Title: Energy Industry Code Reform **IA No:** BEIS022(C)-21-ICE **RPC Reference No:** RPC-BEIS-5077(1) **Lead department or agency:** BEIS **Other departments or agencies:** Ofgem	**Impact Assessment (IA)** **Date:** 20/07/2020 **Stage:** Development/Options **Source of intervention:** Domestic **Type of measure:** Primary legislation **Contact:** inigo.carro@beis.gov.uk / niall.patrick@beis.gov.uk

Summary: Intervention and Options

RPC Opinion: Not Applicable

Cost of Preferred (or more likely) Option (in 2020 prices)			
Total Net Present Social Value	**Business Net Present Value**	**Net cost to business per year**	**Business Impact Target Status** Non-qualifying provision
£m	£m	£m	

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

In 2016, the Competition and Markets Authority (CMA) found that the 11 unique codes that govern the energy system lacked a strategic direction and were costly for firms to engage with, particularly for SME businesses which are of growing significance in the energy sector. Furthermore, the CMA found that current arrangements 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 and consumers. Together these problems are likely to act as a barrier to achieving net zero at least cost. Government intervention is necessary since 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 – Ofgem as strategic body (preferred option): Ofgem takes on the role of the strategic body, with enhanced code manager function assigned to a separate organisation(s). Code managers would be accountable to Ofgem as the strategic body. Assuming primary legislation is passed in 2023, this could be implemented from 2024. This is the preferred option due to the relatively faster time to implement the reforms, leading to the benefits being accrued more quickly.

Option 2 – FSO as IRMB (alternative option): The Future System Operator (FSO) takes on the role of the integrated rule making body (IRMB), which combines the strategic and code manager functions into one organisation. The IRMB would ultimately be accountable, via the FSO board, to Ofgem. This could be implemented from 2026, due to timelines related to and determined by negotiations with National Grid.

Will the policy be reviewed? It will/will not be reviewed. **If applicable, set review date:** Month/Year

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: .....

Summary: Analysis & Evidence

Policy Option 1

Description:

FULL ECONOMIC ASSESSMENT

Price Base Year: 2020	PV Base Year: 2021	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -£478m	**High:** -£147m	**Best Estimate:** -£295m

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	NA	NA	Optional	**482m**
High	NA		Optional	**180m**
Best Estimate	NA		£37m	**£311m**

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 the strategic body function. Second, the enhanced code manager functions will pose costs to the appointed organisation or organisations. 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 the strategic body, once established, to tender for the code managers.

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

There may be significant 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) appointed 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.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	NA	NA	Optional	**£3m**
High	NA		Optional	**£34m**
Best Estimate	NA		£2m	**£16m**

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 code modifications suggested 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 functions.

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 the consumers and the achievement of 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 is applicable to other codes and that (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

Summary: Analysis & Evidence

Policy Option 2

Description:

FULL ECONOMIC ASSESSMENT

Price Base Year 2020	**PV Base Year** 2021	**Time Period Years** 10	**Net Benefit (Present Value (PV)) (£m)**		
			Low: Optional	**High:** Optional	**Best Estimate:**

COSTS (£m)	**Total Transition** (Constant Price) Years		**Average Annual** (excl. Transition) (Constant Price)	**Total Cost** (Present Value)
Low	Optional		Optional	**£361m**
High	Optional		Optional	**£120m**
Best Estimate			£33m	**£220m**

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

It is estimated that the integrated rule making body (IRMB) function would cost the future system operator (FSO) around £33m per year to carry out from 2026 onwards. This timeline is due to the time taken for the establishment of the FSO and for the FSO to take on the IRMB role. This is the only major cost expected under this option since the IRMB will be responsible for both the strategic body and enhanced code manager functions considered in option 1.

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

There may be significant 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 the IRMB there may be time required before responsible teams have the experience and familiarity with new functions to fully utilise them. For Ofgem, time may be required to develop effective communication and regulation practices for the IRMB. For wider industry, time will be required to understand new processes.

BENEFITS (£m)	**Total Transition** (Constant Price) Years		**Average Annual** (excl. Transition) (Constant Price)	**Total Benefit** (Present Value)
Low	Optional		Optional	**£3m**
High	Optional		Optional	**£27m**
Best Estimate			£2m	**£13m**

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

Only two minor benefits of intervention can 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 code modifications suggested 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 functions.

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 the consumers and the achievement of 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 also sensitive to the assumptions made in estimating the cost of code manager functions, described in the summary of Policy Option 1. There is additional risk of delay in implementation under this option due to the dependency on the creation of a new future system operator before the IRMB can become operable.

BUSINESS ASSESSMENT (Option 2)

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

Evidence Base

Background

1. Much of the operation of the electricity and gas market is underpinned by technical and commercial codes. This consultation stage IA provides an assessment of the impact of the proposal to introduce legislative changes with 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. The industry codes serve to collate the technical standards and commercial terms and conditions that apply to gas and electricity market participants. They are multi-party agreements which standardise the commercial requirements applicable to all industry participants. There are currently 11 codes made up of more than 10,000 pages of text, overseen by six code bodies with varying governance and ownership arrangements. Although the governance arrangements in each code varies, 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 parties who oversee the operation of the code and any code changes[1]. In order to maintain an efficient industry framework, the codes need to change over time; the change process varies across different codes.
3. The proposed areas within the scope of this reform are the:
    - National Grid Electricity System Operator (NGESO) codes (CUSC, GC, STC) and the non-NGESO codes (BSC, MRA, DCUSA, DC, SEC, UNC, SPAA, IGTUNC). This would also in future include the REC once it is fully operational.[2]
    - Smart metering (delivered by the data and communications company - DCC), Gas (delivered by Xoserve), Electricity (delivered by Elexon) central systems delivery functions, and the Data Transfer Service (DTS) (delivered by Electralink).
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.
5. There are some external estimates, which inevitably vary slightly. In British Gas's response to Ofgem's 2015 open letter on the further review of industry code governance[3], they estimate the costs to customers across the industry of the code administration of the MRA, BSC, DCUSA, UNC, SEC and SPAA for 2015 significantly exceed £10m. Based on this estimate, a 2017 research paper from the University of Exeter[4] extrapolated the total cost of running the code administration system to be in the order of £20m-£25m a year. This impact assessment relies on analysis produced by Elexon, estimating the current cost of code administration to be around £30m. Each of these estimates covers only the direct costs arising from code administration, not their wider impact on industry participants.

Rationale for intervention

6. In June 2016, the Competition and Markets Authority (CMA) published its Energy Market Investigation Final Report[5]. 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

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

[2] Connection and use of system code (CUSC); grid code (GC); system operator – transmission owner code (STC), balancing and settlement code (BSC), meter registration agreement (MRA); distribution connection and use of system agreement (DCUSA); distribution code (DC); smart energy code (SEC); uniform network code (UNC); supply point administration agreement (SPAA); independent gas transporter uniform network code (IGTUNC); retail energy code (REC).

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

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

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

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.

7. 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[6] and net zero.

8. 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.

9. 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)[7]. These working groups and the appropriate preparatory work to participate in them implies proportionately larger cost to smaller firms.

10. In addition, the CMA found that there were 11 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.

11. 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.

12. 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.

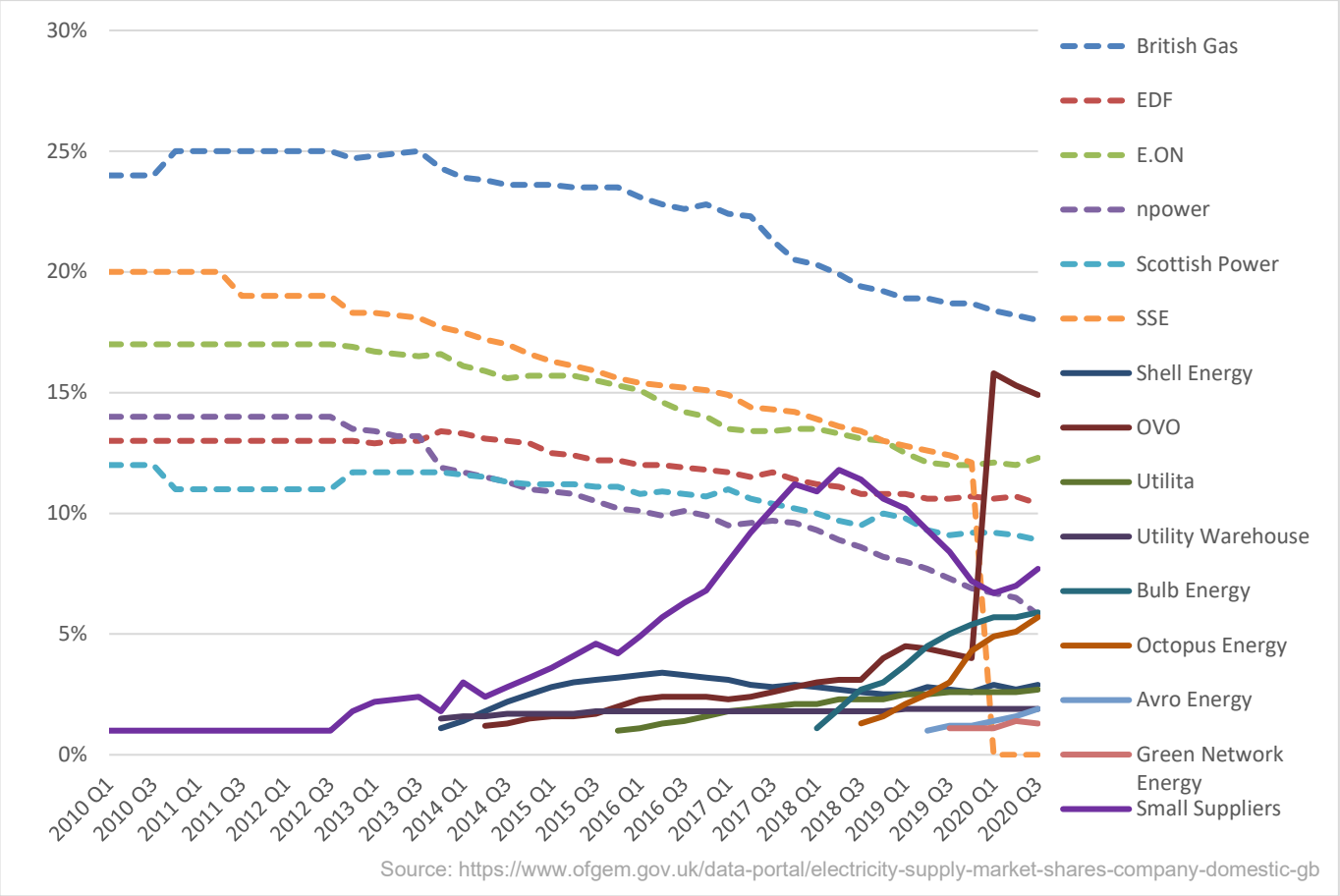
13. Without significant reform, changing codes will remain a lengthly process under the current code governance process. The framework was designed around a market structure of the past – where a small number of relatively similar, large, and well-resourced participants were able to reach consensus on 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 paralyse the consensus-based decision-making process, meaning that change is slow.

[6] 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

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

14. The recent rise of smaller electricity suppliers is an example of the changing market structures. The dashed lines in Chart 1 below show the large incumbent energy suppliers ('big six') have lost market share in recent years, from almost 100% of the market in 2010 to 70% of the market in 2020[8]. A variety of smaller suppliers have entered the market using new business models beyond the traditional role of a supplier of just supplying electricity and gas. For example, Utilita and Octopus Energy offer smart home solutions such as electric vehicle or battery storage integration alongside specific tariffs. Under the current system, these smaller firms have relatively little power to determine the code governance landscape.

Chart 1: Electricity supply market shares by company: Domestic (GB)



Source: https://www.ofgem.gov.uk/data-portal/electricity-supply-market-shares-company-domestic-gb

15. These proposed 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[9] with potential roles and responsibilities across both gas and electricity. This independent system operator is referred to as the future system operator (FSO).

Policy objective

16. 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. 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:

    a) 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.

[8] SSE was acquired by OVO Energy in January 2020, therefore OVO are included in the 70% market share estimate for the current 'big six'.

[9] 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

b) The framework should be able to accommodate a growing number of market participants with effective compliance.

c) 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.

d) 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.

17. In addition, the code reform intends to enable a faster and more effective consolidation of codes to follow, either by Ofgem or the IRMB, through the prioritisation of code consolidation.

Options considered

18. The 2019 consultation on energy code reform discussed two broad options, namely a strategic body with separate empowered code managers, and an Integrated Rule Making Body (IRMB) which combines the strategic and code management functions. This Impact Assessment considers these two policy options with greater detail provided on their design and feasibility as part of the consultation, such as the roles and responsibilities of both functions and the role of industry in the code change process. Both options are expected to achieve the four key outcomes described above and are assessed relative to the 'do nothing' counterfactual.

e) **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 is maintained, no additional costs or benefits are generated from this option. The code change routes would remain as they currently are.

f) **Option 1 – Ofgem as strategic body (preferred option):** Under this option, Ofgem would take on the role of the strategic body, with enhanced code manager roles and responsibilities assigned to a separate organisation(s)[10]. The strategic body 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. As the strategic body, Ofgem would also lead policy development and consultation on complex changes impacting several codes and decide on code changes that have a material impact on consumers, competition, and the operation of the market. Code managers would take on most of the responsibilities that are currently held by code panels, including proposing code changes, leading most of them, and taking decisions on non-material code changes. Code managers would be appointed by the strategic body once a decision on code consolidation is made and would be accountable to Ofgem. We expect this option would be implemented from 2024.

g) **Option 2 – FSO as IRMB (alternative option):** In this option, the Future System Operator (FSO) would take on the role of the IRMB. The IRMB would combine the strategic and code management functions in one organisation, fulfilling the responsibilities outlined above in Option 1. The strategic and code manager functions would work closely to deliver the strategic direction. The IRMB as a whole would be accountable to the FSO board, and via this to Ofgem. This would be implemented from 2026, when we have assumed the new independent FSO is fully set up and in a position to take on the role of the IRMB.

19. Both options would require primary legislation to implement, which is likely to come into force in the first quarter of 2023.

Monetised costs and benefits

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

20. This section sets out the quantified costs and benefits associated with the respective options. Where evidence allows, we have quantified the major costs of code reform, and provided evidence of the direct benefits to industry which would arise. A 10-year time horizon has been chosen for analysis, beginning in 2024 when the earliest costs and benefits are expected under Option 1. In Option 2, however, the costs and benefits of the IRMB do not begin to be accrued until 2026.

21. The benefits which can be quantified are the savings to industry from participating in a streamlined code modification process due to the greater responsibilities taken on by the code management function (either as a separate body or within the IRMB). This takes the form of lower costs to industry for responding to consultations and participating in code change workgroups. It has not been possible to quantify the wider benefits which arise from code reform, such as the removal of barriers to the market for firms, nor the potential achievement of net zero at least cost. These are discussed further in the Non-Monetised Costs and Benefits section.

22. The costs of code reform are more straightforward to quantify. These are: the cost of establishing a strategic function and the cost of the code management function, whether as separate bodies or with both functions sitting within the IRMB.

Benefits

Counterfactual estimate

23. 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.

24. 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[11] to assess the number of consultations for Authority Consent and Self-governance modifications[12] that had occurred in 2019/20[13] 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 1. 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.).

25. 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[14]) to provide an estimate of the total number of workgroup participants per year. This was multiplied by data from code administrators (Table 1) on the effort

[11] https://www.ofgem.gov.uk/publications-and-updates/code-administrators-reporting-metrics

[12] Where a code modification is classified as 'self-governance', the relevant code panel, or in some cases, code parties, will make the final decision on whether to approve implementation of the modification. Where a code modification requires Authority consent, Ofgem will make the final decision on whether to approve implementation of the modification.

[13] Data from 2019/2020 has been used as the most recent data available and due to the granularity of the data (e.g., mean number of respondents to consultations per quarter).

[14] Data from 2019/2020 has been used as it is the most recent data available and to ensure alignment with other data sources. These figures are in line with the four-year average of 149 code changes per annum between 2016 and 2020.

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

Table 1: 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.

Industry savings to consultation costs (applies to Options 1 and 2)

26. 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.

27. 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.

Industry savings to workgroup participation costs (applies to Options 1 and 2)

28. 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 or the IRMB 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.

29. 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 or the IRMB 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 or IRMB 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.

Costs

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. For the code management function, however, the costs correspond to the additional responsibilities taken on by code managers relative to those currently carried out by code administrators.

31. As outlined in the background, the exact costs of code administration under the current system are uncertain, however, there are some external estimates. A 2017 research paper from University of Exeter[15] extrapolated the total cost of running the code administration system to be in the order of £20m-£25m a year. This impact assessment uses analysis produced by Elexon, estimating the current cost of code administration to be around £30m based on 2019 data. This represents a more up to date estimate of the costs of code administration under the current system.

Cost of Strategic Body function (applies to Options 1)

32. The creation of a strategic body within Ofgem will incur estimated ongoing costs of around £2 million a year to Ofgem from 2024. These costs will have 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. The operating costs would include elements such as salaries, travel, and IT costs.

33. To estimate the additional costs of Ofgem taking on the strategic body function, we assume, based on consultation with Ofgem, that 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, 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 body function.

34. Several simplifying assumptions are made in order to arrive at the estimated cost of Ofgem being the strategic body. First, we do not include any start-up costs relating to the costs of recruitment or of building up expertise. Second, we assume that the new employees can be accommodated within current Ofgem offices and that no new office space is required. Third, we assume that the grade profile of the additional employees mirrors that of Ofgem as a whole. These estimates will be developed during consultation as more detailed workforce planning of the strategic body is undertaken.

Cost of Code Manager function (applies to Options 1)

35. If sitting in a separate organisation under the strategic body, 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. These tasks could include identifying and developing changes to the codes, making recommendations to the strategic body, 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.

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

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

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.

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 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 to the estimate of the costs of code administration under the current system.

IRMB (Option 2)

40. We estimate the cost of the Future System Operator as IRMB option to be the sum of the Ofgem strategic body function and the independent code manager function, with an additional 10% efficiency saving arising from the integration of the two functions within one body. This gives an annual cost of the IRMB of around £33 million a year (in 2020 terms) from 2027.

41. Ongoing costs are assumed to be lower under the IRMB option. While the staff level required is likely to be similar under Options 1 and 2, the IRMB may have lower overhead costs (for example a single IT system or HR department) if they can be split across all code management and strategic functions in the single IRMB. The integrated body efficiency assumption of 10% is a conservative estimate of the possible efficiency savings and is in line with high-level cost savings of commercial mergers by M&A advisors. It has not been possible to quantify within this efficiency saving the fraction of material code changes which would still require Ofgem decisions based on retained EU law, though these would represent a transfer of costs, rather than additional costs.

Summary of quantified analysis

42. While the annual costs of the two options considered are broadly in line, they differ with regard to the speed at which they can be implemented, leading to a variation in NPV over a ten-year time horizon. In Option 1, where Ofgem is the strategic body and independent code managers are a separate body, the costs and benefits are expected to accrue from 2024. This gives a quantified NPV of -£295 million over a ten-year time horizon in the central scenario. However, in Option 2, where the FSO takes on the role of the IRMB, the occurrence of the benefits and costs is expected to be delayed until 2026, meaning they are measured over eight years rather than ten years. This is due to the need to first establish the FSO, before the time taken for it to take on the IRMB. In this case, the quantified NPV is -£208 million in the central scenario. Central scenario cost estimates are presented in table 2.

Table 2: Central scenario additional cost and benefit estimates

	Option 1: Ofgem as strategic body	Option 2: FSO as IRMB
Benefits (Annual, not discounted, 2020£)		
Workshop cost savings	£1.5m	£1.5m
Consultation cost savings	£0.3m	£0.3m
Costs (Annual, not discounted, 2020£)		
Code Manager costs	£35m	-
Ofgem as strategic body costs	£2m	-
FSO as IRMB	-	£33m
(2020 £)		
Total Costs PV	£310m	£220m
Total Benefits PV	£16m	£13m
Total NPV	-£295m	-£208m
BCR	0.05	0.06

43. Comparing the benefit to cost ratio of the two options considered reveals the quantified impacts are broadly similar across both options with the time at which options take effect the key feature distinguishing options. As noted above however, whilst central monetised estimates provide negative net present values and low BCRs for both options, only the peripheral benefits to intervention have been possible to quantify leaving the main benefits from the reforms unquantified, whilst the major costs to intervention have been quantified.

Sensitivities

44. 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, a 'high' and 'low' cost scenario 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, therefore sensitivities focus on this assumption. However, a full description of the impact of a change in assumptions is provided in Annex 2, table 8.

45. 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 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.

46. 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.

47. The validity of these assumptions will in part, be tested through consultation. However, sensitivity analysis highlights that under a range of assumptions, these quantified costs are still likely to outweigh quantified benefits.

48. The results of modelled high and low scenarios are presented below in Table 3 (Option 1) and Table 4 (Option 2). Under Option 1, the monetised Net Present Value is a net cost of between around £147m to around £478m over the 10-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. Benefits also vary significantly depending on assumptions, however, these are small when compared to the costs in each scenario and as a result are not the focus of discussion here.

49. Option 2 presents a slightly improved benefit to cost ratio (BCR) when compared with Option 1, signalling the additional efficiency benefit that integrating code management and strategic functions is expected to bring, with low, medium, and high scenarios illustrating efficiency savings between 5% to 15% under the IRMB option.

Table 3: Option 1 - Ofgem as the Strategic Body

	Costs PV	Benefits PV	Total NPV	BCR
High	£482m	£3.3m	-478m	0.01
Central	£311m	£16m	-£295m	0.05
Low	£180m	£34m	-£147m	0.19

Table 4: Option 2 - FSO as the IRMB

	Costs PV	Benefits PV	Total NPV	BCR
High	£361m	£2.6m	-£358m	0.01
Central	£220m	£13m	-£208m	0.06
Low	£121m	£27m	-£94m	0.22

Non-monetised costs and benefits

50. While it is possible to monetise the major costs of the two options, only a fraction of the benefits can be quantified. As such, it is important to look at the non-monetised benefits in tandem with the monetised benefits when assessing the two policy options. All unmonetisable impacts are assumed to be deliverable through both Options 1 and 2. However, unmonetisable costs are likely to be larger under Option 2.

Benefits

<u>Greater alignment of code modifications with consumer interests</u>

51. The primary benefit is the reduced time and effort taken for the implementation of modifications in the interest of the consumer, even in cases where these interests are not aligned to those of parts of industry. More efficient and effective code modifications will allow the benefits of individual code modifications to be achieved more fully and potentially realised faster. The need for code governance reform is greater in the context of net zero, where current arrangements could result in an increase in the magnitude and frequency of delayed benefits due to the whole system change required in industry. These delayed and inhibited code changes are likely to result in a direct cost to industry from less efficient code processes and an indirect cost to consumers,

through relatively higher energy bills. To illustrate the impact of these delays, two case studies are provided.

52. 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 to the current code change process, the scale of the benefits delayed, and the length of the delays. 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.

Case study 1 – P272:

53. The CMA report details code modification 'P272'[16]. This is an example of a code modification with clear principles, but which was slow to enact. 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.

54. Process summary: The modification was proposed in 2011 by SmartestEnergy, a small electricity supplier to large industrial and commercial organisations, but was not implemented until 2017, three years after it was approved. 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[17] estimated that if mandated by 2014, the modification would incur a net benefit of around £50m over the first 5 years.

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

56. 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.

57. 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.

58. 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.

59. 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

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

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

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.

60. 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.

61. 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.

62. 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.

63. 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):

64. 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.

65. 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[18], concluding that none were compliant with TAR NC and therefore could not be implemented.

66. 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))[19] on 28th May 2020.

67. 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, eleven proposals were sent to Ofgem and all eleven were rejected on compliance grounds.

68. 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

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

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

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.

69. Issues faced with UNC678: Of the eleven 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 nine 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.

70. 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.

71. Lessons learned: There is no filter to prevent clearly non-compliant modifications from being proposed and an incentive for industry to propose unjustified proposals to further their vested interests and lay the burden on Ofgem, the code administrator, or wider industry. In addition, Ofgem is 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.

Greater alignment with HMG strategic direction

72. 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. 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.

73. While tools such as the Significant Code Review (SCR)[20] 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. An established strategic function would enable industry codes to align with Government policy more closely, delivering, for example, decarbonisation and consumer protection objectives by proactively identifying and prioritising relevant modification changes. The strategic function could also help co-ordinate and lead cross-sector reforms, where strategic priorities are complex and cut across multiple areas of the energy system.

74. The enhanced responsibilities of the code management function 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 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.

Lowering costs of participation for small firms

[20] 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

75. 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.

76. The policy options are 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. 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 will 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.

77. This benefit of code reform will 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.

Costs

Learning and familiarisation costs

78. Both policy options considered present learning and familiarisation costs to all stakeholders in the codes process.
    a. Under Option 1, there would be costs incurred by Ofgem as it familiarises itself with the setting of the strategic direction and overseeing code managers. The code managers would also face costs as they acclimatise to their responsibilities.
    b. Under Option 2, the FSO would incur similar costs as it familiarises itself with the strategic and code management functions.
    c. Under both options, there are costs to industry of familiarising themselves with a new code modification process.

79. It is difficult to assess the magnitude of these impacts, however, they are likely to be larger under option 2, since the FSO will be a new body, and therefore have wider learning and familiarisation costs that may impact the implementation of the codes, such as setting up an effective organisational structure.

Switching values

80. The unquantified benefits of code reform need to amount to at least £35m per year under Option 1 or £31m per year under Option 2, in order for the intervention to have a BCR of 1. Two possible benefits to achieve this are examined: first, addressing the delayed benefits of code changes under the current system; second, offsetting the increased cost of the code management function through more firms acceding to the codes, lowering the burden on individual firms.

81. First, it is likely the majority of these benefits will come from reduced delays to code modifications as illustrated by the case studies outlined above. High-level analysis based on estimates put forward during the P272 code change process suggests that the delayed benefits of this case study are likely to be in the millions of pounds per year. Given the cost and frequency of delays may be likely to increase in the context of net zero, it is expected that the aggregate impact of delays exceeds the £35m per year for Option 1 or £31m per year for Option 2 required for the BCR to have a BCR of 1.

82. Second, the policy options are pro-competition as they would enable firms to enter the market and reduce the costs of participating in the code change process. This pro-competitive effect is expected to increase the number of competing firms participating in the energy system, likely reducing the costs of achieving energy system. This increased competitive pressure can 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, Uncertainties, and Assumptions

Risks and Uncertainties

Risk of delays

83. There is a risk that the cost of implementation and delivery timelines may overrun. For Option 1, this could be in the form of delays to the tendering of code managers delaying the system by several months. Work on the development of a clear and robust implementation delivery plan is intended to mitigate this.

84. For Option 2, the implementation of an integrated rule making body is dependent on timelines related to and determined by negotiations with National Grid and therefore the potential for delays is greater.

Uncertainty to industry participants

85. A change in governance framework is likely to create uncertainty to affected firms which may inhibit or delay investment and strategic decisions. Under Option 2, where the FSO will act as the IRMB, there is additional uncertainty created due to the longer timeframe until implementation.

Unknown uncertainties

86. The energy system is undergoing a period of rapid transformation and as such, there are likely to be risks that are currently unknown. To mitigate this uncertainty, careful consideration will be given as to how the strategic function, either taken on by Ofgem or as part of the IRMB, can be equipped and incentivised to address new challenges.

Assumptions

87. Several assumptions are made throughout the quantified analysis. We would welcome any views on how these assumptions could be strengthened or amended. Please provide evidence to support your response.

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

    a) 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.

    b) 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. It is then assumed that these send backs do not account for the hidden cost of industry engaging in code modifications that they do not provide a formal response to. This provides the rationale for our central efficiency scenario of 20% consultation cost savings.

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

    c) Assumption 3: 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.

    d) Assumption 4: 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.

e) Assumption 5: 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[21] 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.

90. When calculating the cost of the strategic function (either for Ofgem or as part of the IRMB):

f) Assumption 6: In discussion with Ofgem, we assume that carrying out the strategic function 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. Cost estimates include for the additional cost of consultants and other external expenses.

91. When estimating the cost of the IRMB (Option 2):

g) Assumption 7: It is assumed that the cost of the IRMB is 10% lower than the combined costs of the strategic function sitting with Ofgem and a separate code manager function, as a result of efficiency savings arising from integration, such as lower overhead costs (for example a single IT system or HR department). This estimate of the possible efficiency savings is in line with high-level cost savings of commercial mergers by M&E advisors.

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

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

Wider Impacts and Distributional Effects

Wider Impacts

93. 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.

94. 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. Both Options

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

1 and 2 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.

- **Consumer Confidence:** As the proposals are aimed at improving competition and ensuring that code governance arrangements take more account of consumers' interests, consumer confidence should increase as a result of the proposals. This could lead to more engagement with the market, leading to greater competitive pressure and lower prices.

Distributional Effects

95. An initial assessment of the distributional impacts across groups and time is detailed in table 5. 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.
96. To ensure full compliance with the Public Sector Equalities Duty (PSED) under the 2011 Equality Act the accompanying consultation is seeking responses on how proposals may impact those with protected characteristics in different ways than those that do not share them. For the IRMB option, responses and the subsequent due consideration of these protected characteristics will also be considered in tandem to the PSED responses sought as part of the consultation on the FSO, released alongside this consultation.

Table 5: *Distribution of impacts over groups and time*

Group	**Costs**	**Benefits**	**Time-horizon for costs and benefits**[22]
HMG	Internal costs of Codes Reform project Learning and familiarisation costs	Greater strategic alignment of energy sector More flexible, responsive, and innovative energy system.	Internal costs of code reform expected to occur 2021-2022 (Option 1) benefits and familiarisation costs begin in 2024 (Option 2) benefits and familiarisation costs begin in 2026
Future System Operator	(Option 2) Cost of being IRMB (central estimate of around £33m per year) Learning and familiarisation costs	Greater strategic alignment of energy sector (Option 2) – greater control over codes process More flexible, responsive, and innovative energy system.	All costs and benefits begin in 2026, when the FSO is assumed to be fully set up and in a position to take on the role of the IRMB.
Ofgem	(Option 1) Cost of being strategic body (central estimate of around £2m per year)	Greater strategic alignment of energy sector More flexible, responsive, and	Internal costs to Ofgem begin in 2023 with additional costs of operating the strategic body (Option 1) beginning 2023.

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

	Internal resource to participate in Codes Reforms project Learning and familiarisation costs	innovative energy system.	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.	Internal costs to code managers expected to begin 2024 after the tendering process. All other costs and benefits are dependent on option and will begin in either 2024 (Option 1) or 2026 (Option 2)
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 costs Reduced consultation costs Reduced requirement to carry out code manager responsibilities. Faster codes process increasing market flexibility. Reduced barriers to participating in code modification process.	Internal costs to code managers expected to begin 2024 after the tendering process. All other costs and benefits are dependent on option and will begin in either 2024 (Option 1) or 2026 (Option 2)
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 costs Reduced consultation costs	Internal costs to code managers expected to begin 2024 after the tendering process. All other costs and benefits are dependent on option and will begin in either 2024 (Option 1) or 2026 (Option 2)
Energy end users (*Industrial and household consumers***)**		Increased number of code modifications prioritising consumer interests.	Benefits may begin to accrue from beginning of the chosen options implementation.

		Reduced energy bills relative to baseline in long-run.	

Business Impact Assessment

97. BEIS considers these measures to be pro-competition and therefore to fall out of scope of business impacts. According to the Better Regulation manual[23], a regulatory measure needs to satisfy all of 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 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 strengthen the ability of small parties to engage in the code modification process and compete more effectively in the industry.

    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 criteria described above is considered to be the most relevant and most likely to materialise in this context. 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.

    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. The proposed package will allow us to alter code governance enabling it 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 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 the move to a low carbon system that is both secure and affordable. Further analysis will be completed following information received in response to the consultation questions.

Small and Micro Business Assessment (SaMBA)

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

98. BEIS's Business Population Estimates[24] 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, there has been around a 300% increase in the number of SME 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 sector, which will be expected to increase further in the future, as more decentralised systems allow for a greater degree of small-scale generation.

99. For gas, the role of SME 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 6 - Number of employers in the private sector, Electric power generation, transmission and distribution industry group, UK, beginning of 2020[25]

	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 7 - Number of employers in the private sector, Manufacture of gas; distribution of gaseous fuels through mains, UK, beginning of 2020[26]

	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*

100. 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

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

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

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

smaller parties did not have the resources to be involved in every modification or even to suggest modifications themselves[27]

101. 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[28], the scheme[29] 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 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.

102. The proposed changes to the codes system may lead to short term administrative burden and familiarisation costs for micro and small businesses already in the electricity and gas sectors, but there are substantial benefits. 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 a strategic body 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.

103. Overall, we would expect the costs to be outweighed by ongoing benefits from lower costs of interacting with the codes, and the code changes the proposals enable should level the playing field for smaller businesses.

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

[28] https://www.ofgem.gov.uk/news-blog/our-blog/how-ofgem-s-innovation-link-supports-low-carbon-projects

[29] Launched December 2016

Summary

104. It has been possible to quantify the major costs of code reform. For Option 1, the establishment of Ofgem as the strategic body is estimated to cost around £2 million per year, while the estimated cost of the new code managers is £35 million per year. For Option 2, these two functions are combined within the IRMB, at an estimated cost of £33 million per year due to the efficiency savings expected.

105. While it is possible to monetise the major costs of the two options, only a fraction of the benefits can be quantified. These are in the form of savings to industry from responding to consultations, estimated to be around £300,000 per year, and participating in workgroups, estimated to be around £1.5 million per year, as part of the code change process.

106. For both options, the quantified costs and benefits give a negative net present value (NPV). While the annual costs of the two options considered are broadly in line, they differ with regard to the speed at which they can be implemented (subject to the will of Parliament), leading to a variation in NPV over a ten-year time horizon. In Option 1, the costs and benefits are expected to accrue from 2024 giving a NPV of -£295 million over a ten-year time horizon in the central scenario. However, in Option 2, the occurrence of the benefits and costs is expected to be delayed until 2026. In this case, the NPV is -£208 million in the central scenario.

107. Due to the barriers to quantifying some of the benefits, however, the monetised costs and benefits must be evaluated in tandem with the non-monetised costs and benefits. The two case studies outlined, in addition to the benefits of closer alignment to government policy and the lower costs of participation for small firms, provide a stronger argument for the need for code reform as addressed by the two policy options.

Annex 1

Rationale and Evidence Justifying Level of Analysis in IA

108. The approach used in this Impact Assessment is deemed to be proportionate for a consultation IA. 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.

109. The analysis of impacts builds on the 2019 consultation IA on codes reform by acting on informal advice provided by the Regulatory Policy Committee to quantify costs and benefits where possible. Where potential impacts remain unquantifiable, we have looked to quote separate analysis or referred to existing measures and policies to provide an indication of the potential costs and benefits of the proposed measures.

110. We have also provided an initial assessment of risks and uncertainties and the key distributional impacts that are likely to occur.

Monitoring and Evaluation

111. This policy intends to achieve four key outcomes that are deemed to contribute to enabling the GB energy market to meet net zero at least cost. These are:

a) 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.

b) The framework should be able to accommodate a growing number of market participants with effective compliance.

c) Codes should be agile and responsive to change, while able to reflect the commercial interests of different market participants.

d) 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.

112. An initial theory of change is presented in Chart 2. This illustrates how the intervention intends to achieve the four policy outcomes and is applicable under both policy options considered. Whilst code simplification is out of scope for this impact assessment, it is included in the theory of change since it is expected that the simplification process will happen faster under code reform when compared to the status quo.

113. To assess the performance of this policy intervention against these four outcomes it is likely that a mix of quantitative and qualitative indicators will be required, some of which may require additional data collection.

114. For policy outcome 110(a), 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. This indicator has the benefit of being easily benchmarked and comparable across time, however, is likely to be incomplete and therefore may only be useful when considered in tandem with the qualitative perceptions. Government may choose to assess current stakeholder perceptions in order to provide a benchmark for comparison in subsequent years.

115. For policy outcome 110(b), it is likely that quantitative measurements on the ‘number of market participants’ and ‘number of compliance violations’ is likely to indicate the success of this outcome These indicators would have the advantage of being easily benchmarked and compared across time, however, additional data may be useful to consider the quality and stringency of

enforcement of codes compliance, which is not guaranteed to be constant over time and may partly explain changes in the number of compliance violations observed.

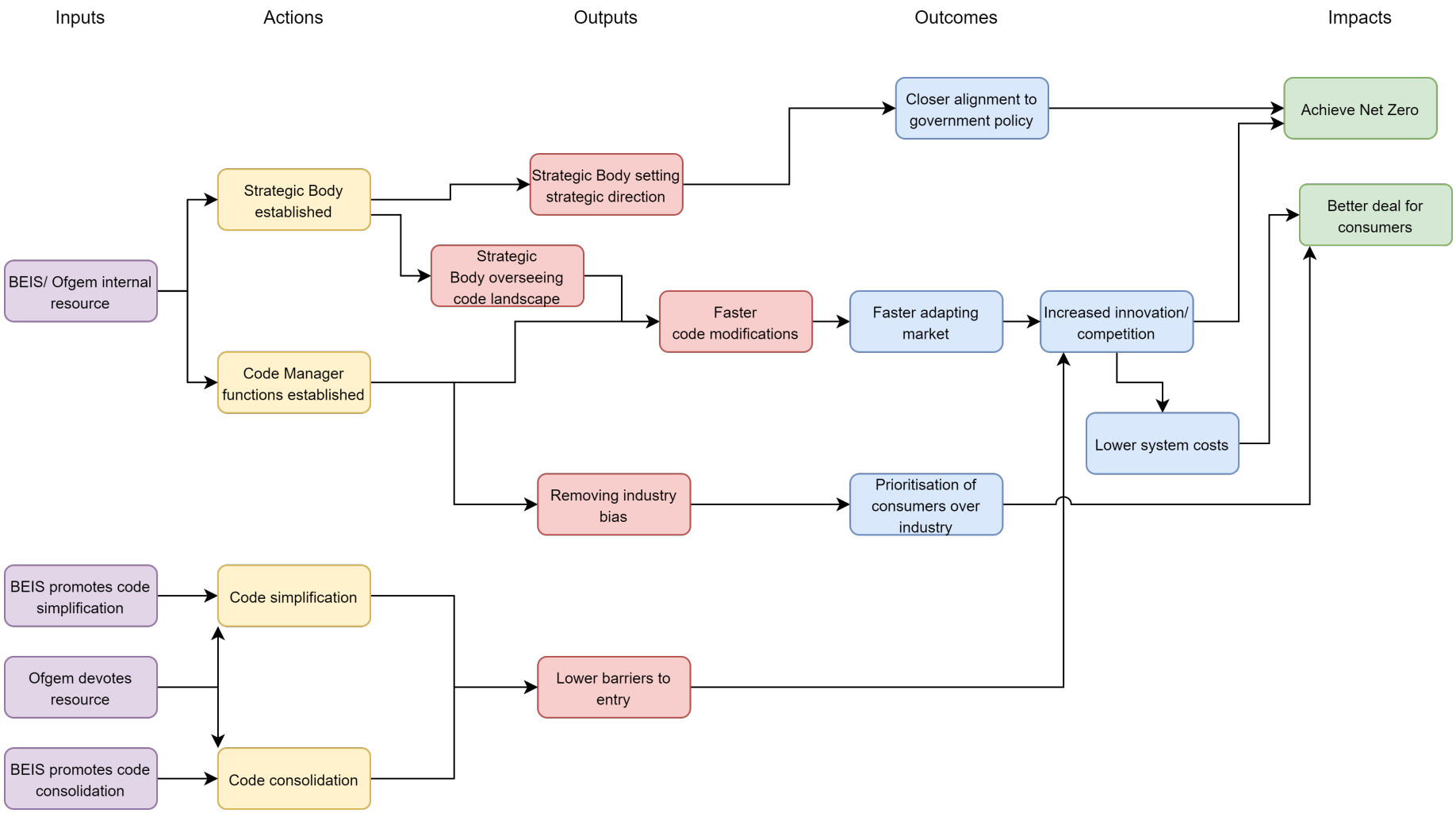
116. For policy outcome 110(c), the responsiveness of codes to changing market needs could be informed by a mix of qualitative and quantitative measures. Qualitatively, measuring stakeholder perceptions may be useful since no code reform is identical and therefore, no quantitative indicator is likely to fully capture the multidimensionality of agile codes. Quantitatively, there may be value in measuring the average time of code modifications (both material and non-material separately) since they are likely to be easily benchmarked and comparable over time given that differences in code modifications are likely to even out over a large number of code modifications.

117. For policy outcome 110(d), the accessibility of the market is likely to be measurable using both quantitative and qualitative indicators. Quantitatively, these 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. Qualitatively, measures of stakeholder perceptions and their performance in understanding rules applicable to them may be useful.

118. 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, however, further work will be required to consider how milestones can be attached to each outcome.

119. Similarly, there is no clear timeline for evaluation. Given a primary objective of this policy intervention is to help enable the GB energy sector to achieve net zero, one possible use of evaluation could be to inform BEIS, Climate Change Committee and Ministerial decisions when setting future Carbon Budgets, or adjusting domestic policies in order to meet Carbon Budgets in the nearer term. Therefore, evaluation could be conducted in line with the timescales of future Carbon Budget setting. There may also be benefit in evaluating the success of the intervention over a longer time horizon too, in order to fully assess the realisation of intended policy outcomes. This longer-term evaluation could provide important lessons for other countries intending to decarbonise their energy sector.

Chart 2: Initial Theory of Change



Annex 2: Modelled high and low scenarios

Table 8: Scenarios to test assumptions

		Scenario			
Calculation	**Parameter**	**high cost**	**Central**	**low cost**	**Description of assumption scenarios**
Consultation cost savings	Code reform efficiency savings	10%	20%	50%	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	halved	as given	increased by 50%	Illustrative +-50% to provide a range.
Workgroup costs savings	Participants per workgroup	8	10	12	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	Efficiency savings (i.e. reduced workgroup requirements)	13%	25%	25%	
Workgroup costs savings	Cost per industry participant	halved	as given	increased by 50%	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% higher for other code administrators than Elexon. 10% 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% lower for other code administrators than Elexon. 50% 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 to act as strategic body	Ofgem as strategic body: number of employees	45	30	20	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.
Option 2 - Cost to FSO to act as IRMB	FSO as IRMB - efficiency saving	5%	10%	15%	M&E evidence from the mergers of other organisations suggests integration of the strategic body and code management functions may result in efficiency savings of between 5-10%, these inform the low and central scenario. An efficiency saving of 15% is chosen as the high scenario to illustrate the potential for larger savings than suggested by historic evidence.