Title: Energy Industry Code Reform **IA No:** BEIS051(F)-21-ICE **RPC Reference No:** RPC-BEIS-5077(2) **Lead department or agency:** BEIS **Other departments or agencies:** Ofgem	**Impact Assessment (IA)** **Date:** 22nd December 2021 **Stage:** Final **Source of intervention:** Domestic **Type of measure:** Primary legislation **Contact for enquiries:** codereform@beis.gov.uk

Summary: Intervention and Options

RPC Opinion: Fit for purpose

Cost of Preferred Option (in 2020 prices)

Total Net Present Social Value	Business Net Present Value	Net cost to business per year	Business Impact Target Status
-£16m	-£16m	£2m	Non qualifying provision

What is the problem under consideration? Why is Government action or intervention necessary?

The CMA and consultation evidence shows that the 10 unique codes that govern the energy system lack strategic direction and are costly for firms to engage with, particularly for SME businesses which are of growing significance in the energy sector. The current arrangements also allow industry participants to delay or water down proposed changes to the codes that are against their private interests despite being in the interest of the market as a whole, competition, or consumers. Together these problems are likely to act as a barrier to achieving Net Zero at least cost. Government intervention is necessary since structural changes to codes governance require primary legislation.

What are the policy objectives of the action or intervention and the intended effects?

The aim of the policy is to ensure that the energy industry codes promote effective competition and keep pace with technical and commercial developments in GB energy markets, consistent with BEIS and Ofgem's strategic objectives and policies. Intervention seeks to achieve four key outcomes: (i) Code governance should be forward-looking, informed by, and in line with, wider industry and government strategic direction and the path to Net Zero emissions. (ii) The framework should be able to accommodate a growing number of market participants with effective compliance. (iii) Codes should be agile and responsive to change, while able to reflect the commercial interests of different market participants to the extent that this benefits competition and consumers. (iv) Accessibility to the market should be improved by making it easier for market participants to understand the rules that apply to them and what they entail.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

'Do nothing': No changes are made to the existing regulatory framework. Current barriers to competition, participation in code reforms and strategic alignment of reforms remain.

Option 1 (preferred option)[1]: Ofgem takes on new strategic functions for codes, with an enhanced code manager function assigned to a separate organisation(s). Code managers will be regulated by Ofgem via licence. Assuming primary legislation is passed in 2023, this could be implemented from 2024. This is the preferred option due to the benefits which include more efficient and dynamic processes that work more effectively in the interest of consumers, competition, and in the wider context of Net Zero.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** Multiple dates.

Is this measure likely to impact on international trade and investment?		No		
Are any of these organisations in scope?	**Micro** Yes	**Small** Yes	**Medium** Yes	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)		**Traded:** NA	**Non-traded:** NA	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible SELECT SIGNATORY: ..... Date: .....

[1] Other reforms to the current operational framework were considered but discounted at previous stages.

Summary: Analysis & Evidence

Policy Option 1

Description:

FULL ECONOMIC ASSESSMENT

Price Base Year 2020	PV Base Year 2022	Time Period Years 12[1]	Net Benefit (Present Value (PV)) (£m)		
			Low:	High:	Best Estimate: -£16m[2]

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Best Estimate	-		2	16

Description and scale of key monetised costs by 'main affected groups'

The two major costs posed by this policy option are monetised. First, Ofgem are expected to face increased costs of around £2m per year due to increased resource demands to carry out its new strategic functions. Second, the enhanced code manager functions will pose costs to the licensed organisation or organisations – these are expected to be transitionary and passed down to industry parties and further to consumers. This is estimated as an additional £35m per year from 2024 onward, assuming that primary legislation is passed by 2023. This timeline is due to the time taken for Ofgem to tender for (or otherwise select) the code managers.

Other key non-monetised costs by 'main affected groups'

There may be learning and familiarisation costs posed to all participants involved in the codes process which may act to inhibit the rate at which benefits of intervention are realised. For Ofgem and the organisation(s) licensed to carry out the code manager functions, there may be time required before responsible teams have the experience and familiarity with new functions to fully utilise them. For wider industry, time will be required to understand new processes. The time taken to adapt business practices may lead to realised benefits being foregone or delayed.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Best Estimate	-		-	-

Description and scale of key monetised benefits by 'main affected groups'

Only two minor benefits of intervention are able to be monetised. First, industry is expected to save around £0.3m per year in reduced costs of reading and responding to consultations, due to a more efficient and strategically aligned codes process resulting in fewer proposed code modifications that are subsequently rejected. Second, industry is also expected to save around £1.5m per year in reduced costs of workgroup participation due to the increased preparatory work carried out by the enhanced code manager function.

Other key non-monetised benefits by 'main affected groups'

There are several major benefits that have not been possible to monetise. First, a more efficient and strategically aligned code process is likely to reduce the frequency and magnitude of delays to code modifications that are beneficial to consumers, introduce new and innovative technologies, and work towards achieving HMG objectives such as Net Zero. Second, this intervention also intends to reduce the barriers to participation for smaller firms, enabling these firms to better compete in the energy sector.

Key assumptions/sensitivities/risks	Discount rate	3.5

Quantified results are particularly sensitive to the following assumptions estimating the cost of code manager functions: (a) estimates of a current code administrator's (Elexon) costs to perform code manager functions are applicable to other codes and (b) these code manager costs can be isolated from the cost of other activities by assuming costs are uniformly distributed. Finally, (c) it is assumed that a given proportion of code manager activities, illustrated as 30%, are already carried out by code administrators and are non-additional. Implementation of this option is also subject to uncertainty.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: NA	Benefits: NA	Net: NA	NA

[1] A 12 year appraisal period has been used given the base year chosen is 2 years before the expected implementation date, when costs will begin to accrue.

[2] Including illustrative costs of potential secondary legislation decreases the total illustrative NPV to -£280m.

Contents

Evidence Base

Background

1. Much of the operation of the electricity and gas market is underpinned by technical and commercial codes. This final stage IA provides an assessment of the impact that proposed legislative changes of primary and secondary legislation to the governance structure of these codes (referred to in the IA as "industry codes"), which governs Great Britain's (GB's) electricity and gas market.

2. There are currently 10 industry codes, consisting of more than 10,000 pages of text. They are multi-party agreements, overseen by 6 code bodies with varying governance and ownership arrangements. Broadly, each code has a *code owner*, with responsibility for having the code in place; a *code administrator* responsible for the day-to-day running of the code; and a *code panel*, made up of industry experts and code parties who oversee the operation of the code. This includes any code modifications[1] over time that serve to maintain an efficient industry framework, as well as other functions relating to safety, enabling competition, and legal compliance. The code modification process varies across different industry codes. In order to maintain an efficient industry framework, codes are required to change over time; the change process varies across different codes.

3. The proposed areas within the scope of this reform[2] are the:

    - National Grid Electricity System Operator (NGESO) codes (CUSC, GC, STC) and the non-NGESO codes (BSC, REC, DCUSA, DC, SEC, UNC, IGT UNC)[3].
    - Central system delivery functions underpinning energy systems:
        - Smart Metering (delivered by DCC[4]);
        - Gas (delivered by Xoserve);
        - Electricity (delivered by Elexon); and
        - Data Transfer Service (DTS) (delivered by ElectraLink).
    - Electrical engineering standards set out in the SQSS[5], the DC and GC, as well as their subsidiary documents which include P2 and engineering recommendation G98 and G99.

4. The exact costs of the current code administration system are uncertain. Some code administrators also carry out delivery functions as well as other business aspects, making it difficult to isolate the costs of code administration. External estimates vary slightly. British Gas, in their response to Ofgem's 2015 open letter on the further review of industry code governance[6], estimated that across industries under the code administration of the BSC, DCUSA, UNC, SEC, MRA AND SPAA[7], the costs to customers significantly exceeded £10m in 2015. Based on this estimate, a 2017 research paper from the University of Exeter[8] extrapolated the total cost of running the code administration system to be in the order of £20m-£25m a year. This IA relies on analysis produced by Elexon,

[1] "Change" and "modification" are used interchangeably in this document.

[2] Paragraph 3 includes only the areas directly in scope of reform. There are 10 total energy codes, all within scope of these reforms, but there are additional central system delivery functions and standards which are not included; these may be brought into scope in the future if they are likely to have a material impact on the delivery of the strategic direction or the objectives of code governance reform. Further information can be found within Chapter 2 of the Consultation Document at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1004005/energy-code-reform-consultation.pdf.

[3] Connection and Use of System Code (CUSC); Grid Code (GC); System Operator – Transmission Owner Code (STC), Balancing and Settlement Code (BSC),; Distribution Connection and Use of System Agreement (DCUSA); Distribution Code (DC); Smart Energy Code (SEC); Uniform Network Code (UNC);; Independent Gas Transporter Uniform Network Code (IGT UNC); Retail Energy Code (REC).

[4] Data Communications Company.

[5] Security and Quality of Supply Standard

[6] https://www.ofgem.gov.uk/sites/default/files/docs/2015/07/british_gas_response_2_0.pdf

[7] The Retail Code Consolidation Significant Code Review (SCR) has resulted in the MRA and SPAA no longer being in effect as from 1st September 2021, with certain provisions of the MRA, SPAA and certain other agreements being carried over into the REC. https://www.ofgem.gov.uk/publications/retail-code-consolidation-date-designated

[8] https://ore.exeter.ac.uk/repository/bitstream/handle/10871/28455/Governance%20of%20industry%20rules%20and%20%20energy%20system%20innovation.pdf?sequence=1

which estimates the current cost of code administration to be around £30m. Each of these estimates covers only the direct costs arising from code administration, but not their wider impact on industry participants.

Rationale for Intervention

5. In June 2016, the Competition and Markets Authority (CMA) published its Energy Market Investigation Final Report[9]. It identified the current system of code governance as a **barrier to pro-competitive changes**, such as faster supply switching for consumers, and concluded that it is inadequate for delivering major reforms that might be necessary to implement policy decisions or support innovation on a timely basis. The report suggests that this holds back energy sector innovation, and the transition to a cleaner, smarter energy system.

6. The need for a responsive and coordinated code governance system has since become more imperative in the context of HMG's commitment to net zero by 2050. Increasingly, policy solutions require a whole-system perspective and changes across multiple codes (e.g., Faster Switching, Half-Hourly Settlement). Further, there is growing industry consensus that action is necessary to create a regulatory framework capable of delivering the changes required to move to a clean, smart, and consumer-led energy system, in line with the Energy White Paper[10] and the Net Zero Strategy[11].

7. During its investigation, the CMA recognised that codes contain technical and commercial provisions which require detailed knowledge of the industry, and therefore that industry-led regulation is appropriate to govern and modify such rules in the majority of cases. However, it also noted drawbacks of how existing arrangements work, including how existing governance and code change arrangements have failed to ensure the implementation of important code changes which benefit consumers and/or competition.

8. The CMA also noted that these existing arrangements have created material burdens on industry participants, particularly smaller ones, and this could undermine their incentives or ability to promote change. All code parties face the cost of monitoring changes in government policy, regulation, and industry code developments. However, the fixed costs of compliance are more of a burden for new entrants and smaller parties with smaller customer bases over which to spread these costs. Further costs are involved if a party wishes to try to influence any such changes. The CMA's evidence found that smaller parties did not have the resources to be involved in every code change or even to suggest code changes themselves. For example, Ofgem has estimated that there are around 150 industry panel-type meetings per year, and on average, each code change proposal may require around four working groups (more complex changes will require significantly more)[12]. These working groups and the appropriate preparatory work to participate in them implies proportionately larger cost to smaller firms.

9. In addition, the CMA found that there were several fragmented, complex sets of rules, each with different and un-coordinated arrangements, **creating a significant barrier to entry** and increasing the cost of participating in the market for new entrants such as small generators, aggregators, and other firms with innovative business models. Responses to the 2021 consultation on Energy Code reform[13] supported the findings from the CMA report. For example, research by Xoserve found that participation in modification processes is "dominated by the larger organisations in the energy

[9] Energy market investigation: Final Report, CMA https://assets.publishing.service.gov.uk/media/5773de34e5274a0da3000113/final-report-energy-market-investigation.pdf

[10] See Energy White Paper: https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future/energy-white-paper-powering-our-net-zero-future-accessible-html-version

[11] https://www.gov.uk/government/publications/net-zero-strategy

[12] See CMA working paper on codes: https://assets.publishing.service.gov.uk/media/54f730f140f0b61407000003/Codes.pdf

[13] https://www.gov.uk/government/consultations/energy-code-reform-governance-framework

industry"[14], finding workgroup participation and the raising of proposals is "most prevalent amongst the 'Big 6' supplier / shipper organisations"[15].

10. The code administrators, responsible for code governance, are funded by and accountable to industry. In the CMA's view, they lack powers and incentives to improve the change process and overcome incumbent power. In BEIS's view, the existing arrangement can give rise to a Principal/Agent problem between Ofgem/BEIS (the principal) and industry participants (the agent) who need to implement code changes. The incentives of the agent might not be aligned with those of the principal. This is an example of an **imperfect information market failure**. While a specific policy change requiring changes to industry codes would generate wider benefits to the market, individual industry participants might not directly benefit from such a policy change and therefore have weaker incentives to implement it.

11. The CMA is concerned that under the current regulatory framework, Ofgem has insufficient ability to influence the development and implementation of code change proposals, and that Ofgem is unable to ensure that industry codes keep pace with market developments or wider policy objectives.

12. Without significant reform, changing codes will remain a lengthly process under the current code governance process. The framework was designed around a market structure of the past – where a small number of relatively similar, large, and well-resourced participants were able to reach consensus on rule changes. The benefit of this consensus-based process was that the decision should be acceptable to all group members and have strong support for implementation. But in recent years, particularly with the move to a smarter, more flexible system, the number and diversity of market participants has increased. Conflicting commercial priorities can inhibit the consensus-based decision-making process, meaning that change is slow.

13. In the context of Net Zero and the whole system transformation required in the energy system, the cost of current arrangement may increase due to both the greater magnitude of investment required in the energy system[16] and the increased number of smaller firms[17] entering the market, which are found to be disadvantaged by current governance arrangements which inhibit fair competition. This view was broadly supported in the 2021 consultation, where respondents highlighted the need for policy intervention to enable faster decarbonisation and enable a higher penetration of renewables.

14. These reforms to the energy industry codes are being considered alongside wider changes to the governance of the energy system, such as the creation of a new independent system operator[18] with roles and responsibilities across both gas and electricity. This independent system operator is referred to as the future system operator (FSO).

Rationale and evidence to justify the level of analysis used in the IA (proportionality approach)

15. The approach used in this Impact Assessment is deemed to be proportionate and intends to convey the uncertainty in exact impacts that are inherent to the policy. Detailed consideration has been given to the rationale for intervention and how the options considered meet the policy objectives and key impacts have been identified with their distributional effect considered.

16. The analysis of impacts builds on feedback from both the 2019 and 2021 consultation IAs on codes reform and other sources, to quantify costs and benefits where possible alongside feedback received in the recent 2021 consultation. Where potential impacts remain unquantifiable, we have looked to quote separate analysis, feedback from consultation or referred to existing measures and policies to provide an indication of the potential costs and benefits of the proposed measures and

[14] Included in Xoserve's 2021 consultation response to the previous IA.

[15] Ibid.

[16] The 2021 Net Zero Strategy estimates investment requirements may be up to £400bn by 2050 for generation alone. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1033990/net-zero-strategy-beis.pdf, pg. 99.

[17] This trend in the number of smaller firms participating in the sector is illustrated by tables 8 and 9 below. Looking at electricity in table 8 below highlights that between 2013 and 2020 the number of small and micro businesses each increased by around 300%.

[18] See Ofgem's January 2021 review of the GB Energy System Operator: https://www.ofgem.gov.uk/publications-and-updates/review-gb-energy-system-operation and the government response to the 2021 consultation on future system operation arrangements https://www.gov.uk/government/consultations/proposals-for-a-future-system-operator-role.

strengthen our evidence base. We have also provided an initial assessment of risks, uncertainties and the key distributional impacts that are likely to occur.

Policy objective

17. The aim of this policy is to ensure that the energy industry codes will promote effective competition and keep pace with technical and commercial developments in GB energy markets, consistent with BEIS and Ofgem's strategic objectives and policies. We have identified four key objectives which tackle the fragmentation and lack of coordination between codes, lack of incentive for change, and complexity of the codes landscape:

    - Code governance should be **forward-looking**, informed by, and in line with the Government's ambition and the path to Net Zero emissions, ensuring that codes develop in a way that **benefits existing and future energy consumers**;

    - The framework should be able to **accommodate a large and growing number of market participants** and **ensure effective compliance**;

    - Codes should be **agile and responsive to change**, whilst able to **reflect the commercial interests of different market participants**, to the extent that this benefits competition and consumers; and

    - The framework should **make it easier for any market participant to identify the rules that apply to them and understand what they mean, so that new and existing industry parties can innovate** to the benefit of energy consumers.

18. In addition, the code reform intends to **enable a faster and more effective consolidation of codes** to follow through the prioritisation of code consolidation.

19. To ensure effective monitoring and evaluation, more time-bound sub-objectives are developed below against each objective, outlined in table 10.

Description of options considered

20. The previous Consultation Impact Assessment discussed two options: Option 1, which installed Ofgem as a strategic body with separate empowered code managers, and Option 2, which created an Integrated Rule Making Body (IRMB) within the FSO, that combined the strategic and code management functions[19]. The 2021 consultation IA concluded Option 1 as the preferred option due to shorter implementation timelines and reduced complexity. Additionally, over 80% of respondents to the 2021 consultation viewed Option 1 as the preferable option with no respondents preferring Option 2. As a result, Option 2 has been discounted from further analysis with more detailed justification to be included in the official Government response to the 2021 consultation published alongside this impact assessment.

21. Therefore, only Option 1 is considered in this IA, compared to our 'do nothing' baseline. For the sake of regulatory and legislative simplicity, we have decided that Option 1 will result in an expansion of Ofgem's existing functions rather than the creation of a distinct entity known as the 'strategic body'. This means that the strategic code functions will constitute new roles for Ofgem, rather than a new body that Ofgem is taking on:

    - **Counterfactual – 'Do nothing':** Under this option, no changes are made to the existing regulatory framework for code governance. Currently, the process for code changes varies across codes and most changes to codes are industry-led. As the status quo would be

[19] Prior options considered before the previous IA also included: (i) Ofgem as the strategic body but with oversight function only, i.e., no ability to get involved in the management or delivery of code changes. This option was disregarded due to a lack of flexibility (limited ability for the strategic body to direct code managers) and similarity with what eventually became our preferred option. (ii) FSO as the strategic body with oversight function only, i.e., no ability to get involved in the management or delivery of code changes. This option was discarded due to lack of flexibility, high complexity, and the inability to meet the reform objectives. (iii) FSO as the strategic body with the ability to get involved in the management or delivery of material code changes (as with our preferred option set out in the consultation). This option was discarded due to high complexity and the similarities to our alternative option, as well as concerns over potential conflicts of interest.

maintained, no additional costs or benefits would be generated from this option. The code modification processes would remain as they currently are.

- **Option 1 – Ofgem takes on new strategic code functions (preferred option):** Under this option, Ofgem will be given new strategic code functions, including the ability to establish and regulate (via licence) one or more code manager(s)[20]. Ofgem would be responsible for setting a strategic direction, based on Government policy priorities and current and future trends in the wider energy market, as well as ensuring that the code managers deliver it. Ofgem would also have the option of modifying the codes directly in a limited range of circumstances and decide on code changes that have a material impact on consumers, competition, and the operation of the market. Code managers will take on most of the responsibilities that are currently held by code panels and industry parties, including proposing code changes, leading most of them, and taking decisions on non-material code changes, although final decisions in this area will be subject to further consultation by Ofgem. Code managers will be appointed by Ofgem once a decision on code consolidation has been made and will be accountable to Ofgem via licence.

  For the purposes of this impact assessment, we assume that this option would be implemented from 2024.

Description of costs and benefits

Costs and Benefits of Primary Legislation

22. Primary powers will assign the new strategic code functions to Ofgem and enable it to select and license code managers. However, these powers are enabling and dependent on secondary legislation to enable full implementation of policy reform. Those impacts directly attributable to primary powers and borne before secondary legislation is implemented are detailed below.

Costs

23. Ofgem may incur some initial set up costs associated with its new strategic functions, for example the recruitment of new staff. These are estimated as **up to £2m per year** during set up and are expected to be recouped from industry, in line with Ofgem's current funding system. As there is no strategic function in the current system, the ongoing costs represent additional costs to the status quo.

24. To estimate the additional costs of Ofgem taking on the strategic code functions, we assume, based on consultation with Ofgem, that up to an additional 30 employees are required. This represents an estimated additional 3% of Ofgem's current workforce. Taking the latest available data, we assessed the cost of 30 new Ofgem employees by examining Ofgem's expenditure in February 2015[21], across its Ofgem employees FTE staff, including for external expenditures such as consultancies. Data on Ofgem's full employee costs from its 2014/2015 budget is multiplied by the rate of inflation to give a figure in 2020 terms. The additional 3% rate is applied to Ofgem's budget in 2020 terms to give an estimate of the additional costs to Ofgem of taking on the strategic code functions. We assume that there are no costs associated with procuring additional office space and the grade profile of the additional employees mirrors that of Ofgem as a whole.

25. No other costs were deemed to be attributable to primary powers, however the commitment to new governance arrangements brought forward by primary powers may create some uncertainty for investors.

Benefits

26. There are no major benefits attributable to primary powers given they are primarily enabling. Peripheral benefits may consider improved market confidence given the additional regulatory certainty provided by a decision on policy reform.

Summary

[20] This/these organisation(s) will also take charge of existing roles and responsibilities carried out by current code administrators.

[21] More recent data, e.g. from 2020/21 Annual Reports and Accounts does exist, however this does not offer as good as a breakdown than the 2015 older data. However, at the headline level, the comparison in total expenditure is roughly similar, and thus we assume that using the 2015 would still provide accurate comparison for our analysis.

27. The quantified costs of primary legislation gives a total NPV of -£16 million over a 12-year time horizon beginning in 2022 in the central scenario. Central scenario cost estimates are presented in Table 1.

Table 1: Central scenario additional cost and benefit estimates of Option 1 (2020£, 2022 discounting perspective, 12-year horizon)

Costs	**Annual costs, best estimate**
Ofgem's strategic code function costs	£2m
Total NPV of monetised analysis (12-year horizon)	**-£16m**
BCR of monetised analysis	**-**

Figures are rounded to nearest 100,000 below £5m, 1m below 50m and for all else above, 5m.

Illustrative monetised costs and benefits of secondary legislation

28. Monetised impacts included in this analysis are able to reflect the major costs of policy intervention. However, only smaller, peripheral benefits have been deemed possible to monetise. Therefore, it is important that figures presented here are considered in tandem with the non-monetised impacts below and the strategic case for intervention.

29. A 12-year time horizon has been chosen for analysis, with a base year of 2022, and assuming a 2024 implementation date for Option 1[22].

Costs

Costs incurred relative to counterfactual estimate

30. The establishment of a strategic function represents a new cost as no body currently exists to provide a strategic direction and alignment with government objectives, nor carries out the additional responsibilities that Ofgem will hold, including the selection and licensing of code managers.

31. For the code management function, incurred costs correspond to the additional responsibilities taken on by code managers relative to those currently carried out by code administrators. As outlined in the background to this impact assessment, the exact costs of code administration activities are uncertain. This impact assessment relies on analysis by Elexon which estimate the current cost of code administration to be around £30m based on 2019 data. Whilst it is expected that the additional activities carried out by code managers will impose a new cost, part of this cost is assumed to reflect a transfer, with a proportion of code management activities already carried out by code parties or code administrators. The exact proportion deemed to be a transfer is uncertain and tested via sensitivities, with assumptions outlined in Annex 1.

32. There may also be new transitionary costs associated with the set-up and delivery of the new code management functions and the establishment of Ofgem's strategic code functions.

Option 1: Cost of strategic code functions

33. The ongoing costs of Ofgem delivering its function are estimated at **£2m per year** incurred from 2024 onwards. These costs will have to be recouped from industry, in line with Ofgem's current funding system. This cost estimate is assumed to accrue from the annual wage and non-wage cost associated with the additional 30 FTE Ofgem employees we have assumed, in consultation with Ofgem, would be required to carry out the strategic code functions.

34. The approach to estimating this cost and attached assumption are detailed above in paragraph 24 on, when considering the initial set up costs associated with Ofgem delivering the strategic code functions.

Option 1: Cost of code manager function

[22] Note, this implementation date is illustrative for the purposes of modelling.

35. The shift from code administration to code management will lead to an estimated increase in costs of around £35 million a year from 2024 to the empowered code managers due to the additional responsibilities they will have compared to code administrators[23]. These tasks could include identifying and developing changes to the codes, making recommendations to Ofgem, or prioritising which changes are progressed. These costs are expected to be passed on to industry through charges, with code managers funded in the same way as current code administrators. However, it is expected these charges will be passed through to end-consumers energy bills and not borne by code parties themselves.

36. The enhanced responsibilities of the code managers would help to facilitate change more effectively. Enabling the code managers to propose changes to the code would remove the reliance on industry or on Ofgem initiating ad-hoc Significant Code Reviews (SCRs) to deliver the changes necessary to deliver the energy transition. It would also introduce an explicit role for prioritisation, ensuring a focus on the changes most likely to deliver on the Government's policy or its vision for the energy system. This would speed up the code modification process, more efficiently bringing forward the benefits the code modifications entail.

37. Data provided by a code administrator, Elexon, is used to estimate the additional cost of the code manager function relative to the current system. This data provides a breakdown of Elexon's current costs to carry out roles considered to be code administrator functions and those considered to be code manager functions. However, it is not possible to separate costs considered to be code manager functions from costs considered to be unique to Elexon. In absence of more detailed information, a simplifying assumption is made that costs are spread uniformly between functions considered unique and those considered to be code manager functions. Responses to consultation highlighted the significant uncertainty associated with these cost estimates, which we reflect through sensitivity testing.

38. The current industry-wide costs of code administration, as outlined above, are then scaled by the additional expenditure Elexon spends on its code management functions relative to the expenditure on its code administration functions (158%). This gives an estimate of the additional expenditure required for code management functions to be carried out, provided no code management responsibilities were currently carried out by certain code administrators.

39. However, it is then assumed that a certain proportion of code management responsibilities are already carried out by code administrators, and therefore, intervention would not result in new costs for these. Similarly, the costs could currently be borne by industry and therefore represent a transfer of costs, rather than a new cost. This proportion is illustrated as 30%, however whilst consultation broadly supported this assumption, the testing of this assumption is the focus of sensitivity analysis due to its impact on quantified results. We also intend to use consultation to verify this assumption. The additional costs of the code management responsibilities (£35 million) are reached by applying the 110% multiplier[24] to the estimate of the costs of code administration under the current system.

40. Additional transitionary costs associated with the set-up of code management functions, such as recruitment costs are not fully reflected in this monetised analysis.

Benefits

Counterfactual estimate

39. This section outlines the annual estimated cost to industry of participating in the code change process under the current system. These existing costs arise from industry responding to code change consultation and participating in workgroups, with decisions on modifications ultimately made by the code panels. The respective savings rates outlined below are applied to these current cost estimates to give an indication of the benefits to industry which would be expected from code reform.

[23] Responses to the 2021 consultation found the previous stage IA's estimates to be reasonable and comprehensive, although a number of responses did express views that it was possible that the estimates for code managers may represent a within-industry transfer rather than an additional direct cost from reform. We have tried to mitigate this using a 30% transfer assumption, further tested within sensitivity analysis, however this still reflects a degree of uncertainty surrounding possible overestimate of costs. Given exact arrangements for code managers are yet to be determined until secondary legislation, it is difficult to pin down costs exactly; however, further IAs with accompanying secondary legislation would likely be able to estimate costs with increased certainty.

[24] This figure is achieved by accounting for the 30% transfer costs against the 158% figure of additional costs of code management.

40. We estimate that under the current system, code change consultation responses costs industry around £1.6 million annually. This was estimated by taking data from Ofgem's quarterly Code Administrator reporting metrics to assess the number of consultations for Authority Consent and Self-governance modifications that had occurred in 2019/20 and the average number of respondents for each modification. We then used data provided by code administrators in code change summary reports to estimate the cost of each consultation response by assessing the number of days each consultation response would require and the cost of an industry representative's time to complete the response, with assumed values listed in Table 2. As a simplifying assumption, we assume that effort and costs of consultation responses for all codes other than the Smart Energy Code (SEC) are in line with CUSC, STC, and Grid Code. This has been done due to the availability of data and is tested in the sensitivity analysis. Further, our estimate does not account for time spent by industry engaging with consultations, but which does not lead to a response (e.g., reading consultation documents and choosing not to respond etc.).

41. We estimate that the annual cost to industry of workgroup participation under the current system is around £6.3 million. We assume, in line with the CMA report, that on average each code change requires four workgroups. We also assume, based on Ofgem experience, an average of 10 industry participants per workgroup, though figures do differ across the different codes. These numbers are applied to data provided by Ofgem on the annual number of code change decisions (143 code changes in 2019/2020) to provide an estimate of the total number of workgroup participants per year. This was multiplied by data from code administrators (Table 2) on the effort in days per participant per workgroup and the cost to industry per industry participant per day to give an annual estimate of the current cost to industry for workgroup participation

42. Our estimates do not account for the time spent by industry engaging with consultations which subsequently, do not lead to a response (e.g., those that may read documents, but choose not to respond), given the lack of available data. Similarly, we exclude the costs of those that prepare to participate in workgroups that subsequently do not.

Table 2: Effort and Cost to industry of Consultation response and workgroup participation

Codes	Estimated effort per consultation response (Days)	Estimated effort per workgroup member per workgroup (Days)	Cost per day for industry representative
SEC	3	2	£1,200
CUSC, STC, Grid Code	1.5	1.5	£600

Source: For CUSC, STC and Grid code, data is taken from Final Modification Report of CMP285. For SEC, data is taken from the modification report for SECMP079.

Option 1: Illustrative industry savings to consultation costs

43. Benefits to industry of around £300,000 a year are estimated in the form of savings to current consultation costs. These are expected post-code reform from a more efficient modification consultation process which will lead to savings in effort and cost to industry of engaging in the process. The enhanced role of code managers will relieve some of the material burdens placed on industry as outlined in the CMA report, in the form of reading and responding to modification consultations or contributing to the drafting of legal texts. In addition, it is assumed that modifications which would be rejected or sent back by Ofgem under the current system, would not be proposed under the policy options due to the code manager function ensuring that modifications are aligned with the strategic direction and are of wider benefit.

44. To calculate this saving, the savings rate was applied to current industry consultation costs as calculated above. Our central estimate assumes that code reform results in cost savings compared to the counterfactual, due to a 20% efficiency improvement following intervention. This efficiency improvement is informed by first considering the number of modifications that are currently rejected or sent back to Ofgem, which corresponds to approximately 10% of code modification proposals. It is then assumed that the provision of a clearer strategic direction to codes alongside more preparatory work being carried out by the code management function will reduce the burden on

industry when responding to future consultations. The implications of this figure are tested as part of sensitivity analysis.

Option 1: Illustrative industry savings to workgroup participation costs

45. Benefits to industry of around £1.5 million a year are estimated in the form of savings to current workgroup participation costs. Under the current system, workgroups are made up of industry participants who play a large role in the drafting and refining of modification proposals. Post-code reform we expect modifications to require fewer workgroups due to a more efficient modification process in which empowered code managers will carry out much of the drafting and refining of modifications. However, the exact arrangements for the code change process after reform will be decided by the new code managers.

46. To estimate the scale of these savings, the code reform workgroup cost saving rate, 25%, was applied to the current industry workgroup cost estimate to give an estimate of the annual savings to industry from the decreased number of workgroups. The workgroup cost saving rate is calculated based on the assumption that, post-code reform, the average number of workgroups per modification will decrease from 4 to 3 as the code managers will take on much of the work currently carried out by workgroups. This is only one potential improved efficiency from intervention. Efficiency savings may also occur due to the increased preparatory work taken on by the code manager reducing the effort per workgroup per participant. This is a simplifying assumption made for the purpose of this analysis, with arrangements decided by code managers. This assumption is tested in the sensitivity analysis.

Summary of quantified analysis

47. These illustrative costs and benefits are expected to accrue from 2024. This gives a total illustrative NPV of -£280 million over a 12-year time horizon beginning in 2022 in the central scenario. Central scenario cost estimates are presented in Table 3.

Table 31: Central scenario additional cost and benefit estimates of Option 1, including illustrative costs of secondary legislation (2020£, 2022 discounting perspective, 12-year horizon)

Costs	**Annual costs, best estimate**		**Benefits**	**Annual benefit, best estimate**
Code Manager costs	£35m		Workshop cost savings	£1.5m
Ofgem's strategic code functions costs	£2m		Consultation cost savings	£0.3m
Total illustrative costs PV (12 year)	**£300m**		**Total illustrative benefit PV (12 year)**	**£15m**
Total illustrative NPV of monetised analysis				**-£280m**
Illustrative BCR of monetised analysis				**0.05**

Figures are rounded to nearest 100,000 below £5m, 1m below 50m and for all else above, 5m.

48. As noted above, only the peripheral benefits to intervention have been possible to quantify, whilst all the major costs to intervention have been quantified. Therefore, a full assessment of impacts of policy reform requires non-monetised impacts to be considered in tandem.

Sensitivities

49. The quantified results discussed above rely on several assumptions, and there remains significant uncertainty around the exact costs and benefits of the intervention. To illustrate this uncertainty, 'high' and 'low' cost scenarios have been developed. The primary driver of differences between these scenarios is the cost of code administrators taking on the enhanced functions of code managers, and therefore sensitivities focus on this assumption. A full description of the impact of this change in assumptions is provided in Annex 1.

Sensitivities – Cost uncertainty

50. As outlined in the assessment of monetised costs, there are several uncertainties in estimating the costs of creating new code managers, with their additional responsibilities, relative to those of the current code administrators. These points were further highlighted via consultation response and are that:

    - It is likely that several code management responsibilities are already being carried out by some code administrators, therefore not all code management responsibilities will pose additional costs.
    - It is likely that several code management responsibilities (beyond consultation and workgroup participation) are already being carried out by industry participants, therefore a proportion of code management responsibilities represent a transfer from industry to code managers.
    - Figures provided by Elexon on the cost of code management responsibilities may be higher or lower for other code administrators[25].

51. The uncertainties presented by code manager responsibilities are illustrated in the high and low scenario.
    - The **low cost** scenario assumes:
        i. 50% of code management responsibilities are already carried out by industry or code administrators.
        ii. Elexon's code management responsibilities costs are 20% higher than other industry codes.
    - The **high cost** scenario assumes:
        i. 10% of code management responsibilities are already carried out by industry.
        ii. Elexon's code management responsibilities costs are 20% lower than other industry codes
52. These scenarios also test the assumptions underpinning benefits modelled, as described in table 11 of the annex.
53. The results of modelled high and low scenarios for total illustrative costs and benefits are presented below in Table 4. The monetised illustrative Net Present Value is a net cost of between around £175m to around £460m over the 12-year period analysed. These costs almost entirely reflect assumptions made on how many new costs are imposed on the industry as a result of the enhanced code manager function carried out. As highlighted above, we have only been able to estimate the major costs of this proposal, while only the peripheral benefits have been estimated – this explains why our illustrative monetised estimates present such negative NPVs and low BCRs.

Table 42: Total illustrative costs and benefits of Option 1, with sensitivities (2020£, 2022 discounting perspective, 12-year horizon)

	Low-cost scenario	Central estimate	High-cost scenario
Monetised Costs	£175m	£300m	£460m
Monetised Benefits	£32m	£15m	£3m
Monetised NPV (illustrative)	**-£140m**	**-£280m**	**-£460m**
BCR (illustrative)	**0.18**	**0.05**	**0.01**

Figures are rounded to nearest 100,000 below £5m, 1m below 50m and for all else above, 5m.

Sensitivities – Learning and familiarisation costs

54. The fundamental change to the governance structure imposed by policy intervention is likely to impose learning and familiarisation costs. Ofgem will likely take time to understand how to maximise the effectiveness of their new functions and industry will be required to familiarise itself with how best to engage in new governance structures and understand the content of new governance arrangements. Whilst it is difficult to quantify the familiarisation costs borne by industry, this impact assessment attempts to illustrate the impact of learning costs to monetised analysis via delaying any benefits from

[25] In particular, this was highlighted by consultation respondents operating within the gas sector.

new governance arrangements from accruing for the first 5 years[26] from the assumed 2024 implementation date. Results are shown in Table 5 which indicates a slight worsening in the illustrative NPVs across all scenarios considered.

Table 53: Impact of Learning and familiarisation on benefits (2020£, 2022 discounting perspective, 12-year horizon), including total illustrative costs of Option 1

	Low-cost scenario	Central estimate	High-cost scenario
Monetised Costs 12-year PV	£175m	£300m	£460m
Monetised Benefits	£15m	£7m	£1m
Monetised NPV (illustrative)	**-£160m**	**-£290m**	**-£460m**
BCR (illustrative)	**0.09**	**0.02**	**0**

Figures are rounded to nearest 100,000 below £5m, 1m below 50m and for all else above, 5m.

55. Quantified benefits also vary significantly depending on assumptions of learning costs and other assumptions; however, these are small when compared to costs quantified in each scenario, and as a result are not the focus of discussion here. Further, while the quantified costs outweigh quantified benefits in each sensitivity scenario, it is important to note again that the major benefits from these reforms are still left unquantified. These are discussed in the section below.

Non-monetised costs and benefits

Non-monetised costs

Learning and familiarisation costs

59. There would likely be some costs involved with industry and code managers familiarising themselves with the new framework and adapting business practices to the new arrangements. It is expected learning and familiarisation costs may arise via two main channels:

    a) Foregone benefits if there are delays to the establishment or adaptation to the new arrangements. These have been illustrated above in the Sensitivities section, where the assessment of costs and benefits have been analysed where no benefits accrue to industry for the first 5 years following implementation of these regulations.

    b) Costs incurred to industry and code managers, as these parties familiarise themselves with the new regulations and acclimatise to new responsibilities. These are dependent on the detail of future documentation such as those detailing how Ofgem will appoint code managers. To illustratively assess what the costs to industry participants may look like, given average costs per day for industry representatives can fall in the range between £600 and £1,200 (see Table 2), assuming that it would take 16 total staff hours for companies to read and familiarise themselves to the new regulations, the potential costs may be in the range of £1,200 to £2,400 per company.

Non-monetised benefits

60. The primary benefit of these reforms is the reduced time and effort taken for the implementation of modifications. This also has significant second-order benefits, as the more efficient and effective code modifications will allow the benefits of individual code modifications to be achieved more fully and realised faster. This is thus beneficial for the wider context of Net Zero, whereby current arrangements could result in an increase in the magnitude and frequency of delayed benefits due to the whole system change required in industry, and in the interest of the consumer, even in cases where these interests are not aligned to those of parts of industry. This is because delayed and inhibited code changes under the current system would result in a direct cost to

[26] 5 years has been selected as an illustrative assumption.

industry from increased costs involved in the process, pushing an indirect cost to consumers from relatively higher energy bills.

61. There are also benefits to competition. This proposal should enhance the functioning of code governance arrangements so that code changes that are considered beneficial to the market are not delayed by incumbent firms that would not directly benefit from such changes. This proposal would also reduce the complexity of code governance arrangements, reducing the material burden that currently falls disproportionately on smaller firms. This should lower barriers to entry and participation in the market and give smaller firms more power to influence change.

62. The section on switching values below addresses this by providing an indication of the annual scale of the unmonetised benefits which would be required to outweigh the costs of code reform.

More efficient and consolidated processes

59. The enhanced responsibilities that code managers would be given under these reforms would help to facilitate change more effectively and efficiently. Enabling the code managers to propose changes to the industry codes would remove the reliance on industry or on Ofgem initiating ad-hoc Significant Code Reviews (SCRs) to deliver the changes necessary to deliver the energy transition. This can be expected to speed up the code modification process, bringing forward the benefits that code modifications can generate.

60. Further, generally under the current system any code party is allowed to introduce as many modifications as desired. However, this can often result in multiple modifications being proposed which are very similar, or proposals introduced which are non-compliant or inconsequential. This can slow down processes and result in delays to implementation, leading to foregone benefit. The reforms are expected to introduce an explicit prioritisation function, that would ensure a focus on changes most likely to deliver benefits in line with Government objectives or for consumers. This would facilitate more timely and coordinated change, increasing efficiency by reducing the sometimes significant delays arising from excessive modification proposals.

61. To illustrate the impact of the delays that could occur under the current arrangements, two case studies are provided. Case studies are used as it is not possible to quantify the industry-wide cost of delayed code changes under the current system. This is due to difficulty in quantifying the total number of code modifications with delays due solely to the current code change process, the scale of the benefits delayed, and the length of the delays.

Case Study 1: P272

63. The CMA Report details code modification 'P272'[27]. This is an example of a code modification with clear principles, but which was slow to be enacted. The case study highlights that the current system of constrained self-regulation of the industry codes is likely to inhibit change when modifications are not in the financial interests of larger parties, despite being in the interest of consumers and the market as a whole.

64. Process summary: SmartestEnergy, a small electricity supplier to large industrial and commercial organisations, proposed this modification in 2011, which was approved in 2014, but was not implemented until 2017. The modification was dependent on the implementation of changes to the half-hourly distribution use of system (DUoS) charging regime being completed before April 2014. Before the modification was raised, a subcommittee of the BSC panel[28] estimated that if mandated by 2014, the modification would incur a net benefit of around £50m over the first 5 years.

65. In June 2011, a working group was set up by the BSC panel to consider P272. It carried out an industry impact assessment and held two working group assessment consultations. An alternative proposal was raised by the working group, which was identical to the original, apart from a later implementation date. On 12 January 2012, the working group stated that it was supportive of P272 but concluded that until the issues with DUoS were resolved, implementing

[27] https://www.gov.uk/cma-cases/energy-market-investigation

[28] Balancing and Settlement Code. Under the current system, code panels are responsible for managing codes.

P272 would not be viable. It therefore recommended that P272 and its alternative should be rejected.

66. In March 2012, Ofgem asked the working group to undertake further scenario modelling and provide additional information to better understand and quantify the costs and benefits associated with P272. Based on responses to two consultations, the working group delivered a cost-benefit analysis report of P272 in November 2012. This estimated that the costs would range from around £46 million to £199 million by the end of 2020 and that in the same period benefits of between £71 million and £198 million could be realised by industry.

67. The report said the wide spread of costs was due to the range of costs submitted by suppliers and, to a lesser extent, distribution businesses. The broad range of benefits was due to the uncertainty surrounding the hypotheses and the sensitivity to their assumptions in the cost benefit analysis model. Given the uncertainty surrounding costs and benefits of P272, the BSC panel made its final recommendation that P272, and its alternative, should be rejected at its meeting on 13 December 2012.

68. Following the BSC's panel recommendation to reject both proposals, Ofgem decided to undertake its own regulatory impact assessment and said, in October 2013, that it was 'minded to' approve the alternative modification. Ofgem concluded that, for those impacts it quantified, the proposal was 'broadly cost-neutral' for consumers. However, it considered that its quantitative analysis provided a conservative estimate of the cost savings for consumers, particularly those from demand side response.

69. Issues faced with P272: The modification was likely to have different commercial impacts on different players simply because of the composition of their customer portfolios. One supplier might by chance find itself with a high proportion of customers that are more expensive to serve on a half-hourly settlement basis. Additionally, the costs of the changes might be large and unevenly distributed between suppliers. Incumbents are likely to incur larger direct costs as their IT systems are older and will require major upgrades.

70. The slowing-down of the modification disadvantaged new entrants and small players, whose business models are built on providing new and innovative products, which require settlement processes based on actual data from smart meters.

71. Lessons learned: The modification was dependent on the implementation of changes to the half-hourly distribution use of system (DUoS) charging regime being completed before April 2014. As such P272 may have been proposed too early. More strategic oversight across all codes could have led to better alignment between P272 and related changes in the market and this modification may have been proposed at a more appropriate time.

72. Further along the modification process, workgroups twice recommended rejecting the modification, but Ofgem requested further modelling. This suggests Ofgem and the workgroups were working from different objectives. More alignment between Ofgem and the workgroup could have led to fewer consultations.

73. The current system of constrained self-regulation of the industry codes is likely to inhibit change when modifications are not in the financial interests of larger parties, despite being in the interest of consumers and the market as a whole.

Case study 2: Gas Transmission Charging Review (GTCR)

74. This case study provides an example of a series of modifications in which there are clear misaligned incentives and objectives between Ofgem and the industry parties proposing modifications. Under the current code governance system, industry parties are able to either delay modifications or put forward aspects which are self-interested.

75. Process summary: Ofgem launched the GTCR in June 2013 with a call for evidence to look at the structure of GB gas transmission charging regime. Ofgem completed the review in 2015 and concluded that fundamental changes to the charging arrangements were required to reflect the changing use of the transmission network. Ofgem asked industry to take forward its recommendations for reform alongside implementing the European network code on Gas Tariffs (TAR NC). This culminated in Uniform Network Code (UNC) modification 621 'Amendments to Gas Transmission Charging Regime' being raised. Alongside the original proposal, industry also

raised 10 alternative proposals, resulting in 11 different proposals captured under this modification (UNC621/A/B/C/D/E/F/H/J/K/L). On 20th December 2018, Ofgem rejected the modifications[29], concluding that none were compliant with TAR NC and therefore could not be implemented.

76. In May 2019, 11 new modification proposals under UNC678 were submitted to Ofgem for consideration. Ofgem approved UNC678A 'Amendments to Gas Charging Regime (Postage Stamp (PS))[30] on 28th May 2020.

77. Issues faced with UNC621: The UNC621 process was initiated based on Ofgem direction in November 2015 for industry to fundamentally reform the gas charging methodology to reflect the changing use of the system and implement new EU regulations which had to be implemented by the end of May 2019. After a lengthy industry-led process, 11 proposals were sent to Ofgem and all 11 were rejected on compliance grounds.

78. Several key issues arose with UNC621. While some aspects of the proposals had merit, the non-compliance of any aspect would render the whole proposal non-compliant. In addition, the relevant areas of compliance were arguably open to legal interpretation, resulting in industry participants strategically interpreting different legal provisions to promote commercial interests, though the legal interpretations provided were of little substance. Finally, the non-compliant aspects (e.g., creation of 'interim contracts'; 'transition period'; and 'NTS Optional Charge'), resulted from an industry-wide preference to favour proposals which protected their vested interests (either through delay or implementation of beneficial aspects), at the risk of being deemed non-compliant.

79. Issues faced with UNC678: Of the 11 proposals submitted under UNC678 in May 2019, all but two were rejected on compliance grounds. These were deemed non-compliant despite the reasons for the rejection of the UNC621 proposals being communicated and despite Ofgem stressing the importance of legal compliance. The non-compliance of 9 of the 11 proposals limited Ofgem's scope of options to two, despite extensive industry input into the remaining 9 proposals. Ofgem, however, was still required to spend considerable resource to assess all 11 proposals. Ultimately, the two compliant proposals lacked certain aspects of a charging regime which Ofgem considered of merit, but the modifications could only be approved or rejected as presented.

80. As the whole package of proposals contained in UNC678A was implemented, some areas that Ofgem had signalled as worthy pursuing in its UNC678 decision (e.g., short-haul, higher storage discounts) remained unaddressed and would be subject to future UNC mods. This resulted in a suite of "follow-on" modifications (e.g., UNC727, UNC728, UNC729). The effect has been that users of the NTS have been subject to a significant change in charging methodology between 2019-20 and 2020-21 as UNC678A was implemented, and further significant changes between 2020-21 and 2021-22, as "follow-on" modifications are implemented.

81. Lessons learned: There is no filter to prevent non-compliant modifications from being proposed, increasing the burden to Ofgem, the code administrator, and wider industry. Ofgem is also unable to incentivise industry to develop and raise proposals when deemed necessary for consumers; power is limited to instructing Gas Transporters, but this does not necessarily result in proposals of appropriate quality.

62. These case studies have been chosen to highlight the risks and potential inefficiencies that exist under current market arrangements. As highlighted by consultation response, these do not reflect all code modifications[31].

Greater alignment with HMG strategic direction, consumer interests, and Net Zero ambitions

[29] https://www.ofgem.gov.uk/publications-and-updates/uniform-network-code-unc-621abcdefhjkl-amendments-gas-transmission-charging-regime

[30] https://www.ofgem.gov.uk/publications-and-updates/amendments-gas-transmission-charging-regime-decision-and-final-impact-assessment-unc678abcdefghij

[31] For example, industry highlighted several examples of strong governance performance under current arrangements. These were CMP373, UNC0748, P379, the electricity charging SCRs, and the industry's response to the COVID pandemic

63. The proposed policy options address the current inability for Government to ensure codes are strategically aligned with overarching policy objectives in the energy sector, such as achieving Net Zero and delivering benefits to consumers. Without reform, current code processes are likely to either act as a barrier to achieving such policy goals or raise the cost of meeting them relative to intervention.

64. While tools such as the Significant Code Review (SCR)[32] have been used in the absence of alternatives for delivering strategic code change, the SCR process is heavily resource intensive and has been used sparingly as a result. Granting Ofgem new strategic functions for codes would enable industry codes to align with consumer interests and Government policy more closely, delivering, for example, decarbonisation and consumer protection objectives by proactively identifying and prioritising relevant modification changes. Ofgem could also help co-ordinate and lead cross-sector reforms, where strategic priorities are complex and cut across multiple areas of the energy system.

65. The enhanced responsibilities of the code management function is also intended to introduce an explicit role for prioritisation, ensuring a focus on the changes most likely to deliver benefits in the interest of the consumer, or on Government policy and its vision for the energy system. This would allay delays resulting from focus on modifications made with vested industry interests. This function would also increase the dynamism of the governance arrangements, and alongside a reduction in costs for industry participants, allow for faster diffusion and enable access for new, innovative technologies and markets necessary to meet Net Zero in a more timely and coordinated way.

Lowering costs of participation for small firms

66. Under the current system, we expect costs to fall disproportionately on smaller firms due to the high fixed cost of participation in the code modification process; small firms currently have less ability to shape the regulations which govern them.

67. This proposal is expected to strengthen the ability of all parties to compete, irrespective of size. As the CMA noted, the current framework creates significant compliance costs to industry due to the complexity of codes arrangements. The CMA considers that these costs fall disproportionately on smaller parties and hinder their ability to compete and generate innovation in the industry. As set out in the monetised costs section of this IA, code reform will lower some of the costs of participation (i.e., through reduced workgroup and consultation costs) which currently exist as part of the modification process. This should lead to greater code modification participation from small firms and greater competition in the energy industry, and in turn to lower costs to energy consumers.

68. This benefit of code reform should increase in the future as small and micro businesses are expected to play an increasing role in the delivery of a smarter, more flexible energy system.

Enabling new market entrants and increased competition

69. New arrangements intend to reduce the material burden of participating in governance processes and reduce the risk of large incumbent firms slowing code changes against their commercial interests, such as those enabling greater competition. Through achieving these intended outcomes, it is expected that a greater number and variety of participants will be able to participate in the codes process, allowing for modifications supportive of competition and market entry.

<u>Switching values</u>

70. The unquantified benefits of code reform need to amount to at least £33m per year in order for the intervention to have a BCR of 1.

71. It is likely that the majority of benefits will come from reduced delays to code modifications, as illustrated by the case studies outlined above, although other channels such as increased competitiveness within energy markets and greater alignment of strategic goals would also have

[32] The Significant Code Review (SCR) process provides a tool for Ofgem to initiate wide ranging and holistic change and to implement reform to a code-based issue. Further guidance on the SCR process can be found here https://www.ofgem.gov.uk/publications-and-updates/ofgem-guidance-launch-and-conduct-significant-code-reviews

strong effects. High-level analysis based on estimates put forward during the P272 code change process suggests that the delayed benefits of this case study only are likely to be in the millions of pounds per year. Given the overall cost of delays and the burden to society may be likely to increase in the context of Net Zero, it is expected that the aggregate impact of delays, and therefore the benefit of reducing such delays, exceeds the £33m per year required for the BCR to exceed 1.

72. Further, this proposal is pro-competition as it would enable firms to enter the market, break the dominance of larger industry players, and reduce the costs of participating in the code change process. Overall, this would likely reduce the costs to consumers through competition effects. This increased competitive pressure can also likely be expected to increase the number of bidders for competitively tendered projects, increase opportunities for output competition in the wholesale and supply markets and provide a greater incentive to innovate, all of which can be expected to reduce costs compared to the counterfactual.

Risks and uncertainties

73. There are potential risks and uncertainties with the policy and the economic assessment. These are discussed in turn.

Potential policy risks and uncertainties

Risk of inadequate funding to Ofgem

74. Current Ofgem funding is determined via HMG and paid for end users energy bills. The effectiveness of Ofgem in its new strategic role is likely to be dependent on adequate funding to ensure sufficient resources are devoted to this function. In the event Ofgem does not secure sufficient funding from HMG, their performance in this new capacity may be impacted.

75. This risk was highlighted as a concern by a number of respondents to the 2021 consultation, who cited previous code modifications where Ofgem's resource constraints had slowed processes or resulted in strategic inefficiencies, such as Ofgem raising concerns late on during the code modification process[33]. This risk is intended to be mitigated by ensuring adequate funding is provided for Ofgem to deliver its new strategic role.

Risk of delays

76. There is a risk that the cost of implementation and delivery timelines may overrun. This could be in the form of delays to the selection of code managers delaying the system by several months. If this materialises, this could lead to foregone benefits, which has been assessed in the Sensitivities section. Work on the development of a clear and robust implementation delivery plan is intended to mitigate this risk.

Unknown risks

100. The energy system is undergoing a period of rapid transformation and as such, there are likely to be risks that are currently unknown. This is especially pronounced given developments surrounding the major expansion and decarbonisation of the electricity system. To mitigate this uncertainty, careful consideration will be given as to how Ofgem can be equipped and incentivised to address new challenges.

Development of code manager function and/or governance arrangements

101. A change in governance framework is likely to create uncertainty to affected firms which may inhibit or delay investment and strategic decisions. This may also include future development of the code manager function, which may lead to a regulatory risk and higher capital cost for investors.

Assumptions used

102. Several simplifying assumptions are made throughout the quantified analysis. Where possible, we have used sensitivity testing to inform ranges and rounding to ensure that the broad figures

[33] These examples include modifications: CMP317 (by 5 respondents) and UNC621 (by 3 respondents). Further, consultation responses highlighted modifications P390 (by 4 respondents), UNC696 (by 2 respondents), and GC0137 (by 2 respondents).

presented are still accurate. These assumptions have had to be made to ensure meaningful analysis within possibility parameters; however, we do expect that these assumptions may present a slightly downwards bias on results.

103. When calculating the benefits of code reform to industry in savings to consultation response costs:

- Assumption 1: For the current costs to industry of responding to consultations, it is assumed that for all codes other than SEC, effort and cost are in line with CUSC, STC, and Grid Code effort and cost. This is a simplifying assumption based on available data.
- Assumption 2: For the consultation response savings rate of code reform, it is first assumed that the savings arise from modifications which are rejected or sent back no longer being proposed. We assume that all modifications of this type would not be proposed under the new arrangements, given empowered code managers would ensure from the outset that modifications are as aligned with Ofgem's strategic priorities as possible. However, these are likely to not be eliminated completely under the new arrangements. This is a simplifying modelling assumption used to aid analysis.
- Assumption 3: It is assumed that proposals which do not receive a formal response do not account for a hidden cost of industry engaging in code modifications. Along with Assumption 2, this provides the rationale for our central efficiency scenario of 20% consultation cost savings.

104. When calculating the benefits of code reform to industry in savings to workgroup participation costs:

- Assumption 4: For the current costs to industry of workgroup participation, it is assumed that, for all codes other than SEC, effort and cost are in line with CUSC, STC, and Grid Code effort and cost. This is a simplifying assumption based on available data.
- Assumption 5: It is assumed that there are an average of 4 workgroups per modification, as estimated by the CMA. We assume, based on an assumption setting workshop with Ofgem, an average of 10 participants per workgroup in our central scenario. We accept that the exact modification processes of different codes under the current system varies and these are indicative numbers. This assumption is a key focus of sensitivity testing.
- Assumption 6: For the workgroup participation savings rate of code reform, we assume that there would be 3 workgroups per modification, equating to a 25% savings rate. This is an indicative estimate as it is not possible to predict exactly how many workgroups will be needed after code reform, savings may also occur through alternate mechanisms to a reduction in the 'number' of workgroups[34] which are not formally included here. This assumption was tested through sensitivity analysis. It is assumed that code managers may still use workgroups to engage with industry over modification proposals.

105. When calculating the cost of the strategic function:

- Assumption 7: In discussion with Ofgem, we assume that carrying out its new strategic code functions would require an additional 30 FTE staff, based on Ofgem estimates. The additional cost is estimated by taking this as a share of total Ofgem costs. This is based on data from Ofgem's expenditure in February 2015, which was the latest readily available[35].

106. When estimating the costs of the additional code manager responsibilities:

- Assumption 8: It is assumed that:
    i. Estimates of Elexon's costs to carrying out code manager functions is applicable to other codes.

[34] For example, through shorter workgroups or workgroups requiring less preparatory work.

[35] As before, more recent Annual Reports do exist, however not to the same granularity required for our analysis. Comparisons at the headline level in total expenditure gives roughly similar results, and therefore we assume that using the 2015 data would still provide accurate estimates.

ii. Elexon's costs for activities considered "unique" to Elexon can be separated out from activities labelled as "code manager" by assuming costs are uniformly distributed across each activity. This is due to the granularity of available data.

iii. 30% of activities labelled as "code manager" are already carried out by either industry or code administrators. This assumption will be tested through consultation and its uncertainty is reflected in sensitivity analysis.

107. Other assumptions made:

- Assumption 9 For the cost estimates for both the set-up of Ofgem's new strategic functions, and for the additional costs for code managers, we make the following simplifying functions for analysis:
    i. We do not include any start-up costs relating to the costs of recruitment or of building up expertise.
    ii. We assume that the new employees can be accommodated within current offices and that no new office space is required.
    iii. We assume that the grade profile of the additional employees' mirrors that of Ofgem/current code administrators as a whole.
- Assumption 10: Costs are assumed equal for code administration systems, central delivery body functions and engineering standards under the new governance arrangements.
- Assumption 11: It is assumed that all costs associated with Ofgem's new strategic functions and the code manager(s) are passed through to end consumers of energy via industry participants passing through any increases in their license payments.
- Assumption 12: It is assumed for the purposes of modelling that all code managers will be established at the same time. In reality, this process is likely to take place over a period of several years, with some codes receiving a code manager towards the beginning of the transitionary period and others towards the end.

Wider impacts

108. We have considered wider impacts on competition and consumer confidence in the market which we consider to be the most relevant ones for this analysis.

109. The wider impacts we have considered are:

- **Competition:** The current code governance approach makes sense where only small-scale changes are needed to keep the rules and systems fit for purpose, where the composition of the industry is homogenous, and interests are largely aligned. However, the significant industry change that we anticipate in the years ahead calls this model into question. New technologies, new business models, and new ways of running the energy system are emerging. These innovations may help us move to a low carbon system that is both secure and affordable. They will also be important for enabling our vision for smarter markets where consumers are more engaged and empowered. But the existing industry code governance framework may be preventing these innovative ideas from coming to fruition, especially where they require significant changes to existing arrangements, or where they are not aligned with certain industry interests. This proposal should enhance the functioning of code governance arrangements so that code changes that are considered beneficial to the market are not delayed by incumbent firms that would not directly benefit from such changes. This should have a beneficial effect on competition and lower barriers to entry in the market.
- **Price and Bill impact:** This policy intends to contribute towards reducing the costs of enabling Net Zero alongside allowing for increased competition and innovation across the energy system. These are expected to translate into reduced costs of energy price and bills out until 2050, which can be expected to support all end users of energy.

  However, these benefits are expected to accrue over the long term and are harder to pin down, whilst the direct costs of policy intervention – namely the learning and familiarisation

costs involved, and costs to industry from higher charges to code managers – are borne in the near term. An internal assessment of price and bill impacts concluded that this direct temporal cost would have no significant impact on end consumers bills, with a bill impact for this cost is estimated at below £1 per year across all sensitivities tested. The long term benefits to consumers are therefore expected to outweigh this effect.

- **Environmental:** The delivery risk associated with achieving the UK's Carbon Budgets and Net Zero is reduced through policy intervention helping to enable timelier and cost-effective decisions to be made across the energy system.
- **Ensuring safe operation and security of supply:** The proposals will ensure that the codes can continue to work effectively, while seeking to improve and strengthen the code regime by ensuring the codes work better for all parties involved, especially for those that will see an increased ability to propose modifications to arrangements. Respondents to the 2021 consultation noted that having more effective codes would ensure safer operation within the energy market, and bolster security of supply through clearer and more appropriate technical standards for a high renewable energy system.

Statutory Equality Impact

110. We do not expect any direct impact on the Convention Rights of any person or class of persons arising from the measures assessed in this IA. Our view is that there would be no impact on race, disability, gender or any other protected characteristic from any of the measures in this IA. These regulations will not target persons but companies in scope. In addition, these regulations will be of general benefit to everyone in the UK, regardless of whether they have one or more protected characteristics.

111. Similarly, we do not expect any direct impact given our analysis of potential price and bill impacts was found to have no significant impact on annual bills.

Justice Impact Test

112. This intervention does not expect to impact on the justice system. An internal assessment of the measures taken found it was unlikely that Code Reform would result in any implication on the justice system.

Human Rights Impact Test

113. We note that the power for Ofgem to make direct changes to codes potentially impacts on the property rights of code parties and others as it is effectively a statutory requirement to change a private law contract (albeit one which is linked to licence conditions). Ofgem will also be granted transitionary powers to modify codes, licences and contracts for the purposes of implementing code reform, in addition to the power to establish transfer schemes to set up the new code managers. We intend to mitigate this by ensuring a fair price is paid for property that is impacted, as well as by building robust checks and balances into the required enabling legislation.

Distributional effects

119. An assessment of the distributional impacts across groups and time is detailed in Table 6. Impacts on business are then considered in more detail in the following sections, splitting out the overall impact to business and the impact on small and micro businesses.

Table 64: Distribution of impacts over groups and time

Group	Costs	Benefits	Time-horizon for costs and benefits[36]
HMG	Internal costs of Codes Reform project Learning and familiarisation costs	Greater strategic alignment of energy sector	Internal costs of code reform expected to occur 2021-2023 Benefits and familiarisation costs begin in 2024

[36] Implementation timelines are subject to Parliament passing the necessary primary legislation.

		More flexible, responsive, and innovative energy system.	
Ofgem	Cost of new strategic functions (central estimate of around £2m per year) Internal resource to participate in Codes Reforms project Learning and familiarisation costs	Greater strategic alignment of energy sector More flexible, responsive, and innovative energy system.	Internal costs to Ofgem begin in 2023 with additional costs of operating the strategic code functions beginning 2023. Benefits are expected to begin in 2024.
Code Administrators	Cost of code manager responsibilities Internal costs of participating in code reform project. Learning and familiarisation costs	Reduced workgroup costs Reduced consultation costs Greater control over code administered.	All benefits will begin in 2024. Costs of code management activities are assumed to begin in 2024.
Industry (*Generation, transmission, distribution, supply firms***)**	Increased fees to code administrators Internal costs of participating in code reform project. Learning and familiarisation costs	Reduced workgroup and consultation costs Reduced requirement to carry out code manager responsibilities. Faster codes process increasing market flexibility. Reduced barriers to participating in code modification process.	All benefits will begin in 2024. Costs may begin in 2023 when Ofgem's new strategic functions come online, which will be funnelled down to industry. Other costs will begin in 2024.
SME energy firms	Increased fees to code administrators Learning and familiarisation costs	Reduced barriers to participating in code modification process. Reduced requirement to carry out code manager responsibilities. Faster codes process increasing market flexibility. Reduced workgroup and consultation costs	All costs and benefits will begin in 2024. Costs may begin in 2023 when Ofgem's new strategic functions come online, which will be funnelled down to industry. Other costs will begin in 2024.
Energy end users (*Industrial and household consumers***)**	Costs per annum estimated as minimal	Increased number of code modifications prioritising consumer interests. Reduced energy bills relative to baseline in long-run.	Benefits may begin to accrue from 2024.

120. Table 7 illustrates the distribution of costs and benefits from monetised analysis. Costs of code manager functions and setting up the strategic code functions within Ofgem are highlighted in (a) and (c). These are expected to be passed on to end users of energy, which as discussed above is not expected to result in a material impact on end user bills, including both business and consumers. As a result, only the monetised benefit to code parties in (b), via reduced consultation and workgroup costs, is expected to accrue to business. Analysis also assumes a transfer of costs for code management activities currently carried out by code parties, that under new governance arrangements, will instead be carried out by code managers. This results in

an additional benefit to code parties; however these are not included below due to uncertainty as to what proportion of code management activities are currently carried out by code parties.

121. As noted throughout this IA, these monetised benefits only capture peripheral benefits of policy intervention. It is expected that unmonetized benefits will benefit the system as a whole alongside end consumers.

Table 75: Distribution of total monetised impacts of Code Reform (£m) (2020£, 2022 discounting perspective, 12-year horizon)

Scenario	(a) Monetised Code Manager costs to pass on	(b) Monetised benefit to code parties	(c) Monetised costs to Ofgem to pass on	(d) Monetised costs passed through to energy end users (a) + (c)
Low	435	3	26	460
Central	**280**	**15**	**16**	**300**
High	160	32	12	175

Figures rounded to nearest 10m for costs above 50m, to nearest 1m for costs below

Business Impact Assessment

122. BEIS considers these measures to be pro-competition and therefore to fall out of scope of business impacts. According to the Better Regulation manual[37], a regulatory measure needs to satisfy four conditions in order to be considered to promote competition. In the following section we list the four conditions and provide a comment for each of them to explain how the proposed measures meet them.

    a) *The measure is expected to increase, either directly or indirectly, the number or range of sustainable suppliers; to strengthen the ability of suppliers to compete; or to increase suppliers' incentives to compete vigorously.*

Comment: The measures are expected to strengthen the ability of all industry parties to compete. As the CMA noted, the current framework creates significant compliance costs to industry due to the complexity of codes arrangements. The CMA considers that these costs fall disproportionately on smaller parties and hinder their ability to compete and generate innovation in the industry. The measures proposed would simplify the code governance arrangements, strengthening the ability of all parties (in particular smaller firms) to engage in the code modification process, and along with more efficient processes that reduce the material burden arising from consultation and workgroup costs, allow these smaller firms to compete more effectively in the industry. The proposals will also mean that code parties will no longer have to bear the cost of responsibilities due to be transferred to code managers.

Businesses may also incur costs from learning and familiarisation to the new code management arrangements, as well as higher incurred costs through increased charges designated for the increased costs for code management. However, it is expected that all costs incurred can be passed onto energy end consumers[38]. As a result, we do not expect code reform to have an indirect cost on wider industry.

Overall, we would expect the small familiarisation costs (likely not incurred by business) to be outweighed by ongoing benefits from lower costs of interacting with the codes, strengthening code parties' ability to participate and compete. Table 7 above outlines estimates for code parties of benefits ranging from £3 million to £32 million per year, due to reduced responsibilities and savings from costs of consultation and workgroup participation.

    b) *The net impact of the measure is expected to be an increase in [effective] competition (i.e. if a policy fulfils one of the criteria at (a) but results in a weakened position against another) and the overall result is to improve competition.*

Comment: The policy is likely to have positive impacts on all criteria listed under a), although the evidence described above is considered to be the most relevant and most likely to materialise in this context, given

[37] https://www.gov.uk/government/publications/better-regulation-framework

[38] For end consumers of energy, the price and bills impact finds that these costs will be marginal and have no material impact on final energy bills.

the current arrangements disproportionately affect small firms more, harming competition. With regards to other criteria, by making the market more transparent and enabling the timely and effective introduction of policy changes that meet BEIS and Ofgem's strategic objectives, the policy should increase incumbent firms' incentives to compete, particularly smaller players who would benefit more than larger players from increased pro-competitive changes to codes. More streamlined code governance arrangements could also have an impact on barriers to entry in the market, as operating in the industry might be perceived as less complex by potential new entrants, possibly leading to an increase in the number of firms competing in the market.

Further, the current system also favours larger firms, as it is based upon an arrangement where only small-scale changes are needed to keep the rules fit for purpose, where the composition of the industry is homogenous, and interests are largely aligned. Given the shift to a more diverse market, smaller firms are currently left with disproportionately low levels of power and influence, especially given the resources required to participate negatively affects smaller firms more. This measure would allow smaller firms to more easily bring forward and expediate code modifications that are considered a benefit to themselves, or the wider market, without fear of processes being delayed by incumbent firms that would not directly benefit from such changes. Therefore, this proposal would allow the smaller suppliers within the existing market to more effectively participate in market, and align it with a more holistic view of objectives and incentives – increasing competition by allowing small firms to more effectively compete in the future.

c) Promoting competition is a core purpose of the measure.

Comment: The CMA has found that the existing code governance arrangements prevent the effective implementation of code modifications that would promote competition, as well as place a large administrative material burden disproportionately upon smaller firms. The proposed package will enable modifications to industry codes to happen quicker, and more in line with the entire market's objectives and incentives. This should allow for greater competition as barriers to entry and participation for small firms are reduced, and enable markets to cope with new technologies, new business models and emerging ways of running the energy system. These innovations are important for enabling our vision for smarter markets where consumers are more engaged and empowered, which is in the interest of both consumers and competition.

d) It is reasonable to expect a net social benefit from the measure (i.e. benefits to outweigh costs), even where all the impacts may not be monetised

Comment: As discussed in the previous section on overall impact, it is expected that the administrative costs of changing the governance system are less than the benefits of the code modifications these changes will enable. The proposed reform will enable the timely implementation of policy changes in line with BEIS's strategic objectives, providing benefits to society such as reducing the time for innovation within the market, expediting the move to a low carbon system that is both secure and affordable. Further, a greater strategic vision in line with BEIS and Ofgem objectives will also ensure that the incentives in the market are aligned with those of the Government's, allowing for the prioritisation of modifications that are in the interest of consumers, as well as those that enable more rapid implementation of new, innovative technologies required to meet Net Zero. This in turn also helps consumers and the wider public, as the decarbonisation process is sped up, and the deadweight loss involved with the current slow governance arrangements is removed.

Impact on small and micro businesses (SaMBA)

119. BEIS's Business Population Estimates[39] provide the combined number of employers in the 'Electric power generation, transmission and distribution' and the 'Manufacture of gas; distribution of gaseous fuels through mains' sectors. In 2020 there were 2,060 micro businesses in the electricity sector and 55 in the gas sector. There were 415 small businesses in the electricity sector and 15 in the gas sector. There has been a particularly large increase in the number of micro and small businesses in the electricity sector since 2013 – around a 300% increase in the number of micro and small firms, compared to rises of around 175% and 65% for medium and large businesses' respectively. These figures show that micro and small businesses already play an important and significant role in the electricity sectors, which will be

[39] https://www.gov.uk/government/statistics/business-population-estimates-2020

expected to increase further in the future, as more decentralised systems allow for a greater degree of small-scale generation.

120. For gas, the role of micro and small firms appears more stable with no rise in the number of small firms and about a 50% increase in the number of micro firms, roughly comparable to the 100% increase in the number of large firms.

Table 86: Number of employers in the private sector, Electric power generation, transmission and distribution industry group, UK, beginning of 2020[40]

	Firms (*number*)	Employment ('*000s*)	Turnover (*£m*)	Firms (%)	Employment (%)	Growth in firms since 2013
All employers	2,555	101	101,065	*100.0*	*100.0*	296%
Micro (1 - 9 employees)	2,060	8	6,898	*80.6*	*7.9*	308%
Small (10 - 49 employees)	415	6	*	*16.2*	*5.9*	295%
Medium (50 - 249 employees)	55	6	*	*2.2*	*5.9*	175%
Large (250+ employees)	25	82	85,319	*1.0*	*81.2*	67%

*Key: * - denotes to unavailable data*

Table 97: Number of employers in the private sector, Manufacture of gas; distribution of gaseous fuels through mains, UK, beginning of 2020[41]

	Firms (*number*)	Employment ('*000s*)	Turnover (*£m*)	Firms (%)	Employment (%)	Growth in firms since 2013
All employers	85	44	40,845	*100.0*	*100.0*	42%
Micro (1 - 9 employees)	55	*	*	*64.7*	*	57%
Small (10 - 49 employees)	15	0	*	*17.6*	*0.0*	0%
Medium (50 - 249 employees)	5	*	1,229	*5.9*	*	0%
Large (250+ employees)	10	*	*	*11.8*	*	100%

*Key: * - denotes to unavailable data*

121. All parties in these sectors face the cost of monitoring changes in Government policy, regulation, and industry code developments. While this regulatory environment is a cost of doing business applicable to all parties, the fixed costs of compliance are more of a burden for new entrants and smaller parties with smaller customer bases over which to spread these costs. Further costs are involved if a supplier wishes to try to influence any such changes. The CMA's evidence found that smaller parties did not have the resources to be involved in every modification or even to suggest modifications themselves[42].

122. Beyond small businesses already participating in the sector, there could also be small innovative companies who are finding it difficult to enter the sector due to the complexity of the codes or the codes' inability to keep up with innovation. In the first two and a half years of Ofgem's innovation hub, the scheme engaged with 274 innovators seeking to understand the regulatory implications of their propositions. Of these, Ofgem gave substantive support to 81 businesses looking to innovate in the electricity retail and flexibility markets. Of the 81, 36 (44%) sought feedback that covered code requirements. This demonstrates that codes are an important issue

[40] https://www.gov.uk/government/statistics/business-population-estimates-2020

[41] https://www.gov.uk/government/statistics/business-population-estimates-2020

[42] See CMA working paper on Codes: https://assets.publishing.service.gov.uk/media/54f730f140f0b61407000003/Codes.pdf

for innovators. These figures are the lower bound of the number of affected organisations; there may be other innovators facing issues with code requirements who have not been in contact with Ofgem and, of those who were in contact, code requirements may have become material considerations in later stages of their development.

123. Further, research by Xoserve found that the raising of modification proposals and participation in Workgroups is still dominated by the larger organisations in the energy industry. Across all Codes, "Modification Proposals are most commonly raised by Supplier / Shipper organisations (39%) and by Network businesses (including the TO/SO functions) (32%)"[43]. Workgroup participation is also "most prevalent amongst the 'Big 6' Supplier / Shipper organisations, who have attended an average of 51% of all Workgroup meetings"[44]. This shows that micro and small firms still have relatively little power to influence and enact change in line with their objective within the system.

Effect of this proposal

124. Costs directly attributable to policy reform and borne by small and micro businesses within the energy sector are the learning and familiarisation costs associated with understanding the new governance process. Under paragraph 59, we assume that these learning and familiarisation costs could accrue to around £1,200 to £2,400 per company at minimum. Given that familiarisation costs are inevitable with any new measures, it is not possible that micro and small firms could be exempted from these costs. However, we expect these familiarisation costs to be transitionary costs, passed down to end consumers (again, with marginal material impact on energy bills), and therefore do not expect these costs to be incurred by micro and small businesses.

125. Small and Micro firms may also face an increase in industry charges due to the new costs associated with the creation of Ofgem's new strategic functions and the new code manager(s). However, it is expected that these costs will be able to be passed through to customers and eventually to the energy bills of energy end consumers and therefore not impact on these firms. Moreover, in most instances, industry charges are proportional to the size of firm, mitigating the impact of any increase in industry charges under scenarios in which costs are not able to be passed through to their customers. It is also not anticipated that this cost pass through of industry charges will significantly increase the cost of energy bills, minimising any potential impact on small and micro businesses outside of the energy sector.

126. There are also a large number of benefits that may accrue to small and micro businesses as a result of code reform. Rationalising and simplifying the codes should lead to lower ongoing administrative burden for businesses in terms of understanding and ensuring compliance with the codes. The introduction of Ofgem's strategic code functions and the move away from industry control should ensure the timely delivery of modifications to industry codes that generate wider benefits to the market, even if they do not directly benefit large, incumbent industry participants individually. Therefore, the material burdens overall will be reduced, removing a significant barrier to participation for micro and small firms, while Ofgem's new strategic function will allow them to have more power and influence in processes, enabling them to enact more change in the system. Table 7 above shows that these code parties could see benefits ranging from £3 million to £32 million per year.

127. Overall, we would expect the small familiarisation costs (likely not incurred by business) to be outweighed by ongoing benefits from lower costs of interacting with the codes, and the code changes that the proposals enable should progress quicker, to help level the playing field for smaller businesses.

Monitoring and Evaluation

128. This impact assessment outlines how we intend to use monitoring and evaluation (M&E) to inform this policy intervention alongside the likely data requirements and approach we expect to take.

[43] Included in Xoserve's consultation responses to the previous IA.

[44] Ibid.

Policy Objectives

129. Policy intervention intends to achieve the objectives established through consultation and as set out above, in paragraph 17. Ensuring that these objectives can be interpreted in a SMART[45] manner is important for enabling effective M&E. However, Energy Code Reform is a market-enabling policy which intends to help the energy system achieve Net Zero out to 2050 at least cost. As such, there is no clear 'completion date' by which we expect objectives to have been fully realised. This makes it difficult to reflect the objectives of policy intervention in a time-bound and measurable manner.

130. As a result, a series of sub-objectives which are more time-bound and measurable in mature have been developed to track progress against each of our overall objectives. Time periods considered for these sub-objectives come from discussions with BEIS and Ofgem, dictated by both the date at which we expect to observe early signs of our policy to come into effect and when monitoring results may be informative to future decisions.

131. These sub-objectives are mapped out against overarching policy objectives in Table 10 and are compared to our 'do nothing' baseline. They represent an attempt to rework the objectives into smaller components which are SMART. They do not represent an exhaustive list of all possible sub-objectives related to the policy objectives. Therefore, in tandem with the achievement of these sub-objectives, the performance of Codes Reform is expected to be assessed through monitoring whether outcomes aligned with the intentions of Code Reform are observed in the market.

Table 108: Policy objectives of Energy Code Reform and supporting sub-objectives

Policy Objective	Supporting Sub-Objectives
Objective 1: Code governance should be forward-looking, informed by and in line with the government's ambition and the path to Net Zero emissions, and ensure that codes develop in a way that benefits existing and future energy consumers.	1. An annual strategic direction which takes into account government policy and wider industry developments should be developed from within 12 months of the strategic body being established. 2. Code managers should subsequently develop annual delivery plans aligned to the published strategic direction and manage the code change process to enable their delivery.
Objective 2: The reformed energy code framework should be able to accommodate a large and growing number of market participants and ensure effective compliance.	1. The total number of market participants, given by the total number of code parties across all codes, should begin to increase within 12 to 24 months before levelling out[46]. 2. Code managers should have sufficient regulatory capacity to fulfil code management duties despite the large number of market participants. 3. The compliance framework should remain as or more effective, both in terms of level of compliance and time taken to enforce compliance. We expect impacts for sub-objectives are likely to be observable from 1-2 years following implementation, with impacts continuing on an ongoing basis.
Objective 3: The reformed energy code framework should be agile and responsive to	1. The code change process should be efficient and effective, with the average time taken for code changes decreasing

[45] Specific, Measurable, Achievable, Realistic and Timebound

[46] It is noted that this indicator is sensitive to external factors such as market shocks. However, we aim to compare each indicator to a relative to our 'do nothing' baseline, where it is assumed the external factors would still impact on energy firms.

change whilst able to reflect the commercial interests of different market participants to the extent that this benefits competition and consumers.	across all types of code change within 12 to 24 months of implementation. 2. There should be an increase in the number and type of different code parties proposing code changes. We expect measurable impact across both sub-objectives from 1-2 years after the new framework is in place, following a transition to code managers.
Objective 4: The reformed energy code framework should make it easier for any market participant to identify the rules that apply to them and understand what they mean, so that new and existing industry parties can innovate to the benefit of energy consumers.	1. Code consolidation is delivered. 2. Code managers should be empowered to carry out an enhanced set of roles supporting accessibility[47], transferring complexity and burden away from individual code parties within 6 months of appointment. 3. Code managers should facilitate all code parties' understanding of the code and related processes, taking a role to educate code parties. This role should be taken from the outset of appointment.

Theory of Change

132. The theory of change for how policy intervention intends to achieve objectives 1 to 4 is set out in annex 2, in Figure 3, with objectives denoted D8 to D11. This mapping emphasises which outcomes contribute to which objectives through the inclusion of bracketed text in bold, illustrating which objective is being contributed to. This is in addition to the arrows included throughout the mapping.

133. The achievement of the impacts in the theory of change is dependent on a number of assumptions linking actions, outputs, and outcomes in Figure 3 above. These assumptions relate to external factors, outside the control of policy intervention, however likely to influence results. For example, the recent rise in gas prices and its impact on the number of energy suppliers in the system. Internal to government, this includes ensuring there is adequate resourcing across Ofgem and BEIS and available parliamentary time to deliver on actions according to timelines. More widely, it is also assumed that market participants are adequately equipped to participate in the code change process, including the correct resourcing and expertise. It is also assumed that the wider market environment allows for actions listed to take place. For example, for actions such as 'B6: Appointment and licencing of CMs', it is assumed that there is a sufficiently competitive market to support tendering.

134. The need for adequate skills, resourcing and time across government, code managers and code parties is a continued need across actions, outputs and outcomes contributing towards the achievement of objectives. It is also assumed that policy intervention will work as intended and the new arrangements will result in the achievement of objectives whilst not also producing any unintended consequences. The impact of wider contextual arrangements such as the rate of power sector decarbonisation, the emergence of new technologies and the existence of new bodies such as the FSO will also need to be considered.

Aims of Monitoring and Evaluation

135. Ensuring that the governance of the energy system is fit for purpose is crucial to the achievement of Net Zero, whilst ensuring security of supply and universal access to affordable energy. This creates two key objectives for M&E:

[47] For example, improving the ability for code parties to navigate the websites of code managers.

136. **Aim 1: To provide clear, impartial and robust evidence to demonstrate the intervention's impact or wider outcomes:** It is important that robust M&E is available in a timely manner in order to help ensure that governance arrangements are fit for purpose and highlight where additional action may be required. This need for M&E is heightened by the uncertainties and assumptions illustrated of the future state of the world and energy system needs, illustrated in the narrative supporting our theory of change above.

137. **Aim 2: To provide useful and timely learning about the roll-out and performance of the code reform:** This policy intends to leverage M&E to highlight early signs of both good and poor performance in both the process of delivering code reform and subsequent performance of governance arrangements in achieving policy objectives.

138. In the event that M&E highlights shortcomings in the delivery of code reform, evidence may then inform decisions on how these shortcomings may be appropriately addressed. In all eventualities, evidence provides learning useful for other wide scale governance reform projects and helps ensure BEIS is accountable to policy customers and tax-payers.

Monitoring and data requirements

139. At this stage, we anticipate that monitoring the performance of policy intervention in achieving its objectives and attached sub-objectives will be informative of overall performance however only partly able to provide the evidence required to draw conclusions on the effectiveness of intervention. More complete conclusions will be dependent on evaluation of the policy, detailed below.

140. To assess the performance of this policy intervention against the four policy objectives listed above and their attached sub-objectives, it is likely that a mix of quantitative and qualitative indicators will be required, some of which may require additional data collection. Finalised indicators are still being developed therefore this section provides a discussion of potential indicators.

141. For policy objective 1, and attached sub-objectives, measurement of performance is likely to rely on the perceptions of industry participants, government, and regulators. Measuring the number of code modifications that are developed and then subsequently rejected may also provide an indication of the forward-looking strategic alignment of code governance, with fewer code modifications rejected by Ofgem suggesting greater strategic alignment. Sub-objective 2 may be captured via monitoring whether or not annual delivery plans have come forward from each code manager.

142. For policy objective 2, and attached sub-objectives, it is likely that quantitative measurements on the 'number of market participants' and 'number of enforcement actions taken' is likely to indicate the performance of sub-objectives 1 and 3 respectively. Sub-objective 2 is likely to rely on more qualitative approaches such as via survey or interview methods.

143. For policy objective 3, the responsiveness of codes to changing market needs could be informed by a mix of qualitative and quantitative measures. Quantitatively, measuring the average time of code modifications is likely to capture sub-objective 1 whilst sub-objective 2 is likely to be well captured via monitoring the number and type of code party proposing code changes.

144. For policy objective 4, the accessibility of the market is likely to be measurable using both quantitative and qualitative indicators. For sub-objective 1, monitoring the progress of code consolidation will be dependent on agreeing what a finalised set of consolidated codes will look like. For sub-objective 2, indicators such as 'number of roles carried out by the code manager' may be informative of success however it is likely that code parties will need to be surveyed to understand whether these additional roles have removed complexity away from individual code parties. Similarly, sub-objective 3 may be informed by indicators such as 'number of educational events hosted by code managers', but survey data will likely be required on how impactful actions to educate code parties have been. More widely, additional indicators may include the

number of market entrants, velocity of entry and exit dynamics or estimating costs for market entry and participation in code reform procedures.

145. Across all four policy outcomes, it is difficult to assess the timelines over which the performance of the policy should be measured. It is likely that benefits from each outcome should begin to accrue shortly after the policy option is implemented and operable, with listed sub-objectives detailing the earliest dates we expect potential impacts to materialise.

Evaluating performance

146. To provide a full understanding of policy intervention, and, given the difficulties in effectively monitoring the performance of intervention on an ongoing basis, it is deemed proportional to carry out two evaluations; a lighter-touch process evaluation at the time of implementation[48] followed by a value-for-money performance evaluation 5 years following implementation, when it is expected there will be sufficient experience of the new governance arrangements to assess their performance and desirability.

Process evaluation (expected 2027):

147. We intend to conduct a process evaluation around 2027, when the implementation of Ofgem's new strategic code functions, and at least some code managers, have been completed. This process evaluation would focus on understanding how implementation arrangements have performed in establishing new energy code governance arrangements and assess how the theory of change, and its underpinning assumptions may be updated in light of new evidence.

148. Thematic questions this evaluation will look to address are:

    a) Was the reform to energy codes governance structure delivered as intended? What lessons can be learned from implementation?
        i. Were timelines realistic?
        ii. Were there any unexpected or unintended issues in the delivery of the intervention?
        iii. Was security and stability maintained during the transition?
        iv. Did the change create regulatory uncertainty for investors?

    b) Is the theory of change still reflective of our policy intervention? How have wider contextual factors or unforeseen dependencies influenced our understanding of the intervention?
        i. Is the governance structure still equipped with the right skills, roles and resources to meet our objectives in light of this new information?
        ii. Has the development of wider factors influenced the requirements of this policy intervention to meet its objectives? These factors could include the number and characteristics of code parties, the implementation of the FSO and the development of code simplification.

149. Evidence from this process evaluation intends to provide early signs on whether this policy intervention is on track to meet objectives and sufficient to meet the needs of power sector decarbonisation and Net Zero more broadly.

Impact and value-for-money evaluation (expected 2032):

150. We plan to carry out an evaluation of the implementation's impact and value for money however in order to do this we need to allow some time for the changes to be established. As described above we will carry out monitoring and a process evaluation early on and expect this to be followed by an impact evaluation 5 years following the process evaluation, when we expect most or all code managers to be in place and significant experience with the new governance process. This timeline for evaluation is chosen to balance an early date, where sufficient

[48] Measured as the point by which all code managers are in place.

experience with the new governance structure enables strong evidence to be drawn, whilst also enabling timely evidence to correct for any shortcomings that may be slowing down or, adding complexity to achieving Net Zero.

151. Thematic questions this evaluation will look to address are:

    a) Did delivering energy code reform achieve the expected outcomes and objectives of intervention? To what extent are these attributable to this policy intervention?
    b) How cost-effective was the intervention to energy code reform? Have different groups been affected in different ways, how, why, and in what circumstances?
    c) Are governance arrangements fit for purpose into the future? Does the emergence of unintended consequences, new energy system challenges or wider contextual factors require reform to current arrangements?

        i. Does the governance structure provide the correct roles and responsibilities? Are these carried out by the correct bodies?
        ii. How can governance structure account for new challenges to better achieve the objectives of intervention?

Approach to evaluation and additional data requirements

152. We anticipate that the evaluations will be theory-based and incorporate evidence from qualitative and quantitative sources, using a range of expert interviews alongside surveys to capture the views of relevant parties across the energy system, ensuring a sufficient range of relevant parties are reflected. This approach is preferred due to both the highly bespoke nature of GB energy code governance arrangements and the pace of whole system change in the energy sector making it difficult to establish a counterfactual by which experimental or quasi-experimental approaches to evaluation could be compared. Similarly, the multitude of interdependencies and supporting policy interventions in the energy sector makes it difficult for quantitative analysis to identify the causal impacts of this intervention. Additionally, the energy code governance arrangements being universally applied to all sector participants, results in no valid control group for other quantitative methods of evaluation such as difference in differences or randomised control trials.

153. For the above reasons we do not anticipate a need for further monitoring data requirements in future years, however the evaluations themselves will likely collect further data. We do however expect that data collected as part of the monitoring framework will be informative of evaluation.

Justification of Preferred Option

154. The 2021 consultation on energy code reform presented two options for delivering code reform that were compared to our ‘do nothing’ counterfactual. Option 1 created a strategic body function within Ofgem, whilst delegated code managers carried out an enhanced set of responsibilities. Option 2 merged these functions into one IRMB, which would ensure both the strategic direction and delivery of the code manager responsibilities was carried out.

155. The 2021 consultation stage IA published alongside consultation concluded support for Option 1. This IA concluded that the magnitude of annual impacts was likely to be similar under both options, with both preferable to the ‘do nothing’ counterfactual, however the shorter implementation timelines and reduced complexity of Option 1 provided a clear basis for its preference over Option 2. This support for Option 1 was also reflected throughout consultation responses, where no respondent preferred Option 2 over Option 1. Therefore, this final stage IA considered only Option 1 in analysis.

156. We conclude that Option 1 can be expected to have an overall positive impact relative to our ‘do nothing’ counterfactual, despite the negative NPV of quantified analysis, estimated at -£16m

in our central scenario over a 12-year time horizon. Including potential secondary impacts results in a total illustrative NPV of -£280m. When considering non-monetised analysis in tandem, the potential benefits of a more efficient, agile and pro-competitive codes process aligned with governments strategic direction is deemed likely to outweigh costs. This view was broadly supported by consultation respondents.

157. Option 1 is also not expected to result in significant distributional concerns. We expect the major costs of delivering the new strategic code functions by Ofgem and the enhanced roles and responsibilities of code managers will be passed through to end users of energy via energy bill. These costs were considered to have only a small impact on energy bills estimated at below £1 across all scenarios and sensitivities considered.

Annex 1

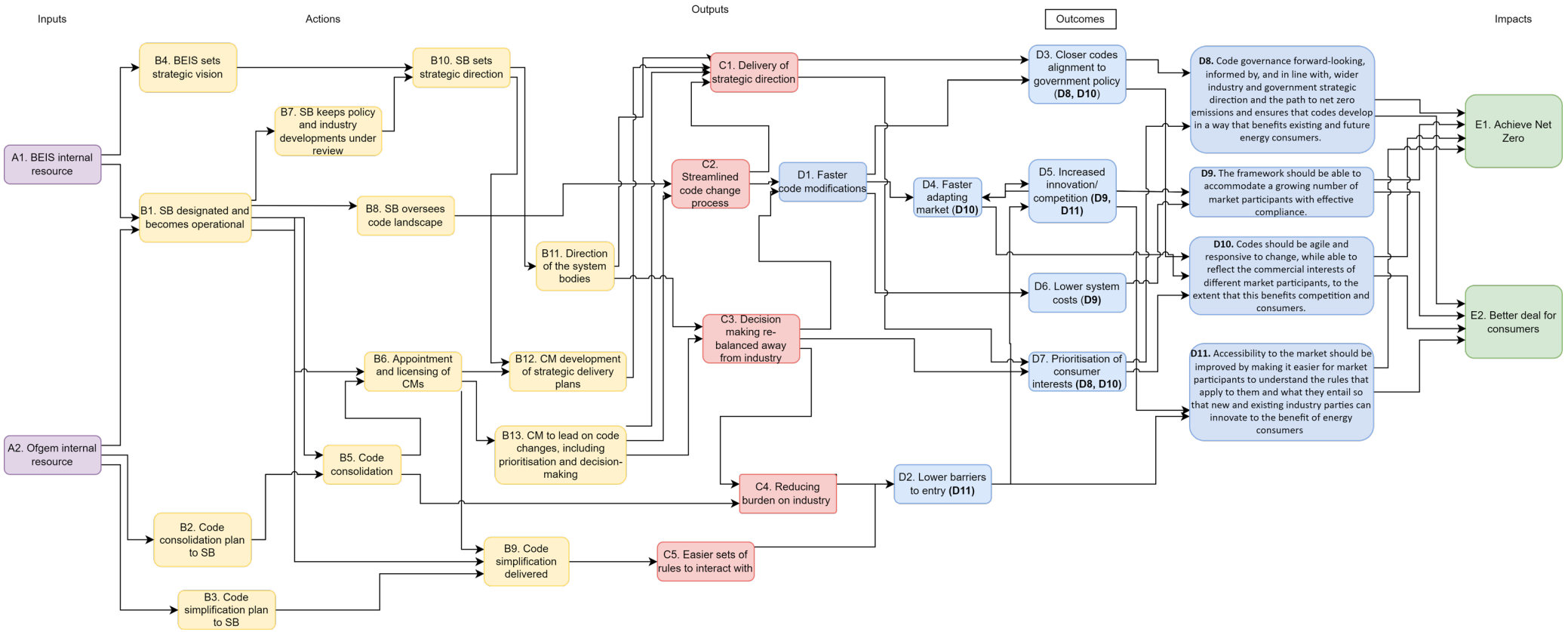
Table 119: Scenarios to test assumptions

Calculation	Parameter	Low-cost scenario	Central estimate	High-cost scenario	Description of assumption scenarios
Consultation cost savings	Code reform efficiency savings	50%	20%	10%	Low: Based on the proportion of code modifications rejected by Ofgem in 2018-2019 (~9%). Central: assumes low does not capture all efficiency gains, doubling estimate to appreciate wider gains from intervention (i.e., incorporates the hidden cost of consultations such as internal resource to develop and review proposals). High: extends this central by assuming a higher unhidden (i.e., send-backs) and hidden cost due to the increasing complexity of energy system in future years.
Consultation cost savings	Cost per industry participant	increased by 50%	as given	halved	Illustrative +-50% to provide a range.
Workgroup costs savings	Participants per workgroup	12	10	8	Range of +-2
Workgroup costs savings	Efficiency savings (i.e. reduced workgroup requirements)	25%	25%	13%	Central and high scenario assumes number of workgroups required per modification falls from 4 to 3, low assumes fall from 4 to 3.5. Based on discussions with Ofgem, first workgroup consists of preparatory work that is expected to be carried out by enhanced code manager functions.
Workgroup costs savings	Cost per industry participant	increased by 50%	as given	halved	Illustrative +-50% to provide a range.
Cost to code administrators of taking on code manager functions	Code management multiplier	Costs of code management functions are 20% lower for other code administrators than Elexon. 50% of code management activities currently carried out by industry or code administrators.	Costs of code management functions are the same for other code administrators as Elexon. 30% of code management activities currently carried out by industry or code administrators.	Costs of code management functions are 20% higher for other code administrators than Elexon. 10% of code management activities currently carried out by industry or code administrators.	Discussed in detail under sensitivities. Key assumption of quantified analysis.
Option 1 - Cost to Ofgem's new	Ofgem's strategic code functions: number of employees	20	30	45	Central estimate based on discussion with Ofgem. High assumes fewer staff needed by 33%, low assumes 50% increase in staff. Asymmetric due to expected lower bound of staff feasible to deliver function but no upper.

strategic code functions					

Annex 2

Figure 1: Energy Code Reform theory of change[1]



[1] Within Figure 3, 'SB' refers to Ofgem and its planned new strategic code functions for simplicity.