economic consequences of implementing the Consumer Consent Solution with RECCo Ltd delivering the Solution which we have not identified?
3. Do you agree with our assumptions and proposed attribution rates for value accrued to the Consumer Consent Solution?

Response to the Draft Impact Assessment

1.18 The responses we received as a result of the draft Impact Assessment raised several broad points, which have been addressed below.

Timelines

1.19 Concerns were raised by several respondents over the timeline of the CC Solution not matching other Ofgem-led initiatives such as Tariff Interoperability and the Flexibility Markets Asset Register (FMAR) and therefore 'missing' the opportunity to support those programmes of work and increasing transition costs. However, it is important to note that the CC Solution timeline was never intended to align with these programmes but is being designed with interoperability in mind so that those systems are able to transition to the CC Solution (once released) with minimal difficulty and incurred costs. This interoperability-focussed design process was already factored into the costs estimates provided by RECCo and is discussed further in the Implementation and Governance working group paper.[19]

Communications and Information Campaign

1.20 Several respondents stated that an awareness campaign informing the public of the CC Solution needed to be explicitly costed and included as part of the Cost-Benefit Analysis. Given that our analysis shows that the overall benefit of the CC Solution is strongly influenced by good uptake of the solution, we have added this in as a factor in the CBA in paragraphs 3.9 – 3.10 and updated our calculations accordingly.

Costs not explicitly included

1.21 The exact breakdown of directly incurred costs is not shared in this IA to protect the procurement process. Costs are aggregated into broad timeframes reflecting the stages of the delivery process. Clarification has been added to paragraphs 3.1 and 3.3 to note that the direct costs cover all aspects of the delivery process and have been redacted intentionally.

1.22 Some respondents felt that our cost estimates were too conservative across the board and that our benefits were overstated and vague. As a result of this, we have increased the estimate for our indirect costs from 11-17% to 15-22% representing higher costs incurred by industry.

1.23 One respondent provided their own cost estimates, but it was ultimately decided to maintain our existing methodology of using prior similar IAs as a benchmark for our costs was the most robust way to proceed. We deemed that a single respondent was not a sufficiently representative sample size to wholly change our cost and benefit figures, however we scaled up the percentage of those

[19] Implementation and Governance Working Group Paper

benchmarked costs that were attributed to the CC Solution to better reflect the increased costs that were proposed by this respondent. This can be seen in paragraph 3.21.

1.24 Additionally, we have only included explicitly monetisable benefits in the CBA, moving discussion of everything that has fewer direct impacts to the hard-to-monetise qualitative analysis to reduce any vagueness in the benefits case. This analysis can be found in chapter 4.

Validity of figures

1.25 Some respondents criticised the use of the 2019 Smart Meter Rollout as the basis for some elements of the monetisable benefits calculation as it is seen as outdated. However, as it is the most recent and relevant dataset available, we have maintained use of it as the basis for our figures.

Clarity and Evidence

1.26 Several respondents expressed that a lack of clarity in the draft IA made it difficult to follow. As a result, the IA has been restructured and explanatory text added at every step to make the overall methodology and rationale behind figures and calculations easier to follow. The rationale behind assumptions in the calculations has been made more explicit, especially in the benefits calculation, where some respondents felt that the figures were insufficiently justified.

1.27 Clarity on the nature of sensitivity analysis in this IA has been provided in paragraphs 2.9 – 2.12.

1.28 Details of the monitoring and evaluation of the Solution have been added in paragraphs 5.15 – 5.18.

Cybersecurity

1.29 One respondent mentioned the increased cybersecurity risks inherent in the CC Solution as a centralised access point (and thus a single point of failure), the increased risk of data breaches inherent in increased data sharing, and the risk posed by new dependencies inherent in a newly created system. These risks were touched upon in the draft IA but not discussed explicitly. In an effort to better address these aspects, they have been discussed in the Hard-to-Monetise Risks section, paragraphs 4.2 – 4.3.

The Counterfactual

1.30 Some respondents expressed that the counterfactual presented in the draft IA was insufficiently justified, as there was no evidence that the benefits calculated could not come about through other means, such as existing consent management mechanisms. It has been clarified in paragraph 2.13 that the counterfactual represents the mechanisms for consent management that already exist in their current form - fractured, siloed, and non-standardised. It represents

the continuation of current practices, not the absence or removal of them. Given that these systems are part of the status quo, there is no evidence to assume that they will become sufficient to deliver the benefits outlined in this IA, which are calculated as additional to the status quo. Such an analysis would be out of scope for this IA.

Out of scope

1.31 Some respondents expressed interest in facets of the CC Solution that are out of scope for this IA but nevertheless warrant acknowledgment.

Complex data flows

1.32 Some respondents expressed interest in an evaluation of how more complex data flows would be handled. Such flows may involve handling data from multiple MPANs, from multi-property portfolios, or from other non-standard agent/broker agreements which may occur. However, this IA is focussed on evaluating the costs and benefits of the MMP, forecasted across the chosen time period. As these workflows are not part of the MMP, these workflows are out of scope. Nevertheless, discussions regarding these workflows will be ongoing as the CC Solution moves through and past the MMP phase for integration as the Solution develops.

Uneven impact on non-domestic suppliers

1.33 One respondent noted that the behavioural (direct) benefits will be less pronounced for non-domestic suppliers while the costs will be borne equally by all suppliers, domestic and non-domestic alike. Evaluating the benefit accrual in domestic and non-domestic contexts is out of scope for this IA as the benefits case calculated reflects three estimated outcomes based on average costs and benefits across the user base of the CC Solution. However, the distribution of costs and benefits between domestic and non-domestic suppliers will be considered as discussions regarding cost recovery mechanisms and the enabling of benefits continue through the development of the CC Solution. In addition, the Decision was clear that the initial scope of the MMP would apply for domestic and small business Smart Meter data only, with scope to expand to cover non-domestic meters and Advnaced Meters in future iterations. The scope of this IA covers MMP features only.

1.34 More detail on the cost recovery mechanisms being considered can be found in the Consumer Consent decision.[20]

Mandation

1.35 Some respondents expressed concern for the efficacy of the CC Solution if it is not mandated for use, resulting in low uptake and benefits not materialising.

[20] Consumer Consent decision | Ofgem

Discussions regarding enforcement and mandation are ongoing and mandation remails an option for the CC Solution. However, evaluation of the risks and benefits of mandating the solution is out of scope for this IA, and there is no evidence to believe that a non-mandatory Solution will lead to benefits failing to arise in their entirety.

1.36 The intent of the CC Solution is to improve upon the existing methods of consent management which are inherently fractured and siloed, providing many incomplete lists of consents to consumers. If the CC Solution provides an improvement to existing architecture, then it stands to reason that it will be utilised. A key facet of the CC Solution that is intended to drive this usage with or without mandation is that it is designed to be highly scalable, pre-empting issues with existing architecture as the industry continues to digitise and handle larger volumes of data. Its identification and verification procedures are being designed to be portable, simplifying the process of consent management compared to existing offerings.

Reaffirming consent

1.37 Some respondents expressed concern at consumers having to reaffirm their consent as it moves over to being managed by the CC Solution. This is outside the scope of this IA, but it is worth noting that if the consent meets the standards utilised for the CC Solution, then the consents can be ported to the CC Solution without reaffirmation being needed. As most consent-holders become accredited, the consents they collect post-accreditation will automatically meet the requirements for the CC Solution. The exact parameters of the requirements are subject to ongoing discussion with licensees, but current thinking is outlined in the Implementation and Governance working group paper.[21] Further detail will also be provided in the upcoming RECCo consultation paper, expected in Spring 2026.

Impacts on specific industry parties

1.38 Some respondents expressed that changes to the SEC and costs incurred by SEC other users were not sufficiently addressed in the draft IA. Evaluating changes to the SEC is out of the scope of the IA, and costs incurred by SEC other users and other industry parties are covered by the Indirect (industry-wide) costs discussed in paragraphs 3.11 – 3.25.

1.39 The costs incurred by SEC other users and other industry parties (such as the DCC) will be unique to each party, based on factors such as the volume of consents held and the number of internal systems requiring updating to interface with the CC Solution. As such, it is not possible to provide disaggregated estimates for the exact costs incurred by SEC other users or any industry parties.

[21] Implementation-Governance-Working-Group-Paper.pdf

Instead, we have increased our estimate of the overall costs accrued by industry parties as a result of the CC Solution. This is reflected in the increase of our indirect costs from 11-17% of the cost estimate set out by MHHS to 15-22%. This provides a less conservative estimate for the costs that may be incurred by industry parties. More detail is provided in paragraph 1.25.

1.40 We appreciate the expertise provided by entities such as the SEC other users in the working groups and will continue to engage with and utilise their knowledge in the development process.

Fragmented governance

1.41 Similarly to the concern expressed over the timeline for the CC Solution not matching initiatives like Tariff Interoperability and Flexibility Markets Asset Register, some respondents expressed concern over the risk of fragmented governance and duplication of investment if such initiatives also involved consent management.

1.42 The full implication of this risk cannot be adequately scoped in this IA, but as discussed in paragraph 1.22, the timelines for these projects were never intended to match exactly. Instead, multilateral discussions are taking place to ensure alignment between the projects and common accreditation is being used in all cases to maximise the ease at which governance can be combined once all projects have been delivered.

Public Sector Equality Duty

1.43 Under the Equality Act 2010, Ofgem, as a public authority, is required to have due regard to factors set out in the act in respect of persons who share relevant characteristics.[28,29] In our view, age and disability appear to be the most likely relevant protected characteristics of persons who could potentially experience digital disadvantaged and be impacted by this policy proposal. In light of this, we considered the potential challenges and impacts and worked with groups specialising in digital disadvantage to consider mitigations to these challenges. Our work in this area will continue to develop until a decision has been made.

2. Approach to the Impact Assessment

Section summary

This section details the scope of the IA, the sources of our figures for costs and benefits, the assumptions which underpin them, and the methodology for the further analysis undertaken. This section also covers the risk analysis for this IA.

Scope of Impact Assessment

2.1 The aim of this IA is to identify and evaluate the costs and benefits of designing and delivering a Consumer Consent (CC) Solution. These will be compared to a counterfactual scenario (representing a Business-As-Usual or 'do-nothing' approach) to assess the viability of the preferred option (described in Chapter 1). This option was chosen is based on the current understanding of the consumer consent landscape in energy, which is informed by previous policy analysis and existing impact assessments, listed in Appendix 1.

2.2 We intend to assess whether the implementation of the Consumer Consent Solution as proposed will enable enhanced secure access to smart meter data to further benefit the energy system and consumers to a degree of scalability that current systems do not appear to provide.[22]

2.3 During the Call for Input, Consultation, and Decision, the proposed initial scope of the project was referred to as a Minimum Viable Product (MVP) and covered only domestic Smart Meter Consumption data. In further RECCo scoping exercises, this has been referred to as a Minimum Marketable Product (MMP). For the avoidance of doubt, we will refer to MMP throughout. This is the scope we are assessing the impact of for value for money. However, we anticipate the Solution to increase depending on use cases, alpha testing, and iterative design which is outside the scope of this document.

Methodology of the Impact Assessment

2.4 The approach to this IA comprises multiple stages. Firstly, we estimate the costs and benefits of the Solution. The costs include both narrow, solution-specific costs and wider, industry-wide costs, and the benefits include both direct and indirect benefits. Secondly, we take those costs and benefits and perform three types of quantitative analysis: a Monetised Cost-Benefit Analysis (CBA), a Break-Even Point analysis (BEP), and a Benefit-Cost Ratio (BCR). Thirdly, we have

[22] Clean Flexibility Roadmap, page 73

included a qualitative analysis of the hard-to-monetise benefits as they are not discussed in the monetised CBA.

2.5 To achieve these quantitative analyses, this IA will look at four aspects:

- **Direct costs:** Detailed indicative costs for the design, development and deployment of the solution – this section will be based on costings from RECCo and will cover personnel, IT spend, design, information campaigns, and deployment costs. As was proposed in the Consumer Consent Solution decision, we expect these costs to be recovered via the REC Cost Recovery Mechanism (CRM) and thus evenly spread between consumers.

- **Indirect costs:** Industry or technical costings – what it will cost Suppliers or other energy sector participants to comply based on previous comparable workings for similar projects. Here we will rely on IAs from the Market-wide Half Hourly Settlement (MHHS) and Open Banking (OB) project, acknowledging that the costs will be significantly less than these programs.

- **Direct Benefits:** The overall direct economic benefit – namely the reduction in bills from consensual sharing of smart meter data, either through tailored tariff offerings, or detailed time of use tariffs - including the weighting applicable for distributional impacts. These are calculated to four sub-scenarios based on uptake and savings potential for different consumer archetypes.

- **Indirect Benefits:** The overall indirect economic benefit – the initiatives which CC Solution will fundamentally enable, how the assumptions underpinned the percentage of benefit accrued to the CC Solution through the enabling of other initiatives, such as:

    - Smart Meter Rollout
    - Market-wide Half Hourly Settlement (MHHS)
    - Smart Secure Electricity System (SSES)
    - Flexibility markets
    - There are other initiatives, such as Elexon's Smart Data Repository (SDR), which will be enabled by the CC Solution, however there is not yet a clear enough picture of expected value, so the enabling value has not been included in this analysis.

2.6 These costs and benefits were calculated in the following ways:

- **Direct Costs, or solution-specific costs:** Our approach to testing the impact and cost of the proposed policy decision was to evaluate the solution costs provided by

RECCo through their published business case, and bilateral conversations with the RECCo delivery team. We have chosen not to publish detailed breakdowns of the costs, to avoid breaching commercial confidentiality through materially affecting future procurement activities during development of the solution. This IA is being conducted outside the strictures of S5 requirements as detailed in the introduction, and previous papers.

- **Indirect costs, or industry-wide costs:** The expected industry costs were collated through a literature review and desk-based research. These indicative costs were compared to previous initiatives with comparable areas of operation such as the smart meter rollout programme and MHHS. We acknowledge these are not directly comparable and have detailed the assumptions we have made in following sections.

- **Direct benefits:** The methodology for this section was based upon the Ofgem Consumer Archetypes.[23] To avoid attributing benefits to consumers which may be already in place through non-CC Solution sharing of smart meter data – i.e. sharing data through existing methods – we discounted any archetype in which a majority of the archetypes identified themselves as 'early adopters' of new technology. We then calculated potential bill reductions based on DESNZ data, existing prices by archetype, and type of heating, forming a 'Savings' range. We calculated potential uptake ranges based upon the uptake of smart meters by archetype, the yearly increase in uptake for Open Banking as an 'upper bound', and the percentage of archetype who consider themselves as 'early adopters'.[24] This creates the 'Uptake' range, and the direct benefits case is calculated for four sub-scenarios based on Low/High Uptake and Low/High Savings potential.

- **Indirect benefits:** These were established by first conducting a literature review (see Appendix 1) and desk-based research to identify projects which would benefit from a more streamlined approach to consent. From this, conversations with subject matter experts and discussions with the leads of each projects left us with working assumptions as to the percentage of benefit attributable to the enabling the project, which we included in this analysis.

2.7 Benefits are calculated in September 2025 prices, and all calculations are weighted for inflation through calculating the Net Present Value (NPV).

2.8 We have based this approach on the assumption that RECCo would be best positioned to provide the most accurate and detailed data regarding indicative costs of the solution, whereas existing analysis has been relied on to analysis the potential direct benefits to consumers. In addition, the potential impacts existing

[23] Ofgem consumer archetypes
[24] Impacts of smart metering roll-out on household energy use - GOV.UK

initiatives which could be enabled by the CC Solution are well-described. Collation and weighting of these existing analyses is best conducted by Ofgem according to existing methodology and consulted on through industry engagement.

Sensitivity analysis

2.9 All forms of quantitative analysis performed in this IA are calculated to three sensitivities: a 'best case' scenario, an 'average' scenario, and a 'worst case' scenario.

2.10 Broadly, the **'worst case'** scenario utilises the highest cost assumptions in a given range and 20% of the lowest benefit calculated, modelling a scenario wherein neither the CC Solution nor related programmes are delivered as intended.

2.11 The **'best case'** scenario utilises the lowest cost assumptions provided in a given range. For the benefit assumptions, we have chosen to still use the lower end of the calculated benefits to avoid optimism bias. We considered modelling the top range of the benefit assumptions or even over-delivery of benefits but did not want to risk over-optimism.

2.12 The **'average'** scenario utilises the midpoint of the cost ranges and the lower end of the benefits range for the same reason as the best case scenario. This scenario is considered the most likely outcome, balancing optimism and pessimism.

The Counterfactual

2.13 For comparison purposes, this IA will compare against the counterfactual – Option 4 – which was a non-intervention approach, or 'do nothing' – and compare the indicative costs against the expected benefits – monetised and hard-to monetise, as well as the direct and indirect – to establish whether the net benefit is positive and sufficient to justify taking this action. This counterfactual scenario is not modelled in the cost-benefit analysis but instead provides the status quo baseline from which the additional benefits and costs are calculated.

2.14 The counterfactual represents our view of what would result in the case of non-intervention. In the case of consumer consent in the energy industry, this would not preclude consumers granting and managing their consent to share energy data. It would continue as is current, with a fractured, siloed, and non-standard way of recording and collating consent. This represents a continuation of current practices, rather than the absence of sharing energy data on the basis of informed consent. To clarify, we base this counterfactual on the assumption of the status quo, rather than a complete cessation of consent-based data sharing.

2.15 In this counterfactual scenario, we expect that the increased friction incurred by non-standardised granting, managing, recording, and revoking of consent results in less consumer engagement. Significantly, the reduced engagement is not evenly spread across demographics but clustered in lower income deciles who are less able to share. Existing consent methods, in addition to being fragmented and siloed, are industry led and commercially driven.

2.16 Without interventionist incentive to bring the benefits of sharing energy data to those less immediately able to benefit from it, and generate profit, the benefits of the flexibility are more strongly slanted towards the 'low-hanging fruit' of prosumers, early adopters, and those already benefiting. Energy becomes more expensive for those who can afford it least, and unfairness to consumers increases.

2.17 The increased friction and lack of a central platform allowing 'at a glance' management of consents granted is expected to increase customer drop off and reduce overall engagement. This slows down the flexibility rollout and delays growth and development of the nascent flexibility market. This is exacerbated by the existing information asymmetry, likely resulting in incumbent participants – suppliers with an interest in providing flexibility services, rather than purely load controlling entities. This results in lower competition, an increase in incumbent power and greater risk of an increase in monopoly power, to the point of posing a risk of market distortion.

2.18 The delay and slower growth of the flexibility market – particularly in the light of the expectation stated in CP30 of achieving 10-12GW of consumer led flexibility as a key plank of balancing the intermittency of low carbon generation to ensure grid stability – poses a material risk to the government meeting its commitment to a zero-carbon energy system by 2030.

Risk Analysis

2.19 Any assessment of future impacts has uncertainty. This policy position has the additional uncertainty of being relatively novel including the deployment of a bespoke technical solution. In seeking to hedge that uncertainty, the design of the solution has been planned to avoid novel or 'cutting-edge' technology, and to rely on reuses of proven technology and proven governance where practicable.

2.20 Even with this approach, there are ranges of uncertainty. In order to address this, we have calculated for the three scenarios as above (best-, average-, and worst-case scenarios) and progressed the direct benefits analysis on a grid of High/Low Uptake and High/Low Savings.

2.21 The CC Solution is intended as a facilitator and enabler for a number of different data and digitalisation initiatives across the energy system aimed at increasing

flexibility, improving visibility of the network from generator to consumer, and using data to drive efficiencies. This analysis has necessarily assumed value derived from these in calculating the benefits of the CC Solution.

2.22 The worst case scenario is predicated on all of these initiatives failing to deliver, in conjunction with high costs and low direct benefits. For this outcome to occur, it would represent a near total non-delivery of the drive toward the decentralised, low carbon energy system, with multiple interlinked projects across government, Ofgem, and industry to fail simultaneously. This outcome is reflected in the 'worst case' scenario analysed in the Cost-Benefit Analysis.

2.23 In summary, the risk analysis indicates that only under extreme conditions, such as multiple interlinked projects significantly under delivering, low uptake and low savings outcomes for the CC Solution, and the highest indicative costs, would the policy's cost outweigh its benefits. It is understood to be improbable for all these conditions to occur simultaneously.

Uncertainty Analysis

2.24 Uptake is a significant factor which underpins the analysis in this impact assessment. To counter optimism bias, we have included High and Low Uptake scenarios, and time-delayed the uptake in modelling. This approach is based on previous examples, mainly the uptake for OB.

2.25 For all uptake, our assumptions regarding uptake have stayed on the lower end of the results seen in the uptake of OB, which currently stands at 13.3m users in the UK, and was tailored according to the characteristics of each archetype from the Ofgem Consumer Archetypes.[25] Using these to underpin, we have confidence that, if buoyed with a suitable consumer information campaign and learning the lessons from OB and the smart meter rollout, these predictions can be relied on with medium/high confidence.

2.26 The uncertainty here stems from the engagement and design of consumer information for the CC Solution. We have considerable lessons to learn from previous efforts to engage with consumers, and this underpins our thinking, which gives a degree of confidence in the assumptions we have made.

2.27 With regarding the solution costs, these figures have been taken directly from RECCo's business plans, meaning we have high confidence in them. There is further detail and greater granularity of the costing which Ofgem has access to, but we have decided not to include in the scope of this Impact Assessment as their publication would potentially run the risk of companies bidding for future roles during RECCo procurement rounds not being reflective of true market cost of the tender.

[25] Ofgem consumer archetypes

2.28 Industry costs are based on previous projects with similar requirements in terms of IT development and consumer interaction, albeit at significantly greater scale. We have drawn comparisons and worked from existing figures to increase confidence in the reliability of indicative figures.

3. Analysis – Quantitative

Section summary

This section covers Ofgem's assessment of the monetisable costs and benefits associated with the CC Solution as well as quantitative analysis of those costs and benefits. The quantitative analysis takes the form of a Cost-Benefit Analysis (CBA), a Benefit-Cost Ratio (BCR) and Break-Even Point (BEP) analysis. These analyses are done to three sensitivities representing a best case, worst case, and average scenario. These scenarios test our assumptions to better understand when the benefits accrued by this proposed policy decision outweigh the costs.

Monetised Cost-Benefit Analysis

Costs – Direct (Solution-Specific)

Summary of options	Set Up Costs (2025-2027)	5-year Enduring Service Delivery Costs (Total over 5 years)	Post MMP Project Running Costs	Key considerations (Risks, assumptions, distributional impacts etc.)
Indicative costs for project delivery and embedding the CC Solution	£7m-£8.5m	£10.75m - £17.25m	£3.6m - £4.8m	Based on figures provided by RECCo
Consumer Awareness campaign	£1.02m - £1.19m	-	-	Estimated at 12-14% of set up costs

3.1 The figures for solution-specific costs have been taken directly from a business case published by RECCo, the chosen delivery body, describing their indicative costs.[26] Aspects of this, notably the explicit breakdown of costs, have been redacted to protect the procurement process.

[26] RECCo Business Case 2025: Consumer Consent Service

3.2 The costs are broken down into three main timeframes: the initial set-up costs (covering the period of 2025-27 and the scope of the MMP); the 5-year enduring service delivery costs (covering the following five years and development beyond the scope of the MMP); and the post-MMP project running costs (reflecting the expected annual running costs for the solution).

3.3 These costs cover all aspects of the CC solution development, including governance, regulatory and service delivery, engagement, security and data protection, technological and commercial considerations. However, the exact breakdown of the costs has been redacted to protect the procurement process.

3.4 The 5-year enduring service delivery costs include further development funding for later iterations and subsequent user-led development – with cost-risk included – beyond the scope of the MMP. It also includes the cost of two permanent staff for enduring service delivery at the end of the project.

3.5 While there were responses to the Consumer Consent Decision which suggested moving to a user pays model in future (thus removing the need for enduring service delivery costs), this was not decided or considered during the consultation process. Consequently, the IA considers the ongoing costs as a continuation, rather than discounting them as potentially subsumed into a user-pays model in the future.[27]

3.6 The post-MMP running costs include performance assurance costs – including independent assurance activities - for the five years following the conclusion of the project.

3.7 It is assumed that the financial estimates held in RECCo's Market Testing Procurement Report are accurate. Nevertheless, in order to ensure prudence, all estimates have been taken from the higher end cases to counter optimism bias.

3.8 Assumptions regarding timing of spend, for example proximity to the end of each financial year, etc, are based on the best information available at time of writing.

3.9 The draft IA did not include costs for a Consumer Awareness or Information Campaign, but responses to the draft IA indicated that this element was an important factor in the overall cost-benefit analysis. As such, we have included estimates for a such a campaign, covering a B2B approach to consumer awareness as well as consumer-facing branding.

3.10 This will focus on direct interaction between businesses and consumers being the primary method of awareness, rather than a media-focussed direct-to-consumer approach. Additionally, the campaign will ensure that those in direct contact with consumers (such as local authorities, tenant support officers, and consumer advocacy groups) are able to support consumers in their understanding of the

[27] Consumer Consent Decision

value exchange created by the solution. This approach follows the example set out by Open Banking, with third-party providers acting as the primary driver of consumer engagement through promotion of their own use cases.

3.11 We have estimated the costs for a Consumer Awareness or Information campaign would be approximately 12-14% of the overall set-up costs taken from RECCo's Market Testing Procurement Report. To avoid optimism bias, we have taken the upper end of the set-up cost estimation as the basis for this calculation, giving an overall estimate of £1.02m - £1.19m.

Costs – Indirect (Industry Wide)

Summary of options	Set Up Costs (2025-2027)	Annual Costs	**Key considerations** (Risks, assumptions, distributional impacts etc.)
Based upon analytical comparison to previous costed projects	£10.3m-£15.9m	£1.6m - £2.5m	Primarily based on MHHS due to project similarity with Open Banking figures supporting estimates

3.12 These costs were estimated through comparison with two prior projects: MHHS and Open Banking. Benchmarking our costs against these existing project IAs allows for higher confidence in the estimations.

Market-wide Half Hourly Settlement (MHHS)

3.13 MHHS is considered the closest parallel to the CC Solution in terms of costs and scope. MHHS and the CC Solution both primarily affects suppliers, are held, designed, and delivered by a code body. However, MHHS is a wider-reaching change with a broader impact on how bills are calculated. By comparison, the CC Solution has a narrower scope and has thus been calculated as a percentage of the overall MHHS industry costs, as explored below.

3.14 Much like with MHHS, the main driver for costs to industry is expected to be upgrading existing or purchasing new IT systems to interact with the CC Solution. We have stated our expectation that supply licensees, as the holders of existing consent data, would record existing consents on the CC solution, and that this would be a requirement under licence. The impact of requiring this would be mitigated by the use of standardised Application Programming Interfaces (APIs) to connect with the Solution, thus keeping IT spend to a minimum.[28]

[28] Appendix 1 of The Global State of Open Banking and Open Finance Report for examples.

3.15 While there is no direct comparison available, as the eventual design of the solution API is currently ongoing and will be subject to the RECCo design consultation, we have based the expected cost on that of the MHHS Final Impact Assessment, while acknowledging that the IT systems adaptation required for Half-Hourly Settlement is substantially greater and affects more fundamental IT estates than the requirement to engage with a standardised API to transfer consumer consents.[29]

3.16 As such, the costs attributable to the CC Solution have been calculated as a percentage of the comparable cost attributed to MHHS. Further detail on the current technical design of the Solution, including API design, can be found in the Technical Design and Security working group paper.[30]

3.17 Much like the MHHS, we are anticipating the majority of costs to industry from the CC Solution to be transitional, and the ongoing cost of connection to be minimal. These transitional costs are reflected in the percentage of MHHS costs that have been considered applicable to the CC Solution (detail on this decision provided in paragraph 3.21).

3.18 These costs will be mitigated as much as practicable through clear technical specifications contained within the RECCo design consultation and Ofgem consultations prior to any change to the supply licence to include these obligations.

3.19 With regards ongoing connection costs, we are expecting that the service level agreements relating to uptime and availability will be agreed through the Trust Framework which will form the governance of the CC Solution, and be primarily contingent upon existing IT systems, rather than requiring dedicated uptime service support.

Open Banking (OB)

3.20 In addition to MHHS, we examined the costs incurred in establishing Open Banking, which were analysed in the Smart Data Impact Assessment of 2024.[31] The costs here are an order of magnitude higher than ours due to scale and degree of the change to existing IT systems, creation and resourcing of the Open Banking Implementation Entity (OBIE), accreditation and support costs.

3.21 It is worth noting that at the time the assumptions were that OB industry implementation costs associated with the creation of the OBIE and Implementation Trustee would not exceed £20million (2016 index).[32] We are mindful of the lessons learnt from OB in conducting this IA and have chosen not to follow the route of a separate implementation entity due to the lesser complexity

[29] MHHS Final Impact Assessment
[30] Technical Design and Security Working Group Advisory Paper
[31] Smart Data Impact Assessment 2024
[32] Open banking lessons learned review – paragraph 47

of this policy, and the risk of escalating costs and delays which OB experienced as the 'first mover' into opening up data within the UK economy.

Estimating costs

3.22 In weighting the IT spend costs to industry based upon the comparisons, we made the following assumptions:

- Volume of transactions (i.e. customers of each supplier who have granted consent to the supplier for processing energy data for purposes other than billing) will be around 11% of all existing customers. This is based on the current uptake for OB, and this is likely to be considerably higher than actual traffic with concomitant increase in cost assumptions. However, this assumption will allow capacity for growth.

- Existing consent recording methods are not standardised, and existing IT systems will not be automatically able to interface with the CC Solution, which will require transformation at the boundary of each supplier's IT estate to be 'loaded' onto the CC Solution.

- Ancillary services such as configuration work to firewalls or any other network edge devices, or reconfiguration to enable connection will require procured service, rather than being a BaU capability. This is likely a pessimistic assumption, given the technical capabilities of suppliers, however we have factored this assumption in to consider the worst case in terms of costs.

- Monitoring, network, and server storage costs will be higher for onsite storage than for purely on-cloud or Software As A Service (SAAS) solutions. We have assumed the higher cost of on-site servers throughout to factor in the higher end of costings.

- In the case of OB, there has been a regular fall in operating costs. While this may prove similar with CC, we are not factoring in any predicted fall in costs to avoid any undue optimism bias.

Table 3.1 – Weighted comparisons with projects already costed.

Project	Industry IT Transitional Costs	Industry IT Ongoing Annual Costs	Percentage weighting for CC Solution
MHHS[33]	£93.6m (2019£, undiscounted)	£14.9m (2019£, undiscounted)	15%-22%
Open Banking[34]	Accreditation & Onboarding at £2.9m per credentialled entity (2020£, undiscounted, 21 entities)	£600,000 per credentialled entity (2020£, undiscounted, 21 entities)	17% - 26%

3.23 The percentage weighting of MHHS costs has been changed since the draft IA as a result of several responses indicating that the costs to industry of the CC Solution had been underestimated. Initially, 11-17% of MHHS costs and 17-26% of OB costs were attributed to the CC Solution. This was based on discussions in industry working groups and initial drafts of RECCo's design of the solution for the technical specifications compared to the costings for overall industry alignment with MHHS and OB.

3.24 The percentage weighting for MHHS costs has been scaled up to 15-22% to better reflect the costs incurred by industry parties in transitioning to and maintaining their use of the CC Solution. No change has been made to the percentage weighting for OB costs. As the comparisons cannot be like-for-like (as discussed previously), a range of percentages was necessary over a concrete figure.

Table 3.2 – Estimated CC Solution costs from comparison with existing projects

Comparison	Industry IT Transitional Costs	Industry IT Ongoing Annual Costs
Consumer Consent (MHHS Comparison)	£14m – £20.6m (2019£, undiscounted)	£2.2m - £3.3m (2019£, undiscounted)
Consumer Consent (OB Comparison)	£10.4m – £15.8m (2020£, undiscounted)	£2.1m - £3.2m (2020£, undiscounted)

3.25 The figures presented in Table 3.2 were reached by applying the percentage weighting established in consultation with RECCo to the costs set out by the schemes' own IAs. In the case of OB, the cost per credentialled entity was taken

[33] MHHS Final Impact Assessment
[34] Implementation of the revised EU Payment Services Directive (PSDII) - GOV.UK

as an average cost for the 21 UK licensed Suppliers and totalled for comparison purposes.

3.26 Reflecting upon these costs, it is important to note that MHHS is a closer parallel to the CC Solution. As MHHS exists within the same industry as the CC Solution, utilising its costs as the basis for our own reduces the risk of underestimating or missing elements of complexity in the industry. Comparatively, in the case of OB, the role of incumbent banks (those under the direction from the Competition and Markets Authority known as CMA9) was more resource - and thus cost-intensive - especially during the initial creation and deployment of OBIE. These costs had no parallel for the CC Solution and were discounted. The delineation between incumbent banks and incomers does not have a parallel with energy suppliers.

3.27 Initial consideration for separating the 'Big Six' suppliers was considered and discounted as not analogous. Given the focus on consumer energy data, the closest parallel is with energy suppliers as the incumbents, and Third-Party Intermediaries (TPIs), such as load controllers, innovators, Price Comparison Websites (PCWs), and others who seek to access consumer energy data acting as incomers. For these reasons, we have discounted the OB-based estimates and used the MHHS-based estimates as the basis for our industry-wide costs.

3.28 Following this analysis, we have calculated indicative industry costs for the CC Solution as follows:

Table 3.3 – Total estimated costs – RECCO indicative design costs and estimated industry costs with confidence ratings.

Consumer Consent	Initial set-up costs	5-Year enduring service delivery Costs	Yearly running costs	Confidence rating
RECCo design and deployment costs	£7m-£8.5m	£10.75m - £17.25m	£3.6m - £4.8m	High
Consumer Awareness campaign	£1m-£1.2m	-	-	Medium

Industry Costs	£14m-£20.6m	-	£2.2m - £3.3m	Medium
Total Costs	£22m - £30.3m	£10.75m - £17.25m	£5.8m - £8.1m	Medium-High

3.29 These costs, coupled with the costs incurred by RECCo for the design, deployment, and running of the CC Solution leave a total indicative cost range of £17.3m - £24.4m for the years 2025-2027, then the five years of enduring development costs, predicted to be between £10.75m to £17.25m, followed by a yearly operating cost range of £5.2m - £7.3m. These costs will form the basis of the BCR to calculate the break-even point, and the Benefit-Cost Ratio calculations of the CBA found in paragraph 3.27-3.28.

Benefits – Direct

Scenario	**Annual Benefits**	**Key considerations** (Risks, assumptions, distributional impacts etc.)
Low Uptake, Low Saving	£8.9m	Takes the lower bound of both the uptake and savings assumptions.
Low Uptake, High Saving	£15.4m	Takes the lower bound of uptake and the upper bound of savings.
High Uptake, Low Saving	£45.3m	Takes the upper bound of uptake and the lower bound of savings.
High Uptake, High Saving	£69.8m	Takes the upper bound of both the uptake and savings assumptions

3.30 The direct benefits case is calculated to four sensitivities based on assumptions about both uptake and reduction in bills to give a total estimation of benefit. These assumptions are weighted according to both Ofgem Consumer Archetypes (taken

from 2024 report) and Citizen's Advice research in order to ensure that the benefit assessed reflects a typical or average consumer.[35, 36,37]

Uptake assumptions

3.31 Uptake is split by consumer archetype to reflect the reality that the benefits of the CC Solution would not be borne equally across society. We considered that those who are early adopters of new technologies - namely those who already have EVs, solar PV, in-home batteries, smart meters, etc - are likely to be already sharing consumption data with a load controller, aggregator, or other service provider. Therefore, they would benefit from the CC Solution less than those on lower income, with less ability or wherewithal to benefit from their energy data.

3.32 To avoid optimism bias in this IA, we have discounted archetypes defined as 'early adopters' as we expect those to already be sharing energy data and not to be motivated to further share through the deployment of the CC Solution. This removes B6, D11, E14 – F16, H20-J24 from the table on pages 10-12 of the Ofgem Consumer Archetypes.

3.33 As the Consumer Archetypes (A-J) form income deciles, it is important to note that the majority of these 'early adopters' are from higher deciles, indicating that the benefit of the CC Solution will be primarily felt by those in lower income deciles.

Savings assumptions

3.34 Savings assumptions were calculated based on where direct bill-reduction benefits are expected to accrue for the relevant Consumer Archetypes through energy efficiency savings. These expected savings were calculated based upon the archetypes' electricity use, housing stock (including heating type and home insulation) and other circumstances which could lead to potential for bill reduction. The reductions were based on electricity bills, with the ranges being calculated from Which?, DESNZ, and Citizens Advice (CitA) figures from sharing smart meter data with optimisation services.[38,39]

Table 3.4 – Consumer Archetypes and Expected Uptake/Benefits

[35] Ofgem consumer archetypes
[36] Ofgem consumer archetypes
[37] Get Smarter: Ensuring people benefit from Smart Meters - Citizens Advice
[38] Get Smarter: Ensuring people benefit from Smart Meters - Citizens Advice
[39] Smart meters: consumer attitudes and behaviours in the smart meter roll-out - GOV.UK

	Description	Number of Households	Average Elec Consumption (kWh)	Presumed uptake (%)	Expected reduction in bills (£)
A 1	Lowest income; mains gas; retired; 75+ years old; single adults; owner-occupied; urban; not early adopters; no internet connection; no degree or higher	578,333	2,742	0.5-2%	£35-£50
A 2	Low income; housing association; single adults; 55+ years old; prepayment meter; WHDS eligible; good EPC rating; no degree or higher	868,191	2,849	5-8%	£45-£80
A 3	Low income; mains gas; retired/unoccupied < 65 years old; prepayment meter; housing association/local authority; disability benefits; mobility disability; CWP eligible; WHDS eligible; good EPC rating; no degree or higher	883,413	3,519	1-3%	£40-£65
B 4	Low income; electric heating; retired/unoccupied; 65+ years old; purpose-built flats; owner-occupied/housing association; high electricity consumption	731,318	4,811	2-11%	£55-£95
B 5	Low income; electric/solid fuel/LPG heating; 45+ years old; retired/unoccupied; disability benefits; high electricity consumption	465,288	6,597	2-4%	£40-£60
C 9	Lower-middle income; couples/single adult woman; retired; 65+ years old; owner occupied semi-detached/terraced dwellings; average energy consumption; WFP eligible	3,408,514	3,337	1%-10%	£60-£100
D 10	Lower-middle income; mains gas; disability benefits; mobility & dexterity disability; retired/unoccupied; owner occupied; semi-detached/terraced; 55+ years old; not early adopters; CWP & WFP eligible;	1,163,946	3,881	2-4%	£35-£65
D 12	Lower-middle income; retired 65+; owner occupied; detached; couples; high gas consumption; not early	1,457,829	3,952	1-9%	£40-60

	adopters; eligible for WFP; suburbanites				
G17	Upper middle income; Oil/Other heating system; unconventional housing; Owner occupied; self-employed; couple/single adult; 45+ year olds; rural; unknown EPC rating	163,166	5,901	2-5%	£90-£165
G18	Upper middle income; Other heating fuel; owner occupied; full-time employed/retired 65+; low scheme eligibility	667,836	5,294	2-5%	£100-£170
H19	Upper-middle income; oil heating fuel; retired 65+/full-time employed; poor EPC rating; rural; owner-occupied; detached/semi-detached; WFP eligible	675,712	4,907	0.5-2%	£60-£85

3.35 This analysis of bill reductions was based on the gross figures from the most recent (2019) Impact Assessment for Smart Meter rollout from p35, which assumed a baseline figure of 3% for electricity reductions and 2.2% for gas reductions, based on supplier research. Our rationale for weighting by archetype is as follows;[40]

3.36 A1 – With this archetype having the lowest proportion of internet access, and the greatest degree of usage stability and low 'peakiness', there is the lowest likelihood of engaging with the CC Solution through digital exclusion through lack of connection. This cohort is not disengaged, with most having switched tariff at least once, and engaged with the energy market in the past 12 months. Coupled with CitA or other advocacy, there may be engagement, but this is hampered by the lack of capacity to flex due to low peakiness. As a result, we have assumed 0.5% - 2% are likely to engage with the CC Solution, and those who do will see a minimal reduction in bills, due to low electricity usage, poverty, and lack of flexibility potential.

3.37 A2 – With the archetype, there is a greater degree of flexibility of energy user, greater degree of engagement with the energy sector, with a higher percentage considering themselves early adopters. The higher percentage of housing association occupancy results in greater insulation and overall EPC rating, making low carbon technologies (LCTs), such as heat pump viable. That, coupled with the internet connectivity and increased digital literacy have resulted in our deeming this archetype more likely than A1 to engage with the CC Solution – leading us to assume an uptake range of 5% - 8% - which, coupled with their lower-than-

[40] Smart Meter Roll Out Cost-Benefit Analysis

average electricity use and ability to flex, likely to see greater yearly reduction in bills.

3.38 A3 – Similar to the above archetypes, A3 is a low-income household, with 52% below the poverty line. Unlike A1 & A2, 100% of this archetype are on disability benefits, with 62% of the households having a mobility disability and 41% of households paying for electricity with a prepayment meter. Despite 84% having internet access, and 43% considering themselves early adopters; the preponderance of prepayment meters, and regular and inflexible electricity usages resulting from the necessities of disability, we anticipate lower uptake, in the range of 1% - 3%, and lower immediate bill reduction.

3.39 B4 – This archetype is the lowest income of the B decile group. They consume significantly higher electricity than the UK average, due to being off mains gas, and will consequently see greater reduction on their bills through sharing of energy data and potentially flexing electricity use. In addition, this archetype are not early adopters, and 58% have never switched tariffs. There is no impediment – either capacity to flex or digital literacy – which accounts for this, which makes this archetype the 'target market' for a low friction way to share energy data for the expected reduction in bills. As such, we have a wider range of likely engagement, between 2% and 11%, to represent the uncertainty over the publication and consumer adoption of the CC Solution. However, the expected bill reduction is higher due to the capacity to flex, and the higher-than-average electricity usage.

3.40 B5 – This archetype shows considerable variation in tenures and dwelling types, with concomitant variety in EPC ratings, and few consider themselves early adopters. They are characterised by high electricity use and high (99%) receipt of disability benefits. This necessitates higher electricity use for heating and medical devices, and makes for inflexible demand, coupled with below average internet connectivity and above (nearly double UK average) prepayment metering. For these reasons, we have deemed this archetype as lower likelihood of adoption of the CC Solution at 2% - 4%, and less likely to benefit from substantial bill reduction.

3.41 C9 – This archetype is typified by owner-occupancy, with lower middle retirees (65+) who are either couples or single adult women. They do not consider themselves early adopters but have internet connectivity and simple bill-payer/owner arrangements as well as considering themselves engaged with the energy market (100% say they are engaged, and 87% have switched tariffs). While this archetype has typical electricity usage, the potential to engage with the CC Solution as a lower friction alternative remains high. Of note is the size of this archetype, representing 3.41m UK households. Similar to B4, we consider this a wide range of potential engagement, between 1% and 10%, but with marginally higher expected bill reduction.

3.42 D10 – Households in this archetype are average in electricity consumption, generally do not have electric heating, and are retired or unoccupied couples or multiple adults with children; with 100% on disability benefits. They have greater eligibility for GB schemes such as Cold Weather Payments. The requirement for consistent electricity use makes them relatively inflexible when it comes to demand. This, coupled with average consumption, makes them less likely to engage with the CC Solution assumed to be in the range of 2% - 4%, and less likely to see substantial benefits in terms of bill reduction. However, at 1.16m households, they represent a considerable cohort of UK consumers.

3.43 D12 – Similar to C9 and D10, households in the D12 archetype represent a larger proportion of UK households than others, with 1.46m households. Demographically, this archetype is characterised by retired (65+) owner-occupiers with large, detached suburban dwellings. Their gas usage is higher, with little scope for electrification of heating, and few early adopters in the archetype. However, 100% of this group have engaged with the energy market and have switched tariff. As with B4 and C9, the likelihood of engaging with the CC Solution is dependent on the how informed and willing to adopt the solution consumer are, and so calculations are necessarily based on a wider range, with uptake assumed to range between 1% and 9%. However, the reliance on gas means a lower potential bills reduction based on our assumptions of current design of the solution.

3.44 G17 – This archetype is differentiated by unconventional housing (such as converted churches, barns, houseboats, caravans, etc), low to negligible mains gas usage (using mostly oil and bulk LPG as heating), and very high electricity consumption. This group also has very high use of renewable source for heating. It is challenging to establish EPC ratings or create a typical profile for what gains could be made from this group engaging with the CC Solution, but the high energy use and high proportion of electrified heating could show considerable bill reduction. To avoid over-assuming the uptake for what is a difficult to quantify group, we have assumed the range of uptake to be between 2% and 5%.

3.45 G18 – This archetype consists of upper middle-income earners in rural owner-occupied households, with most heating coming from ‘other’ category. This is mostly a mix of bulk LPG and solid fuel; however – as with the G17 archetype – a high percentage (9%) use renewable sources of heating, meaning there is electrification, and scope for flexibility of electricity demand which can mean effective benefits from the CC Solution. This archetype could see significant bill reductions through the lower friction of the CC Solution and have lower self-declarations of being early adopters. This is why we have assumed the uptake range to be similar to G17; namely 2% - 5%.

3.46 H19 – As the highest income archetype considered as part of this IA, H19 consists of upper middle-income couples with no children, who own their property in primarily rural areas. Overall, they have poor EPC ratings and high electricity

consumption, with most heating provided by unmetered fuel oil. 60% of this archetype have never switched tariff and are not likely to engage with the energy market. As such, we have calculated the likely engagement with the CC Solution as low, in the 0.5% - 2% range, and the potential bill reduction as low, due to the lack of flexibility potential.

3.47 These uptake and savings figures, split by consumer archetype, form the basis of the four scenarios (shown in Table 3.5). For each, we take the upper or lower bound of the Uptake assumption and multiply it by the number of households in that archetype and the upper or lower bound of the Savings assumption to reach a total GBP value. The total estimated savings on bills from these calculations are shown in Table 3.6

Table 3.5 – The four scenarios analysed in the benefits calculation

	Uptake: Lower bound	**Uptake: Upper bound**
Savings: Lower bound	Low Uptake, Low Saving scenario	High Uptake, Low Saving scenario
Savings: Upper bound	Low uptake, High Saving scenario	High Uptake, High Saving scenario

Table 3.6 – Grid view of the total estimated savings on bills split by the four scenarios

		Uptake - Low	**Uptake - High**
A1	**Saving Low**	£101,208	£404,833
A1	**Saving High**	£404,833	£578,333
A2	**Saving Low**	£1,953,430	£3,125,488
A2	**Saving High**	£3,472,764	£5,556,422
A3	**Saving Low**	£353,365	£4,424,474
A3	**Saving High**	£706,730	£1,722,655
B4	**Saving Low**	£804,450	£4,424,474
B4	**Saving High**	£1,389,504	£7,642,273
B5	**Saving Low**	£372,230	£744,461
B5	**Saving High**	£558,346	£1,116,691
C9	**Saving Low**	£2,045,108	£20,451,084
C9	**Saving High**	£3,408,514	£34,085,140

D10	**Saving Low**	£814,762	£1,629,524
D10	**Saving High**	£1,513,130	£3,026,260
D12	**Saving Low**	£583,132	£5,248,184
D12	**Saving High**	£874,697	£7,872,277
G17	**Saving Low**	£293,699	£734,247
G17	**Saving High**	£538,448	£1,346,120
G18	**Saving Low**	£1,335,672	£3,339,180
G18	**Saving High**	£2,270,642	£5,676,606
H19	**Saving Low**	£202,714	£810,854
H19	**Saving High**	£287,178	£1,148,710

3.48 Taking the sum of the archetypes provides the following totals for each scenario:

Table 3.7 – Grid view of total UK savings on bills based on the four mapped scenarios

Total per scenario	**Annual Benefits in £ (2024)**
Low Uptake, Low Saving	£8.9m
Low Uptake, High Saving	£15.4m
High Uptake, Low Saving	£45.3m
High Uptake, High Saving	£69.8m

3.49 The average benefit across the scenarios is **£34.9m**.[41] However, this calculation must be viewed in the light of the considerable variation between the high uptake and low uptake scenarios. The expected benefits for the Low Uptake, High Saving scenario is one third of the value of the High Uptake, Low Saving scenario. From this, it is clear that the value of the CC Solution increases considerably with greater uptake. This finding will inform the consumer engagement and consumer information strategies to maximise uptake.

3.50 Thus, it is apparent that clear, consistent, and unmistakeable public communication with a uniform message will be required for the success of the platform and its interaction with consumers to drive adoption rates. The success hinges on making the offering as simple and attractive as possible. Scepticism and confusion will rapidly erode any confidence and adoption of the platform.

3.51 Table 3.8 shows the predicted benefits through bill reductions as a percentage of average household income for each archetype.[42] These were calculated for the

[41] Calculated as the arithmetic mean.
[42] Calculated as the arithmetic mean of household income in that archetype.

upper and lower bounds of the Savings assumption, as well as for the median point of that range.

3.52 The archetypes receiving greater benefit by proportion of income than the mean benefit are in bold and those receiving less than the mean as a proportion of income are italicised and underlined.

Table 3.8– distribution of benefits through bill reductions calculated for the CC Solution

Archetype	Average Household Income	Lower Reduction	Lower Benefit as percentage	Upper reduction	Upper Benefit as percentage	Midpoint Reduction	Midpoint as a percentage
A1	£15,643	£35	**0.22%**	£50	**0.32%**	£42.50	**0.27%**
A2	£17,327	£45	**0.26%**	£80	**0.46%**	£62.50	**0.36%**
A3	£18,195	£40	**0.22%**	£65	**0.36%**	£52.50	**0.29%**
B4	£18,776	£55	**0.29%**	£95	**0.51%**	£75.00	**0.40%**
B5	£22,423	£40	*0.18%*	£60	*0.27%*	£50.00	*0.22%*
C9	£32,344	£60	*0.19%*	£100	*0.31%*	£80.00	*0.25%*
D10	£31,819	£35	*0.11%*	£65	*0.20%*	£50.00	*0.16%*
D12	£38,927	£40	*0.10%*	£60	*0.15%*	£50.00	*0.13%*
G17	£44,586	£90	**0.20%**	£165	**0.37%**	£127.50	**0.29%**
G18	£49,265	£100	**0.20%**	£170	**0.35%**	£135.00	**0.27%**
H19	£52,924	£60	*0.11%*	£85	*0.16%*	£72.50	*0.14%*
Averages	£31,112	£55	0.19%	£90	0.31%	£73	0.25%

3.53 This analysis shows that there is proportionally greater benefit accrued to those in lower income deciles. Coupled with the deliberate discounting of those deemed as early adopters, this shows that those who have least will benefit most from the CC Solution.

3.54 The exceptions to the trend of bill reduction increasing as household income reduces are the G17 and G18 archetypes which consist of 'unconventional and rural housing in upper income deciles. These consumers use have relatively high electricity use, including a high proportion of renewables and relatively high potential for flexibility, which could lead to effective benefit from the CC Solution. These archetypes represent 831,002 households, or approximately 3% of UK consumers.

3.55 With this considered, we are confident in predicting that the benefits of this policy position will be distributed progressively.

Benefits – Indirect

Summary of initiative enabled	**Annual benefit attributable to CC Solution**	**Key considerations** (Risks, assumptions, distributional impacts etc.)
Flexibility Markets	£16-20m	Discussions with workstream experts and analysis to reach 1% attribution of total.
Smart Meter Rollout	£4.01m	Calculated at 1% of Carbon & Air Quality benefit and 0.1% of Supplier benefits, split across the post-MMP period.

3.56 There are a number of large-scale projects aimed at achieving a decarbonised energy system which require consumers to share their energy data. Under UK GDPR , this data can only be shared between companies with the consumers' informed and explicit consent.[43] While the new Data Use and Access Act 2025 (DUAA) makes some changes to data protection laws in order to promote innovation and economic growth while still protecting people and their rights, this Act does not remove the requirement for consent to share energy data.[44]

3.57 Consequently, these projects are expected to be enabled by the CC Solution, by a greater degree than the current non-standardised and more complicated processes to record and manage consumer consent.

3.58 Four large-scale projects are particularly relevant, with a portion of their benefits being attributable to the support which will be provided by the CC Solution. These are Flexibility Markets, Smart Secure Electricity System (SSES), Smart Meter Rollout, and Market Wide Half Hourly Settlement (MHHS), descriptions of which can be found in Table 3.9.

3.59 Flexibility Markets and Smart Meter Rollout are analysed in depth in this section, forming the estimation for the indirect benefits of the CC Solution. For our purposes, SSES is considered a facilitator of Flexibility Markets rather than having its own unique benefits which can be attributed to the CC Solution. Therefore, it

[43] ICO response to BEIS consultation on smart appliances
[44] The Data Use and Access Act 2025 (DUAA) - what does it mean for organisations? | ICO

can be considered part of the evaluation of Flexibility Markets despite not being explicitly discussed.

3.60 MHHS, being in progress, does not currently have a published value case which would allow further development of the analysis. As such, in order to avoid overestimating the benefit of the CC Solution, we have considered it a Hard-to-Monetise benefit and will discuss it in paragraphs 4.16 – 4.20. However, we expect that the value case can be more clearly developed as this workstream advances.[45]

Table 3.9 – Initiative supported by CC Solution

Initiative	**Description**	**Interaction with CC Solution**
Flexibility Markets	Overall, Ofgem and government are seeking to create a market for flexibility of demand – CP30 requires 10-12GW of consumer driven flexibility to reduce generation and system build	Granting and managing consent has been highlighted as a source of potential friction for Flexibility
Smart Secure Electricity System (SSES)	This is the driving initiative – arising from the Energy Act 2023 – of a licensing framework and creating market conditions for growth in flexibility, led by DESNZ and Ofgem.	The CC Solution is critical to reduce friction and consumer 'drop-off' for Flexibility Service Providers (FSPs)
Smart Meter Roll-out	The rollout of smart meters is an ongoing government drive with the 2025 target of 74.5% of domestic properties	Simpler ways to use the SM Consumption data will improve take-up of SM installation, by providing more attractive 'offers' from market
Market Wide Half Hourly Settlement (MHHS)	MHHS is in progress and will be delivered over the next 18 months. While settlement has enabled flexibility markets with further developments such as code modification P483, there are non-settlement uses for HH data while will accrue greater utility to this project.[46],[47]	Similarly, half hourly consumption data has considerable utility outside of settlement, which can be unlocked with the CC Solution.

[45] Smart Meter Energy Data Repository Programme: Phase 2 project - GOV.UK
[46] Flex market opened to all consumers in 'giant step' - Utility Week
[47] P483 Balancing and Settlement Code (BSC) changes | Ofgem

Flexibility Markets

3.61 One of the stated aims of the Consumer Consent solution is to, through the standardisation and simplification of managing consent, ensure that consumers find it easy to share and manage consents, increasing the uptake of services which require access to energy data. We anticipate that this reduced friction will increase the uptake of flexibility services.

3.62 Although detailed domestic Demand Side Response (DSR) modelling by Government is not currently available, there is Government modelling of costs and benefits proving high level evidence that DSR, and domestic DSR specifically, can deliver system cost savings. The 2022 joint DESNZ and Ofgem Electricity Networks Strategic Framework (ENSF) analysis shows 15 GW of DSR (with 10-14 GW from EVs) can reduce overall system costs by 5% to 2050.[48] This is a **£40-50 billion system cost reduction to 2050**; with **£10-20 billion** saved from **lower distribution network reinforcement,** and the remaining **£30 billion** saved from **lower generation/storage capital costs**. The modelling has limitations likely to underestimate the benefits of DSR, additionally it should be noted that cost of DSR is modelled as zero, with justifications provided for this assumption.

3.63 Modelling limitations include for example: Vehicle to Grid (**V2G) flexibility is not included and only implicit (wholesale based) flexibility is modelled.** The energy system cost of DSR is assumed to be zero because the assets (predominantly EVs and HPs) are being installed anyway through the economy-wide 2050 net zero transition, and the additional cost of adding smart hardware/software is considered to be negligible. Other government analysis indicates there will be small increases in device costs for smart functionality and small costs to firms for implementation.[49, 50]

3.64 Modelling from DESNZ and Ofgem's joint 2021 Smart Systems and Flexibility Plan (SSFP) has quantified the benefits of a 'high flexibility' World B type scenario.[51] Overall, a 'high flexibility' scenario reduces system costs by £30-70 billion to 2050. Through reducing generation build out we save up to £50 billion to 2050 and through reducing network build out we save up to £26 billion to 2050. This analysis shows the annual £10 billion cost savings in 2050, coming predominantly from generation cost savings but also from network cost savings. It should be noted that this modelling has several limitations, which are likely to underestimate the savings flexibility can provide.

3.65 Limitations of this modelling include, for example: V2G flexibility is not included, distribution network constraints are not accounted for, scenarios are not net zero

[48] Electricity networks strategic framework - GOV.UK
[49] Electric vehicle smart charging - GOV.UK
[50] Delivering a smart and secure electricity system: implementation - GOV.UK
[51] Transitioning to a net zero energy system: smart systems and flexibility plan 2021 - GOV.UK

compliant in 2050, only implicit (wholesale based) flexibility is modelled, and it does not consider long duration energy storage flexibility.

3.66 These figures show the direct benefit of flexibility as a whole. We predict that this value to the energy system will be enabled by the reduced friction of granting and managing consent through the CC Solution. However, the progress made by industry, Ofgem and government in creating the conditions to allow a flexibility market to flourish are such that the CC Solution can only be counted as an enabler, rather than a direct driver. This utility was highlighted in the Clean Flexibility Roadmap, which has a named action specifying RECCo delivery of the CC Solution.[52]

3.67 In order to calculate the percentage value attributable to the streamlining and standardisation of obtaining and managing consent, and the concomitant reduction in friction for flexibility service providers and consumers in a nascent market, we have consulted with workstream experts and considered the expected increased uptake from RECCo figures.[53] To account for optimism bias, we have considered the cost saving to be two orders of magnitude less than the overall benefit calculated for flexibility markets through reduction in system costs. This consideration is based upon the expected lowering of friction generated by the CC Solution which will enable flexibility markets. These savings will be achieved through enabling the flexibility markets to grow through more efficient consent arrangements, resulting in reduced generation build and system build, as described above.

Table 3.10 – showing overall reduction in costs of system build achieved by flexibility and percentage enabled by CC Solution

Reduction of system costs – 2025 to 2050	Yearly cost reduction	Percentage attributable to CC Solution	Benefit attributable to CC Solution
£40-£50bn[54]	£1.6-£2bn	1%	£16-£20m

3.68 This analysis shows the claimed benefit from this solution as £400m-£500m in the years leading up to 2050, meaning **an expected annual benefit of £16m-£20m.**

3.69 These calculations are based on the reduced system costs, meaning they are not direct benefit to individual consumers, unlike the previous analysis of direct benefits. These benefits will be 'smeared' equally across all consumers through transmission, distribution and generation costs. As a result, the gains are not proportionally progressive by income decile, as the direct benefits are described

[52] Action 45 on page 72 of the Clean Flexibility Roadmap
[53] RECCo Business Case 2025: Consumer Consent Service
[54] Taken from the ENSF from DESNZ - Electricity networks strategic framework - GOV.UK

in paragraphs 3.50 – 3.52. Consequently, we are not weighting the benefits in the same way but treating as equal benefit across all households.

Smart Meter Rollout

3.70 The CC Solution is being developed, as part of the MMP, to allow the consensual sharing of smart meter data specifically. While the system is designed to iterate into further datasets in future, this IA is focused on the benefits of MMP only. Necessarily, this focuses on the holistic use of smart meter data. Similar to the flexibility analysis above, we have taken that approach that it is impractical to calculate the individual take-up of sharing SM data on a household-by-household basis, due to the number of variables in circumstances.

3.71 Benefits from the smart meter rollout are assigned in the most recent Smart Meter Rollout IA as positively impacting the following areas:[55]

- Consumers – through lower bills and greater energy efficiency
- Suppliers – through ease of settlement and greater visibility of demand
- Demand Shifting – through enabling flexibility services and allowing consumers to shift their consumption temporally to reduce peak costs and time of use tariffs.
- Networks – through reducing peak demand, increasing resilience, and reducing the need for network build to cover intermittency
- Carbon and air quality – through the above benefits reducing reliance on higher carbon technologies.

3.72 To avoid 'double counting', not all categories of benefit discussed in the Smart Meter Rollout IA have been included as indirect benefits of the CC Solution. This is because those benefits have already been accrued to the CC Solution, namely Consumer benefits (accounted through direct benefits); Demand Shifting (accounted through indirect benefits); and Network (accounted through indirect benefits).

3.73 The following table shows the figures from the 2019 Smart Meter Rollout IA, the most recent figures on the matter, as well as whether that category of benefit has been removed from consideration:[56]

Table 3.11 – Total benefits from Smart Meter Rollout 2019

ID	Named Benefit	Value (£m)	Removed from consideration as previously counted
1	Consumer Benefits	£7,623m	Yes (discussed in direct benefits)

[55] Smart Meter Roll Out Cost-Benefit Analysis
[56] Smart Meter Roll Out Cost-Benefit Analysis

2	Supplier Benefits	£8,071m	No
3	Demand Shifting Benefits	£1,363m	Yes (already discussed as an indirect benefit)
4	Network Benefits	£374m	Yes (already discussed as an indirect benefit)
5	Carbon and Air Quality Benefits	£2,026m	No.

3.74 As previously discussed, it has been established that the CC Solution will have the greatest benefits for consumers and the system through the enabling of flexibility service providers, and these benefits have already been addressed in previous analyses. Benefits to suppliers and to carbon and air quality, however, have not been accrued to the Solution previously and are calculated here.

3.75 In considering what percentage of Supplier and Carbon and Air Quality benefits should be legitimately attributed to the CC Solution; we consulted with experts in the smart meter rollout programme to inform our estimations.

3.76 When considering Supplier benefits, we started from the baseline of the 1% attributed to the enabling of flexibility services provision (paragraph 3.63). However, we were cognisant that many suppliers may already have existing consent mechanisms and access to consumers' consent profiles. As a result, the efficiency and access benefits to incumbent suppliers will be less than that accrued by non-supplier participants in the CC Solution. To acknowledge this, we reduced this benefit by a further order of magnitude, resulting with a benefit attributed to the CC Solution that is three orders of magnitude smaller than the benefit calculated for the entire Smart Meter Rollout programme, a 0.1% attribution.

3.77 Regarding carbon and air quality benefits, expert advice indicated that the established approach of two orders of magnitude lower than the value attributed to the whole Smart Meter Rollout was appropriate, leading to 1% of the total being attributed to the CC Solution.

Table 3.12 – Counted benefits from Smart Meter Rollout 2019 accruable to CC Solution

Benefit	**Value**	**Percentage Accrued to CC Solution**	**Value Accrued to CC Solution**
Supplier Benefits	£8,071m	0.1%	£8.1m
Carbon and Air Quality Benefits	£2,026m	1%	£20m

3.78 On this basis, we can assign £28.1m of indirect benefit from the greater uptake of smart meter rollout to the reduced friction and increased enabling of the CC

Solution. This figure is, however, across the lifetime of the smart meter rollout, rather than on an annual basis. As such, we have split this cost evenly across the post-MMP period, giving an annual figure of **£4.01m**.

3.79 Overall, flexibility to the energy system which will be enabled by the CC Solution will benefit those who choose not to share energy data. Whilst this cannot be considered a direct benefit of the CC Solution, it is an important indirect benefit that should be considered when evaluating the Solution as a whole.

Total benefits

Table 3.13 – Total estimated benefits – RECCO indicative design costs and estimated industry costs with confidence ratings.

Consumer Consent	Annual benefit	Confidence rating
Direct benefits	£8.9m – 69.8m	High
Indirect benefits	£20.01 – £24.01m	Medium
Total Benefits	£28.91m - £93.81m	Medium-high

Result of Cost-Benefit Analysis

3.80 The factual scenario of this IA is wherein the decision reached by Ofgem in April 2025 takes place – and RECCo Ltd delivers a technical solution to Consumer Consent following the timelines initially set out in the April 2025 decision and now refined through working groups to release the MMP on 31 March 2027. We have, in the previous sections, calculated costs and benefits, and outlined the assumptions we made and sources we relied upon in garnering these figures.

3.81 From the results of the Cost-Benefit Analysis, costs presented in Table 3.3 and benefits in Table 3.13, we have calculated a Benefits to Costs Ratio (BCR) for each scenario. This displays the total expected cost and benefit. The timeframe for this calculation has been limited to 2025-2033 in line with the Clean Power Plan, giving a three-year margin to demonstrate functionality following the 2030 deadline. However, the CC Solution is intended to be an enduring feature of the

energy sector and will continue past 2030, thus we have intentionally not time-bound this analysis.

3.82 Due to the future-looking nature of this analysis and the inherent unpredictability of the transitional period of the energy system, all costs and benefits have been recorded as ranges. Both the CBA and Break-Even Point (BEP) have been calculated according to three potential scenarios:

• Average or expected scenario – Industry costs and solution development and operational costs are based upon the midpoint figure for each range. The direct benefits are based on the midpoint of the High/Low Uptake and High/Low Savings ranges, and the indirect benefits are calculated on the midpoint of the calculated range, sharing delivery assumptions with those existing IAs.

• Worst case scenario – Industry costs and solution development and operational costs are based upon the highest figures for each range. The direct benefits are based on the Low Uptake and Low Savings range, and the indirect benefits are calculated as 20% of the lowest range, based on effective non-delivery assumptions contained in those existing IAs.

• Best case scenario – Industry costs and solution development and operational costs are based upon the lowest figure for each range. The direct benefits are based on the High Uptake and High Savings range, and the indirect benefits are calculated on the highest of the range, sharing delivery assumptions with those existing IAs.

3.83 Indirect benefits, calculated originally as annual benefits, have been split progressively across the post-MMP period to best simulate the accrual of benefits after the delivery of the CC Solution.

Table 3.14 – Analysis of BCR for three scenarios

Scenario	Benefits	Costs	BCR	Key considerations
Average or expected scenario	£345.92m	£86.48m	4.0	Midpoint of costs range, low end of benefit range (to avoid optimism bias).
Worst case scenario	£100.49m	£101.27m	0.99	Highest estimates for costs, 20% of lowest benefit estimate.

Best case scenario	£564.38m	£71.69m	7.87	Lowest estimates for costs, lower estimates for benefits (to avoid optimism bias).

Monetised Break-Even Point (BEP) Analysis

3.84 Similar to the CBA and BCR we have, in the previous section, calculated costs and benefits, and outlined the assumptions we made and sources we relied upon in garnering these figures. These have been broken down into the three scenarios covered in paragraph 3.78. In order to calculate the Break-Even Point (BEP), we have added the aspect of time to these calculations. Necessarily, we considered the aspect of speed of uptake in addition to the High/Low Uptake scenarios described in paragraph 3.43.

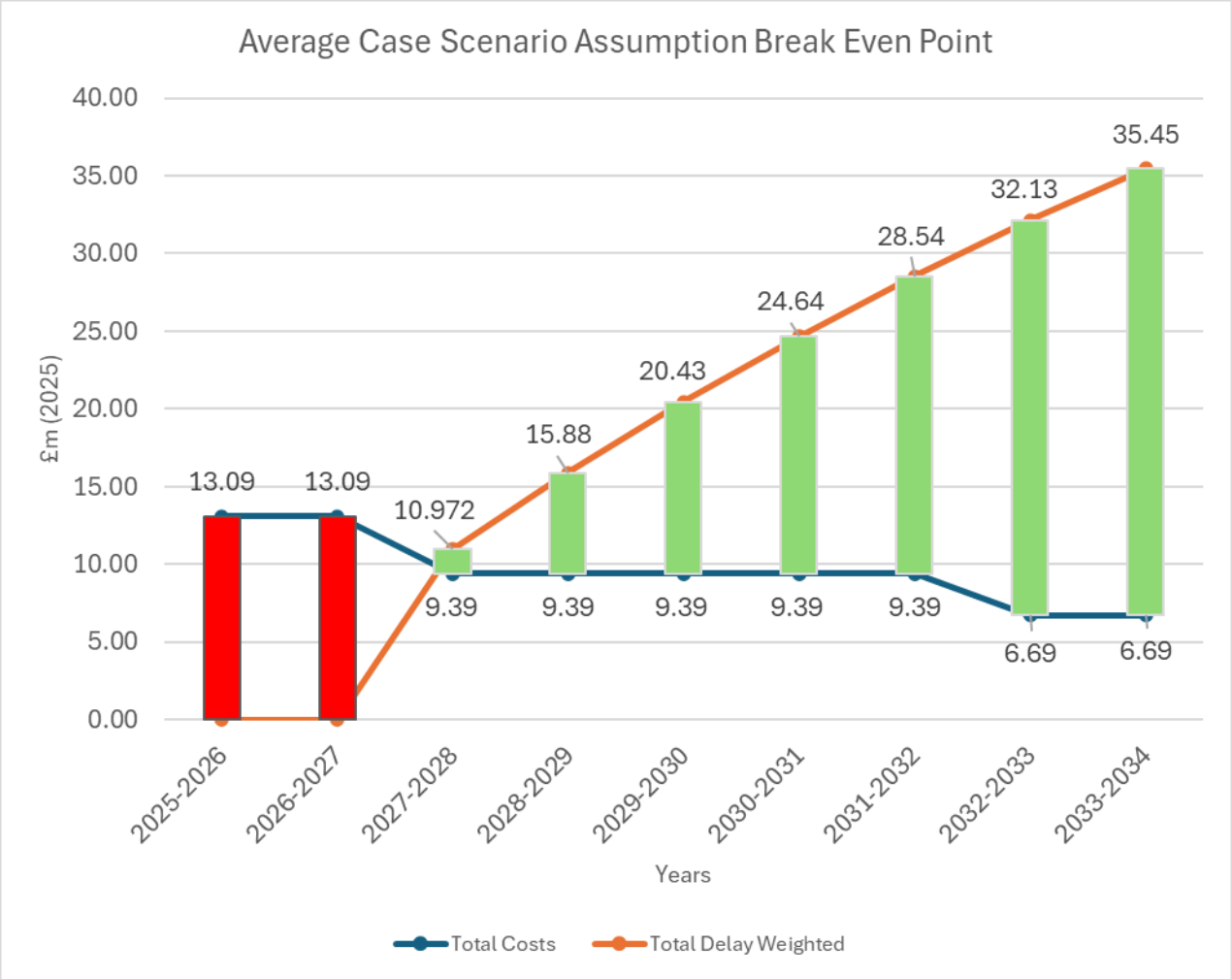
3.85 In order to account for staggered take-up of the CC Solution, we initially calculated the total benefits – direct and indirect – and weighted them at 20% for the first year, with a 10% increase in measured benefit for each subsequent year. This ensures that modelling reflects the time delay expected.

3.86 Benefits were taken from September 2025 prices, with inflation accounted for via CPI (Consumer Price Index) NPV. Cost calculations were similarly inflation weighted. All other assumptions have been detailed in the previous section of this IA.

Average Scenario (Midpoint Assumption)

3.87 The ‘average’ scenario, calculated using the midpoints of all calculated ranges, is considered the most likely scenario. Herein, costs fall in the mid-point of the expected range, as do benefits. Benefits accrued to the CC Solution from indirect source are calculated from the mid-point of the initiatives and policy positions upon which they are predicated, and the assumptions that delivery is within expected parameters are fulfilled.

Figure 1: Average Case Assumption Break Even Point

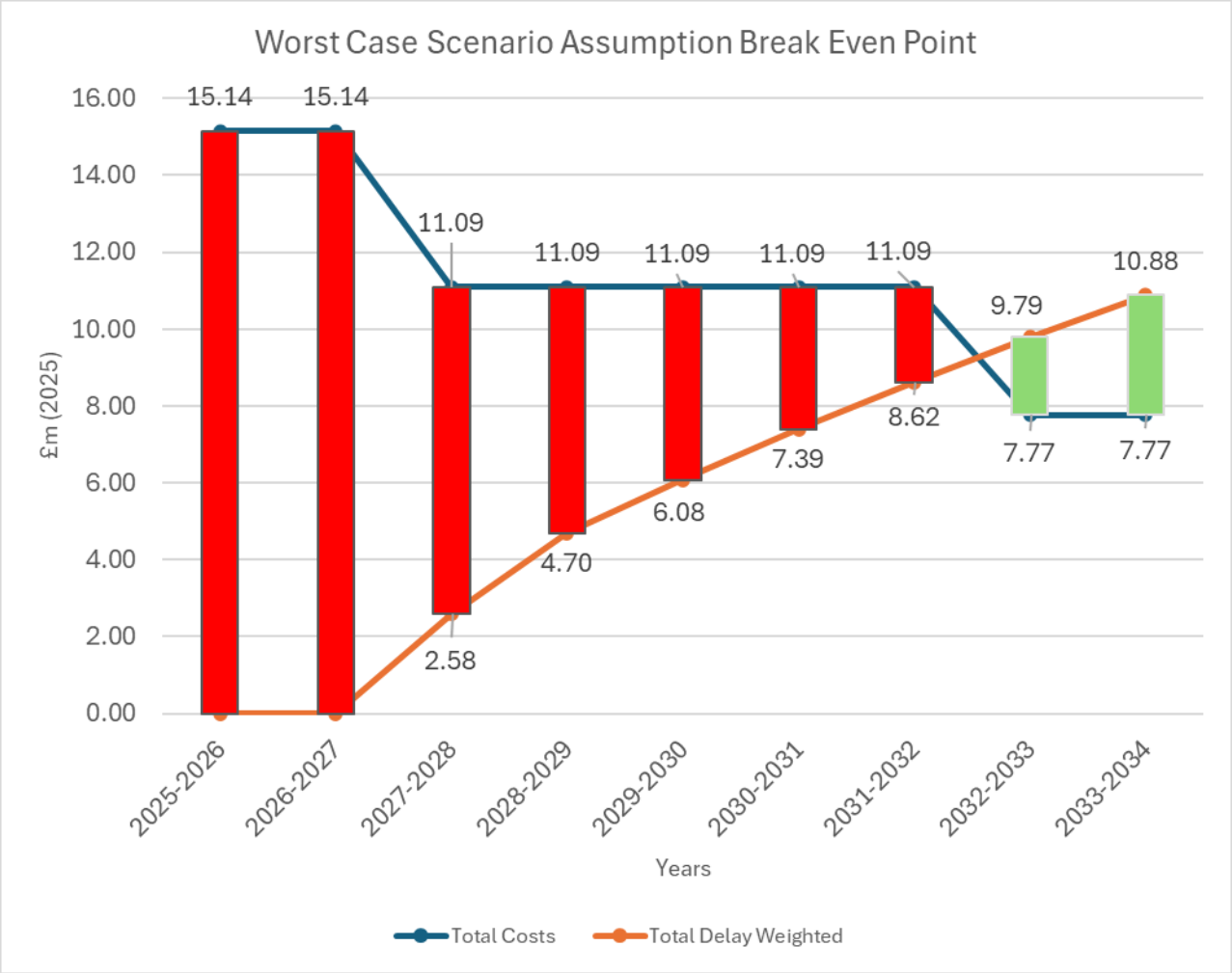


3.88 As the graph shows, the BEP for this scenario is in year three, 2028-2029. At this point, the CC Solution MMP is delivered and working as expected. From 2028 onwards the CC Solution will be generating benefits greater than its costs in this scenario, deemed the most likely on the basis of the assumptions we have listed previously and costings and benefits analysis we have obtained and conducted.

Worst Case Scenario

3.89 The 'worst case' scenario of cost and benefits is based on a Low Uptake, Low Savings range for the direct consumer benefits, solution and industry costs being as high as they could be, and the initiatives and policy positions which generate indirect benefits only delivering 20% of the value expected in their respective IAs. This is the most expensive, least beneficial outcome, and is considered less likely based on the risk and assumption calculations.

Figure 2: Worst Case Scenario Assumption Break Even Point

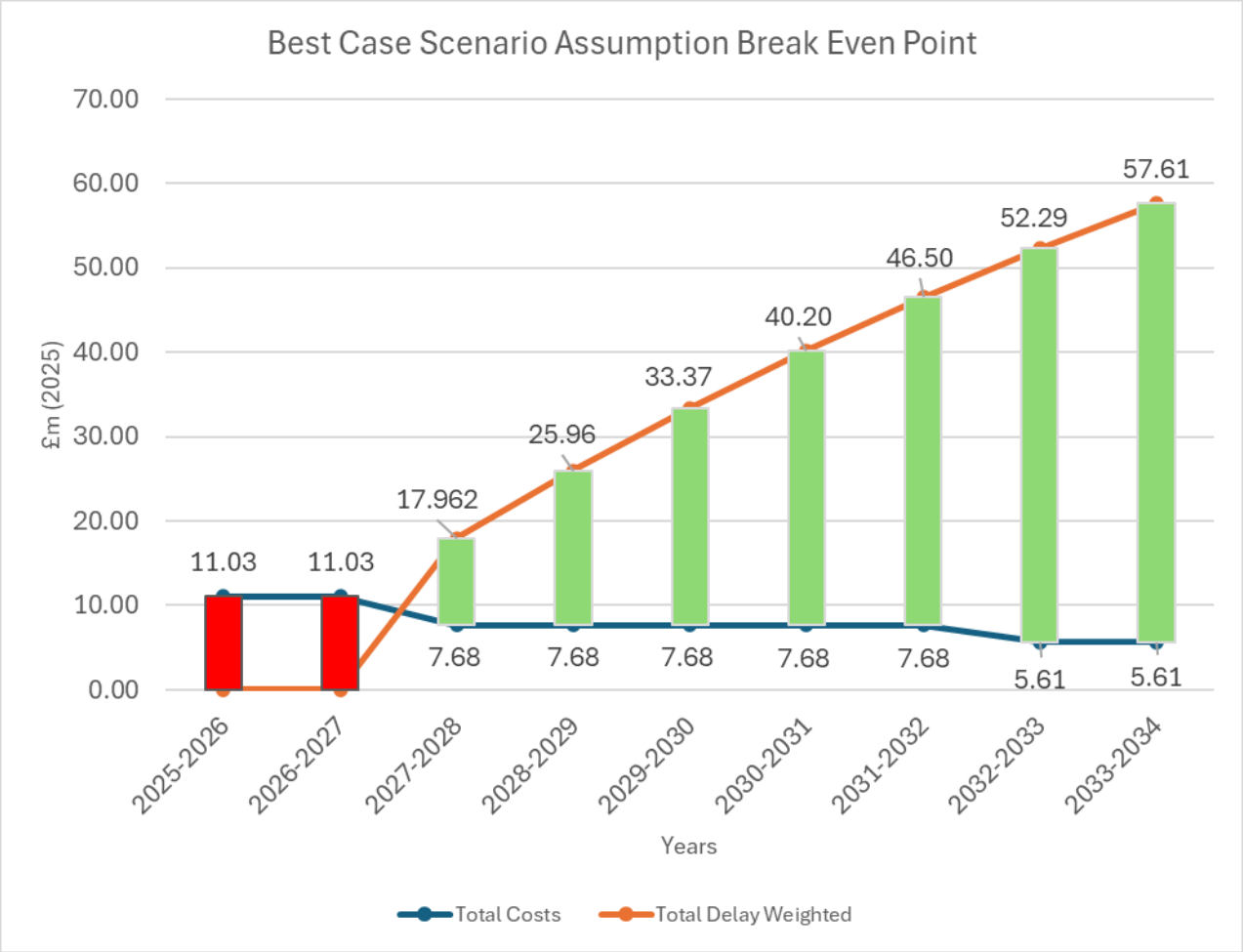


3.90 As the graph shows, the BEP for this scenario is in year eight, 2032-2033. Costs are considerably higher in this scenario, and the low indirect benefits, coupled with the Low Uptake, Low Savings direct benefits means that there is considerable outlay before the CC Solution has greater benefit than costs. In this worst case scenario, however, the BCR is 0.99, and the Solution would not see greater benefit than cost during the evaluation period of 2025-2023, but would be strongly trending towards greater benefit than cost in the future.

Best Case Scenario

3.91 The 'best case' scenario assumes that costs are at the lowest point of their predicted ranges, and benefits are at their highest, and all initiatives which underpin the indirect benefits case deliver at expected levels. We did consider modelling for over delivery of expected indirect benefits but discounted this as presenting a risk of optimism bias. This scenario is predicated on the High Uptake, High Savings direct benefit outcomes.

Figure 3: Best Case Scenario Assumption Break Even Point



3.92 In this scenario the CC Solution has a BEP of year three, 2027-2028. The modelling is similar in pattern to the expected midpoint outcome displayed in the 'average' case scenario, however the scale of predicted benefits is substantially higher, with commensurately higher BCR. This is based on the most conservative estimate of possible benefits evaluated in this IA, to avoid undue optimism bias.

4. Analysis – Qualitative

Section summary

This section covers Ofgem's qualitative analysis of the hard-to-monetise impacts of the CC Solution. These elements warrant mention but do not have robust enough costings to form part of the monetised quantitative analysis. These findings were collated through discussion with industry experts and desk-based research.

Hard-to-Monetise Risks

4.1 The major risks to the CC Solution such as low uptake, low savings potential, and the failure of related initiatives are all covered in the monetisable cost-benefit analysis. However, some risks cannot be monetised but still need to be considered. Chief among these is the increased cybersecurity risk posed by the CC Solution

4.2 As a centralised access point, the CC solution poses some inherent risks by providing a single point of failure for the system. Additionally, the increased data sharing associated with the CC Solution comes with an inherent risk of higher exposure to data breaches. Finally, a new system introduces new dependencies into a system, each of which could be a vulnerability.

4.3 These risks cannot be completely avoided, but they can be mitigated. It must also be considered that the cybersecurity risk posed by outdated legacy architecture and overworked systems that are insufficiently scalable for the volume of data being processed is more significant than the risk of new dependencies.

4.4 The CC Solution has been designed with input from industry experts on cybersecurity, with consideration for stringent, industry standard cybersecurity certifications. This is in line with the overarching government focus on cybersecurity as a key consideration, outlined in the ministerial letter on cyber security.[57] More detail on the cybersecurity considerations specific to the CC Solution can be found in the Technical Design and Security working group paper.[58]

Hard-to-Monetise Benefits

4.5 The key aims of the CC Solution are to increase the power and control consumers have over the data they generate, to make it easier for them to share that data for the good of the whole system and to derive that value, and to decrease the

[57] Ministerial letter on cyber security - GOV.UK
[58] Technical Design and Security Working Group Advisory Paper

informational asymmetry of smart meter data among participants in the energy sector.

4.6 These aims are challenging to ascribe a monetary value to, but merit analysis in any understanding of the impact of this proposed policy position.

Consumer Empowerment and Engagement

4.7 When consumers feel in control, that increases willingness to try new approaches to energy use and will bring hard to engage consumers into the sphere of flexibility and allow for tailored support for vulnerable consumers. Recent instability in the energy markets following the Russia/Ukraine war has left many consumers feeling disempowered when it comes to their energy bills, and this effect is only now beginning to recede, as reflected by consumer surveys.[59] When consumers have greater choice in who sees and who uses their energy data, satisfaction is likely to rise in lockstep with the sense of control.

4.8 CiTA research shows that 92% of consumers think that it is important to be given options to opt out of providing access to their data. CiTA state a "consumer consent portal will help build the trust and confidence that consumers need to engage in the energy market as it transitions to net zero and more consumer data-derived innovative services begin to be offered".[60]

4.9 CiTA found that consumers consistently value the ability to make choices about how much data they share, with the vast majority of consumers saying it is important that they be able to opt-out of sharing detailed energy usage data even as familiarity with the smart meter rollout grows (89% in Smart and Clear [2014] compared to 92% for more recent figures [2024]). CiTA's recent 'Get Smarter' research also found that consumers who are most engaged with smart-enabled products and services value the ability to opt-out most highly. As smart technology becomes more widespread and better understood, the importance of opt-outs and user control will continue to grow.

4.10 Sharing smart meter data has historically been carefully controlled and almost exclusively done through express and informed consent. While the Data Use and Access Act allows for some limited aspects of 'public good' purposes for processing the data, we do not anticipate large scale 'opening up' of this data without consumer consent, nor would we consider that an appropriate avenue.[61] When a consumer chooses to share their data, the value to the system that is derived from the use of that data ought to accrue to the consumer. This value exchange is intended to be both directly, through bill reduction and indirectly,

[59] Energy Consumer Satisfaction Survey: January 2025 | Ofgem
[60] Citizens Advice response to Ofgem consultation on a Consumer Consent Solution Website
[61] Data (Use and Access) Act factsheet: UK GDPR and DPA - GOV.UK

through whole system efficiencies, synergies, and improvements which will lower costs as a whole.

Greater access to data

4.11 There are substantial benefits of greater use and access to smart meter data through informed consent, such as:

- Academic research which has provided greater independence, support and non-intrusive monitoring for the elderly and those living with disabilities, as shown by this 2021 trial from the University of Edinburgh.[62]
- Increased consumer control of data, increased choice, engagement and input to the flexible nature of the changing energy system, which follows the lead set by government in the Planning and Infrastructure Bill.[63] This also creates a standardised way of determining the authoritative ownership of data through creating a standardised methodology for addressing the landlord-tenant question which has been approached in a piecemeal fashion in the energy sector, despite being a significant problem to solve for reliable consent. A definitive answer here will set precedent for other locational based sectors (water, telecoms, housing, etc) to build upon for smart data schemes across sectors.
- Increased symmetry of information and data access. A repeated finding for the Load Controller or Flexibility Service Provider Markets policy research has been that there is asymmetry of information when it comes to consumer data; in terms of the consumption data addressed by the CC Solution, Tariff Data, and Energy Smart Appliances (ESA) data.[64] Flexibility service providers state they have difficulty locating or accessing business critical information that suppliers have ready access to.
- While workstreams are focusing on specific data flows, such as Tariff Interoperability and ESA Standards, the CC Solution is aimed at providing a standardised platform to allow sharing at the consumer's behest, aimed at addressing the overall informational asymmetry of energy data between incumbents and newcomers, intended to foster competition within existing and nascent markets.[65,66]
- Reduced data breaches. The CC Solution is being designed by RECCo with input from the National Cyber Security Centre (NCSC) and from the Information Commissioner's Office (ICO) in addition to the working groups. The expectation

[62] Informatics researchers use smart meters to revolutionise independent living for people with disabilities and older people | School of Informatics | School of Informatics
[63] Households near new pylons to save hundreds on energy bills - GOV.UK
[64] Delivering a smart and secure electricity system: implementation - GOV.UK
[65] Tariff Interoperability Project - Retail Energy Code Company
[66] Delivering a smart and secure electricity system: implementation - GOV.UK

is that this considered development of the solution will reduce the likelihood of data breaches through expert input in the design phase.[67,68] In addition, the centralisation of a consent model will reduce the threat surface area through minimising the risk of the storage and transfer of personal data becoming compromised

- Future projects where the value is not yet directly calculable, such as MHHS, Smart Meter Data Repositories, and Smart Meter Data Schemes.

4.12 These benefits cannot be accurately ascribed a currency value; however, we consider them as part of the wider empowerment of consumers, increased fairness in outcomes and overall consideration of data as holding value.

4.13 Better understanding of demand through shared consumption data will give more granular understanding of demand than the existing aggregated smart meter data provided by networks under Data Best Practice. This additional granularity will provide clarity for day-to-day control room operation, and for requirements and locations of generation build. This clarity will allow greater certainty for investors and provide data to underpin investment strategies.

4.14 There is also scope for the CC Solution to provide a 'refresh' for a number of living labs around the country. Living Labs are toolkits used in academia and by innovators to test products, initiatives, and projects under real world conditions.[69] There is research that a number of the cohorts of living lab data sets – i.e. the data flows from individual smart meters which can be accessed by academics – are from early adopters for the smart meter programme, rather than more recent adopters of smart meters, which runs the risk of skewing data. This has to be manually compensated for. The CC Solution will provide the opportunity to refresh these datasets, with concomitant benefits in terms of academic accuracy and more timely data. The benefits of these projects are challenging to calculate a direct financial benefit, even as a range.

4.15 This increased use of, and value derived from, data and its increasing granularity, however, is part of an ongoing direction of travel in the energy sector, as part of digitalisation work. It is challenging to attribute value of this increasing visibility to one particular workstream, so we have discounted it as part of the monetised analysis, instead considering a hard-to-monetise benefit.

Enabling Other Work

4.16 There is clear benefit to be gained from enabling other projects, both within and outside Ofgem.

Market Wide Half Hourly Settlement (MHHS)

---

[67] National Cyber Security Centre - NCSC.GOV.UK
[68] Information Commissioner's Office
[69] Home | Living Lab

4.17 As the benefits of MHHS have not yet been realised, they were not used to estimate future benefits of the CC Solution to avoid optimism bias. Instead, they have been included as a 'hard-to-monetise' benefit.

4.18 Predicting electricity system outcomes such as the potential for load-shifting through a flexibility market facilitated by MHHS is challenging, given the complexity of systems, change of pace, and the interplay between systemic, technological, and behaviour of consumers in markets. Recent (August '25) changes to the Balancing and Settlement Code (BSC) have allowed flexibility services to be provided before a customer is switched to half hourly settlements.[70] This shows the appetite for flexibility, and for the uses of half hourly data. While there is a clear and detailed IA for the settlement uses of half hourly data, we are of the view that there will be substantial and unforeseen non-settlement uses of the half hourly data from this initiative and expect interactions with the proposed Elexon Smart Data Repository (SDR).[71,72]

4.19 The utility of any smart meter data repository - whether developed and maintained by Elexon, Smart DCC, or through a combination of both – will require consent-based sharing of the data to achieve use of the data outside of a contractually controlled settlement basis. The CC Solution is expected to reduce the friction of this and increase direct utility. However, there is not a published value case for this repository which would allow further development of the analysis. We are therefore counting this as a hard-to-monetise benefit but expect that the value case can be more clearly developed as this workstream advances.[73]

4.20 The calculation range resulting from the MHHS IA analysis is necessarily wide, with potential welfare benefits ranging from £1.2 billion to £3.6 billion by 2045 (in 2018 prices). This represents the wide range of uncertainties around energy system transition. We calculated what of this value could be accrued to the CC Solution and from that point focused on the change in welfare, as opposed to the distributional analysis. While we considered the progressive impact of benefits between income levels of consumers archetypes in paragraph 2.30 and 2.31, we consider distribution of benefits between consumers and producers, unpriced carbon, or interconnector surplus to be outside the scope of this IA, due to the focus on consumers.

4.21 Unlike the smart meter data repository, the overall value case for MHHS is developed and understood through existing IAs which focus on the settlement uses of half hourly smart meter data. The case is made for the positive impact of this, however the development of the additional use cases for non-settlement

[70] P483 Balancing and Settlement Code (BSC) changes | Ofgem
[71] MHHS Final Impact Assessment
[72] P494 Establishing a Smart Data Repository (SDR) - Elexon BSC
[73] Smart Meter Energy Data Repository Programme: Phase 2 project - GOV.UK

uses of half hourly smart meter data – which can be shared on a consent basis and will be facilitated by the CC Solution – are less developed.

4.22 We took a similar approach to the benefits case for the smart meter data repository. We expect that there will be benefits to this work and are ensuring that RECCo and Elexon are aligned in their respective works to avoid siloed development, however the impact is not well enough understood yet to establish a monetised value.

Smart Data Schemes

4.23 Similarly, we are aware of the considerable positive impact which the CC Solution is expected to have on the ongoing word by DESNZ to develop and implement Smart Data Schemes in energy.[74] Any Smart Data Scheme will require a clear, consistent, and scalable consent mechanism to share consumer data which the CC Solution is intended to provide. The benefits case of this workstream is in progress but not yet in a position to allow any monetisable value to be calculated. We have therefore added the expected positive impact to the future Smart Data Schemes to the hard-to-monetise sections.

Net Zero

4.24 The Clean Flexibility Roadmap, as published on 23 July 2025 contains delivery ambitions which underpin the path to Net Zero, as does the NESO publication of the Clean Power 2030 (CP2030) Implementation Plan which informed the DESNZ Clean Power Action Plan.[75,76,77] The potential benefit offered by these schemes will be maximised in a scenario in which the CC Solution is delivered with good consumer uptake and efficacy.

Progressive Policy and Inequality

4.25 As covered in paragraphs 3.50 – 3.52, this policy proposal has been analysed as benefiting consumers progressively. This means that, broadly, those with the least benefit the most. While the specific monetised benefits are detailed in chapter 3, there is a hard-to-monetise benefit to a specifically and intentionally progressive policy which brings greatest yield to those least fortunate. There have been concerns that the energy transition is regressive, in that it risks bringing lower bills and benefits to those able to afford the upfront costs of heat pumps, EVs, and flexibility in their demand, while neglecting consumers who cannot afford the investment in low carbon technologies. The CC Solution aims to address this by 'levelling the playing field'.

[74] Developing an energy smart data scheme: call for evidence (HTML) - GOV.UK
[75] Clean Flexibility Roadmap
[76] Clean Power 2030 Action Plan - GOV.UK
[77] Clean Power 2030 | National Energy System Operator

4.26 Another hard-to-monetise direct benefit is considered to be the greater scope for consented data to be used to identify and work to alleviate fuel poverty. There are an estimated 6.7m households in the UK defined as being 'fuel poor', which represents 24% of all households.[78] The majority of households defined as 'fuel poor' have multiple intersectional financial difficulties, such as council tax arrears, rent/housing arrears, or other debts which cannot be easily reconciled due to the multiple consents to grant to multiple data holders.

Impacts on Network and Systems

4.27 By increasing the consumer led flexibility inherent in the system through reduced friction of data-sharing, the CC Solution facilitates and enables the drive towards less requirement for system build. While managing and balancing the network will, necessarily, become more complicated as part of the decentralised future, the flexibility made possible by CC Solution will allow the network reinforcement needed to decarbonise safely is conducted in the lowest-cost manner possible. While this represents an inherent hard-to-monetise risk in the industry as a whole, the CC Solution will be important in mitigating that risk, providing a benefit.

4.28 In addition to these benefits, we consider that the CC Solution, in conjunction with the smart meter data repository proposed by Elexon, has the potential to map demand data in a more granular way with less assumptions which will allow more data-driven decision making for both grid connections and system management.

Impacts on the Environment and Net Zero

4.29 This policy position facilitates and enables flexibility and the increased adoption of Low Carbon Technologies (LCTs). Both of these are key planks in the Clean Power Plan, and critical components of the ambition to reach a stable, low carbon power system at the lowest cost.

4.30 This facilitation will apply only to domestic smart meter-using consumers in the MMP stage, as non-domestic customers and customers using advanced meters (AM) were deemed out of scope of the initial development. However, subsequent iterations of the Solution, as costed for in the 5-year enduring design and delivery in paragraph 2.17 - 2.19, are intended to expand to non-domestic consumption.

Impacts on Growth

4.31 In addition to supporting existing data-driven businesses, this policy will reduce the friction in obtaining consent for the use of consumer energy data, which is expected to enable new businesses and innovation to deliver novel technologies and services to drive growth as detailed in the Flexibility Roadmap.[79] The nascent

[78] Using smart meter system data for public good | Smart DCC
[79] Clean flexibility roadmap - GOV.UK

flexibility market will see reduced friction and more standardised consent management encouraging growth.

4.32 In addition to this policy proposal fulfilling Ofgem's growth duty by supporting positive growth across the energy and ancillary sectors, there is scope for the CC Solution to provide a template for development into other sectors with similar potential for smart data schemes, as highlighted in the recent DESNZ Call for Input.[80] The impact of such schemes is outside the scope of this IA, however expected to be broadly net-positive in growth terms.

4.33 At a more fundamental level, the design and development of the solution, as planned by RECCo, is based around procuring services from external providers, creating growth in data and technology-adjacent service providers.

Other impacts

4.34 In addition, it is expected that there will be secondary and tertiary benefits which are outside the scope of this analysis. These may include a growth in third parties and innovators finding heretofore unanticipated uses for smart meter data. We would expect to see novel interactions with the expected sources of flexibility and demand/load shifting – such as heat pumps, EVs, storage heaters and similar, but given the growth of smart appliances and innovative products to manage the data from these, we anticipate the market to innovate towards greater granularity, all of which will be facilitated and enabled by a clear, trusted, and consistent consent management system.

4.35 While the CC Solution will not be a panacea for these issues, it has been designed to create a framework which is scalable within and without the energy sector and has been designed to contribute to the mitigation of these. Having a standardised way to grant consent in the energy sector will facilitate work across other sectors, such as social housing, water, telecoms, and more.[81] There is potential for the CC Solution to create a template for other sectors to follow, increasing standardisation and interoperability for future Smart Data Schemes across sectors, however that is outside the scope of this IA.[82]

[80] Smart Data - Government Response
[81] Smarter regulation: delivering a regulatory environment for innovation, investment and growth
[82] CDEI and DBT smart data research - GOV.UK

5. Monitoring and evaluation

Section summary

This section details the monitoring activity that will be taken to evaluate the success of the CC Solution, including the criteria against which it will be measured, any potential negative outcomes to monitor, the timeline, and details of the current proposed monitoring system.

5.1 The monitoring and evaluation of this proposed policy will be conducted by way of a review of effectiveness and efficiency compared to stated aims in Summer/Autumn 2028. This time period has been chosen to test the MMP, following delivery and bedding in period. Evaluation design will be based on Magenta Book principles.[83]

Success criteria for evaluation

5.2 The key objective of the CC Solution is to empower consumers with low friction control over who can access and use their energy data and enable greater utility of that data for the good of the whole system.

5.3 In the first instance, this would be measured by engagement metrics and through consumer engagement. These metrics will be available as part of the digital solution. In the first instance, we will ensure the solution captures:

- Numbers of consumers granting consent
- Numbers as a percentage of total consumers
- Frequency of data sharing
- Purposes of data sharing
- 'Repeat customers' using the solution for multiple purposes
- Numbers of consent seekers and their roles in the energy sector

5.4 For the greater utility of energy data and the improvement of decentralisation, the objectives held in the Clean Power 2030 Action Plan would be considered the first success criteria, with others being developed by Ofgem and RECCo across the life of the project.

5.5 These success criteria would need to be contrasted with the counterfactual scenario and would require that measured benefits have clear attribution to the CC Solution. In addition to measuring the success of the Solution against the estimates provided in this IA, we will gather data against the metrics listed above as part of the upcoming Request For Information (RFI). This data will supplement

[83] The Magenta Book - GOV.UK

this IA, providing a concrete point of comparison against which to evaluate the implementation.

5.6 The RFI is being undertaken to support the development of the solution and associated licence condition, allowing us to fully understand the full landscape of how consents are presently managed by suppliers.

5.7 Rigour in assessing causation as opposed to correlation will be a key part of the monitoring process and will require control for variables. While we will not be able to have active validation of the counterfactual, we will model based against best understanding of this.

5.8 The monitoring framework will also need to account for secondary objectives, including the facilitation of net zero objectives and reduction of carbon. In addition, monitoring will compare the required network build in a CC Solution-enabled world to modelling conducted by NESO and DESNZ covering the additional network build required in world without enabled flexibility.

Potential negative outcomes to monitor

5.9 In terms of negative outcomes, the primary potential negative outcome to monitor for would be low uptake. Engagement metrics will be key in understanding this risk, which is intended to be mitigated through consumer information and engagement. If the CC Solution is not trusted, or not adopted by consumers, the effectiveness of the proposed policy will be sharply reduced.

5.10 Secondary to this, a potential negative outcome would be that we have underestimated costs. During development, there is a clear governance and performance management framework through the RECCo Performance Assurance Framework (PAF) and Steering Committee, as well as Ofgem oversight. However, the cost to industry has been necessarily estimated. Monitoring will continue to engage with industry, particularly supply licensees, to understand these costs.

5.11 We will consider the most suitable cadence and method of obtaining this information, whether through existing retail monitoring, or a bespoke group or RFI. Current thinking is that existing monitoring could be adapted to reduce the regulatory burden that would come from a bespoke RFI. We will agree the most suitably way of examining and recording costs to industry in collaboration with supply licensees as part of the forthcoming consultations on amending supply licences as announced in the Consumer Consent Decision.[84]

5.12 A final, and significantly less likely, potential negative outcome is that vulnerabilities or poor design in the CC Solution allows potential bad actors access to consumers or creates sub-optimal outcomes for consumers. The

[84] Consumer Consent decision | Ofgem

solution has been designed with robust controls and a trust framework with clear access controls underpinning this framework, but it is a potential risk that will be considered in monitoring. During the design stages, we have engaged expertise through the Technical Design and Security Working Groups and have monitoring in place through the RECCo Steering Committee and the Performance Assurance Framework[85], which is a tested framework familiar to REC users.

Timeline of monitoring

5.13 During development, interim monitoring will be collated through the PAF and costs controlled via the Steering Committee and an Assurance Body which will be independent of RECCo and Ofgem to ensure delivery efficiency and report costs. This monitoring will help to inform objectives and risks.

5.14 Following deployment of the solution monitoring will align with the reporting and governance functions. These two stages of governance will collect and collate evidence which will feed into the concluding review in Summer/Autumn 2028 which will report on the efficacy of this policy position to Ofgem.

Details of proposed monitoring framework

5.15 In order to ensure the governance of design, delivery and deployment of the CCS is suitably robust, we would consider essential areas of monitoring to include the following:

- Costs: both direct in development of the solution and indirect across wider industry.
- Engagement and efficacy: Uptake and usage of the solution will inform the accuracy of the benefits case proposed in this IA
- Measures: In order to accurately compare results of monitoring, measures must be agreed, specific, relevant, and quantifiable.
- Reporting cadence: a balanced cadence which allows for any required course correction in a timely manner without creating burden on delivery
- Concluding review: All reporting and measures should follow Magenta book principles and support the creation of the concluding review.[86]

5.16 In terms of timeline and cadence of governance, Ofgem is monitoring the progress of RECCo's design team during the development of the CC through regular interactions, working groups, and review schedules for documentation, consultations and decisions. This is supported by the PAF, as described above, and RECCO's Steering Committee.

[85] Link requires REC Login: Performance Assurance
[86] The Magenta Book - GOV.UK

5.17 During the testing and deployment of the solution, monitoring of costs will be through direct engagement with RECCo, on a quarterly basis. Monitoring of uptake of the solution, engagement, and uses the data is put to will be garnered through the solution itself, via API reportage and auditing. We propose that these data points be collated and reported to Ofgem on a quarterly basis, with access to the raw data if required.

5.18 When deciding specific measures, Ofgem has had bilateral engagement with RECCo as well as canvasing industry opinion and considering the responses to the draft IA. Specific measures will be finalised following the results of the design consultation, once specifics of the solution are agreed. These discussions will also finalise the thresholds for concern and thresholds for exceeding expectations for each measure.

6. Conclusion and next steps

6.1 The cost benefit analysis presented for the implementation of the Consumer Consent Solution shows, in the average scenario, expected benefits of £345.92m to expected costs of £86.48m, representing a BCR of 4. The alternative scenarios posited and tested through risk analysis showed that even in the worst case scenario, representing multiple initiative underdelivering, lowest possible uptake and bill reductions, and highest costs, this policy proposal maintains a BCR of 0.99 over the calculated time and would show – on the predicted uptake – net positive benefits outside of the analysed period.

6.2 In the event of the best case scenario, the BCR is calculated to be 7.87 over the relevant time period, showing the benefits outweighing the costs to a substantial degree, even with conservative assumptions about the 'best case' benefits.

6.3 Under the worst case scenario, the CC Solution would not cover its costs until after 2030 and would – in this unlikely scenario – be unlikely to contribute meaningfully to net zero and its interim targets in the relevant time frame. This scenario is predicated upon near-total non-delivery of not only the CC Solution but also all related initiatives contributing to a low-carbon energy system and is not considered a likely outcome. The cost of the CC solution is relatively low in comparison to other initiatives currently aimed at decentralising and decarbonising the energy system, and the potential benefits are significant and progressive in their impact.

6.4 In considering the merits of the CC Solution over and above the financial impact it has, and the progressive nature of that impact demonstrated through the distribution analysis of the direct benefits, the hard-to-monetise benefits are also significant. Consumers will feel more in control of the data they generate, will feel more able to participate in the energy system, and the generational change currently underway. We are moving from a unidirectional energy system where consumers are passive recipients of energy, to one where a consumer has choices, those choices have an impact, and those impacts have a clear and measurable benefit to both the consumer, and to the wider system.

6.5 This analysis of the potential impacts, both positive and negative, of this policy position has endeavoured to weight the likelihood of each outcome and conduct risk analysis to test the assumptions underpinning the calculations. Where appropriate, benefits which could have been counted have been discounted to avoid optimism bias, and stringent applicability criteria have been applied to ensure rigour in analysis.

Appendices

Index

Appendix 1: Analysis of previous research

List of Studies

- Ofgem. (2021). MHHS Final Impact Assessment. https://www.ofgem.gov.uk/sites/default/files/docs/2021/04/mhss_final_impact_assessment_final_version_for_publication_20.04.21_1_0.pdf

- DESNZ, (2022). Smart Meter Roll Out. https://assets.publishing.service.gov.uk/media/5d7f54c4e5274a27c2c6d53a/smart-meter-roll-out-cost-benefit-analysis-2019.pdf

- Department of Business Innovation & Skills (April 2011). Impact assessment Mi Data. https://www.legislation.gov.uk/ukia/2013/1048/pdfs/ukia_20131048_en.pdf

- DESNZ. (2021). Smart Meter Policy Framework Post 2020. https://assets.publishing.service.gov.uk/media/60bf3de6d3bf7f4bcc065256/Impact_Assessment.pdf

- LCP Delta. (2024). Smart Metering Consumer Impact Report. https://www.uregni.gov.uk/files/uregni/documents/2024-10/Smart%20Metering%20Consumer%20Impact%20Study%20Report%202024.pdf

- National Audit Office (2018). Rolling Out Smart Meters. https://www.nao.org.uk/wp-content/uploads/2018/11/Rolling-out-smart-meters.pdf

- Department of Work and Pensions. (2022). Pensions Dashboards Impact Assessment. https://www.legislation.gov.uk/ukia/2022/81/pdfs/ukia_20220081_en.pdf

- Ofgem. (2023). Consumer Impacts Impact Assessment. https://www.ofgem.gov.uk/sites/default/files/2023-10/Consumer%20Standards%20-%20Impact%20Assessment%20_0.pdf

- BEIS.2022. Energy Security Bill Summary Impact Assessment. 2022-05-30-RPC-5173_1__Energy_Security_Bill_Summary_IA__003_.pdf

- DESNZ. (2023). Energy Bill Summary Impact Assessment. https://publications.parliament.uk/pa/bills/cbill/58-03/0295/SummaryImpactAssessment.pdf

- Ofgem. (2024). Regional Energy Strategic Plan policy framework Draft Impact Assessment.
  https://www.ofgem.gov.uk/sites/default/files/2025-02/Consultation-on-RESP-Impact-Assessment.pdf

- Skidmore, C. (2023). Mission Zero: Independent review of net zero. Department for Business, Energy & Industrial Strategy.
  https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachme nt_data/file/1128689/mission-zero-independent-review.pdf

- McKinsey Global Institute. (2022). The net zero transition: What it would cost, what it could bring. McKinsey & Company.
  https://www.mckinsey.com/capabilities/sustainability/our-insights/the-net-zero-transition-what-it-would-cost-what-it-could-bring

- Baringa Partners LLP. (2019). Future world impact assessment. Energy Networks Association.
  https://www.energynetworks.org/assets/images/Resource%20library/ON19-WS3-Baringa%20Future%20World%20Impact%20Assessment%20report-PUBLISHED%20060319.pdf?1766537981

- Yunusov, Dr Timur., Torriti, Dr Jacopo. (2021). Distributional effects of Time of Use tariffs based on smart meter electricity demand and time use activities.
  https://research.reading.ac.uk/sbe-news-and-events/wp-content/uploads/sites/122/Unorganized/Distributional_effects_of_tou-FINAL_v2.pdf

- Ofgem., Pwc. (2020). Energy consumers' experiences and perceptions of smart 'Time of Use' tariffs.
  https://www.ofgem.gov.uk/sites/default/files/docs/2020/09/experiences_and_perceptions_of_smart_time_of_use_tariffs_0.pdf

- US Department of Energy. (2019). Customer Acceptance, Retention, and Response to Time-Based Rates from the Consumer Behavior Studies.
  https://www.energy.gov/sites/prod/files/2016/12/f34/CBS_Final_Program_Impact_Report_Draft_20161101_0.pdf

- Ofgem. (2024). Ofgem energy consumer archetypes update 2024. Centre for Sustainable Energy.
  https://www.ofgem.gov.uk/sites/default/files/2024-02/Ofgem_archetypes_update_2024_FinalReport_v4.1.3.pdf

- White, Alison. (2021) Investigative Report Open Banking. https://assets.publishing.service.gov.uk/media/6156c8fee90e071979dfeb2d/Independent_report.pdf

- Department for Business and Trade. (2024). Regulatory Powers for Smart Data. https://bills.parliament.uk/publications/56550/documents/5223

- Baker, Kristin. (2022). Open Banking Lessons Learned Review. https://assets.publishing.service.gov.uk/media/62908644d3bf7f036ebf5880/CMA_OB_Lessons_Learned_Review.pdf

- DESNZ. (2024). Smart Secure Electricity Systems Programme: Energy Smart Appliances. https://assets.publishing.service.gov.uk/media/6659f0147b792ffff71a8601/smart-secure-electricity-systems-2024-energy-smart-appliances-consultation.pdf

- Energy Systems Catapult. (2022) Energy Data Taskforce Report. https://es.catapult.org.uk/project/energy-digitalisation-taskforce/

- RECCO. (2025). Business Case. Consumer Consent Service. https://www.retailenergycode.co.uk/fs/wp-content/uploads/2025/02/FV-RECCo-Business-Case-2025-Consumer-Consent-Service.pdf

- WHICH. (2024) Customer Service Counts. https://www.which.co.uk/campaigns/customer-service-counts

Appendix 2: Previous Relevant IAs

Market-wide Half-Hourly Settlement: Final Impact Assessment

Smart Meter Rollout Impact Assessment

Smart Meter Impact Assessment

Online Banking Lessons Learned Review

Appendix 3: Frequently asked Questions

Frequently asked questions about the Consumer Consent Solution can be found here.

Appendix 4: Consumer Consent Glossary

A glossary for the Consumer Consent Portal can be found here.

Appendix 5: Consumer Consent Digital Newsletters

Published 08 October 2025
Published 10 September 2025
Published 13 August 2025
Published 16 July 2025