

Guidance

Impact Assessment Guidance

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Contact:	Harvey Beck
Team:	Office for Research and Economics
Telephone:	020 7901 7088
Email:	harvey.beck@ofgem.gov.uk

This guidance covers the content of Ofgem Impact Assessments (IAs). It sets out our general approach and is consistent with government guidance on the appraisal of projects, programmes, and policies. It explains what we regard as best practice in the areas we regulate, provides bespoke guidance on areas important to the net zero transition in energy and indicates where to find more information. People who want a general appreciation of what to expect from an Ofgem Impact Assessment may find Chapters 1 to 4 sufficient. For those that need a greater insight into the approaches used, such as analysts that must complete them, or decision-makers that need to interpret them, the remaining text will be essential reading. The text includes four grey boxes that provide a deeper dive into related IA guidance and specific analytical issues.

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Ofgem

10 South Colonnade

Canary Wharf

London

E14 4PU

United Kingdom.

Alternatively, please call Ofgem on 0207 901 7000.

This publication is available at www.ofgem.gov.uk. Any enquiries regarding the use and re-use of this information resource should be sent to:

psi@nationalarchives.gsi.gov.uk

Contents

Foreword	4
Executive Summary	6
1. Introduction	7
2. What is an IA?	11
Scope	11
3. When will Ofgem do an IA?	15
Screening	15
Criteria for Determining Importance	16
IAs produced outside the scope of statute.....	16
IAs of industry code modifications	17
Multi-stage IAs.....	18
When we will not do a statutory IA	18
4. ROAMEF and Better Regulation Framework	20
5. Application of ROAMEF and Better Regulation Principles to our IAs	23
Rationale.....	23
Objectives	23
Appraisal.....	24
Monitoring and evaluation	25
Feedback.....	25
How to present an IA	25
6. Guidance on appraisal elements in common to all our IAs	27
Define counterfactual and factuais.....	27
Transfer payments.....	28
Price bases, discounting, and social time preference rate.....	28
Summarise monetised costs and benefits	30
Account for non-monetary factors	31
Risk and Uncertainty	31
Wider impacts and unintended consequences	37
Identifying the preferred option	37
Monitoring and Evaluation	38
7. Guidance on specific impacts	40
Environment.....	40
Distributional Analysis	44
Security of supply	48
Competition and financial resilience	49
Climate Resilience.....	50
Public Sector Equality Duty.....	51
Economic Growth.....	51
Transformational change.....	52
8. Consultation	54
Appendices	56

Foreword

When Ofgem makes decisions on energy policy and regulation within our powers, we must do so in a way that meets the principal objectives and General Duties of the Secretary of State and the Authority, under legislation. Broadly, these are decisions that best protect the interests of existing and future consumers of electricity and gas, but now also include objectives in relation to the licensing of carbon dioxide (CO₂) transport and storage and protecting the users of these networks. At the proper time, objectives in relation to the regulation of heat networks will also be relevant.

References to the "Authority," "Ofgem", "us", "we", "our" are used interchangeably in this document. The Authority refers to GEMA, the Gas and Electricity Markets Authority. The Office of Gas and Electricity Markets (Ofgem) supports GEMA in its day-to-day activities.

An impact assessment (IA) is a proportional analysis of the likely impact of a potential decision and close alternatives. The decision may have a significant impact on consumers, the environment, businesses engaged in energy generation, transport, supply, or businesses involved in networks for transporting and storing carbon dioxide. Therefore, IAs play a key role in Ofgem's decision-making process by providing a clear, consistent, and structured way to present impacts. Decision-makers and stakeholders can then take a holistic view and weigh up any trade-offs that must be made.

This document is an update to our previous guidance, published in May 2020. It explains our general approach to how we assess and present the impact of our proposed decisions. It is designed to be accessible by various users. The first four chapters are for general information. They place IAs in the context of our statutory duties and powers, explain what you might see in our IAs, the circumstances when we will do an IA or not, and where they sit in the high-level policy development and review cycle (Rationale, Objectives, Appraisal, Monitoring, Evaluation, Feedback ie ROAMEF) described in [The Green Book: Central government guidance on appraisal and evaluation \(PDF, 1,320KB\)](#) and the [Better Regulation Framework guidance \(PDF, 798KB\)](#). Detailed guidance for those completing IAs is provided in the remaining chapters. We have tailored this guidance to reflect our past IA experience and address both general issues and specific issues that analysts encounter when developing IAs.

We will keep our guidance under review and will update it periodically as appropriate, for example when there is a material change in our duties, that affect the underpinning economic and assessment concepts.

In this iteration of our guidance, we are primarily revising it to identify new duties and amend references to legislation. These changes do not fundamentally change the IA

concepts normally used. Nevertheless, we have taken the opportunity to provide examples of the approaches that we use and what you may expect from our IAs. As always, we welcome views on the content. You can get in touch with us with any feedback or suggestions for improvement by emailing the Office of the Chief Economist at chief.economist@ofgem.gov.uk.

Executive Summary

As a regulator we make a broad range of decisions that affect energy consumers across Great Britain. Some decisions consider changes to long-standing charging regimes to help adapt to new needs, approve funding arrangements for discrete projects such as interconnectors, and addressing competition issues within markets or the provision of infrastructure. Others may be strategic in nature, such as how to help government meet its carbon budget delivery plans and achieve the required energy system transformation. In all these areas we must assess the consequences of action or inaction and the trade-offs between separate groups when making policy decisions.

Our impact assessments (IAs) help us to identify what we believe is best to do in different situations. Our guidance on our approach to conducting IAs addresses those matters to which the Authority must have regard in reaching its decisions. It reflects best practice and ensures that our approach to developing the evidence underpinning our decision-making continues to be proportionate, consistent, and transparent.

Since December 2003, we have had a duty within statutory legislation to either carry out IAs for proposals that we consider important, or to publish a statement setting out our reasons for not undertaking one. Even when we are not legally required to carry out an IA, we will consider whether doing so would be appropriate and proportionate in the circumstances or greatly aid transparency.

This document explains how we use an IA to support decisions with robust evidence and analysis. It follows closely the recommended approach to policy making from the Better Regulation Executive and His Majesty's Treasury Green Book.

Changes relative to our previous guidance include:

- Additions to refer to our new growth duty, net zero duty and new statutory powers with respect to the regulation of carbon dioxide transport and storage networks
- Amendments to how we measure impacts on distinct groups of domestic consumers following improvements to our methods and data
- Revision to the way we document the impacts of our proposals on net zero pathways in the light of our new net zero duty
- Additional signposting to new external guidance relevant to our IAs.

The purpose of these changes is to help us better understand the consequences of available options and ensure that our policy and analytical processes are aligned with our strategic priorities and statutory duties.

1. Introduction

Section summary

This section provides a brief overview of our various statutory duties and how we interpret them through the Consumer Interest Framework. It highlights the wide variety of decisions we take. It also provides links to key central government documents which shape our approach to IAs. While an IA is an important aid for decision-makers and usually based on standard economic tools, many other factors can influence a final decision.

- 1.1 Ofgem's principal objective is to protect the interests of existing and future consumers. These are defined in legal terms under the [Gas Act 1986](#) and [Electricity Act 1989](#), [Utilities Act 2000](#) and [2023 Energy Act](#). The interests of consumers include their interests in the Secretary of State's compliance with the net zero 2050 target and associated carbon budgets, Security of Supply of Gas and Electricity, and the fulfilment of designated regulatory objectives originating in EU law. We must carry out our functions in the way best calculated to further our principal objective and, where appropriate, by promoting effective competition between persons engaged in the regulated activities.
- 1.2 The [2023 Energy Act](#) has also introduced powers to regulate Carbon Capture and Storage (CCS), with the principal objective of protecting network users and the public. This is a new power but is only related to one of many long-term objectives. The legislation related to the principal CCS objectives and when IAs are required is provided in the final appendix of this document.
- 1.3 Ofgem must also comply with the following statutory duties when it exercises its regulatory functions:
 1. Biodiversity Duty – though there are nuanced differences between requirements in England, Scotland, and Wales, at a high level Ofgem must consider biodiversity when exercising any regulatory functions that may impact upon it.
 2. Growth Duty – Ofgem must have regard to the desirability of promoting economic growth (see [Growth duty legislation](#)).
 3. Net Zero Duty – in determining what is in consumers interests taken as a whole, Ofgem must include their interest in the UK government meeting its Net Zero 2050 target and carbon budgets ([Energy Act 2023](#)).

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4. The Public Sector Equality Duty – Ofgem must have due regard to the need to eliminate discrimination, harassment and victimisation, advance equality of opportunity, foster good relations between groups, and any other conduct prohibited by or under the [Equality Act 2010](#).
 5. [Strategy and Policy Statement \(SPS\) for Energy Policy in Great Britain \(PDF, 435KB\)](#)– Ofgem must have regard to the strategic priorities set out in this statement.
- 1.4 In 2023, we published a Consumer Interest Framework (CIF) within our [Forward Work Programme 2023-24 \(PDF, 525KB\)](#), which helps explain our interpretation of our principal objective. The main elements of the framework are that we act to:
- deliver fair prices for consumers
 - strengthen resilience across the energy sector
 - support a low-cost transition to net zero
 - monitor and enforce supplier quality and service standards.
- 1.5 Our decisions take a wide range of forms. For example:
- Whole sector, such as when we place obligations on all supply companies regarding how they should operate, or on the network monopolies that we regulate
 - They may apply to just one operator in a sector, such as specific obligations we place on a particular interconnector
 - They may involve prescriptive interventions, such as when we issue standards of conduct; or involve minor changes, such as when we vary the conditions in licences.
- 1.6 Given the wide variation of our decisions, understanding the possible effects we may create before we act is particularly important. This helps to ensure that our principal objective, secondary objectives, and our duties are met. We consider the potential impact of our decisions throughout development of a policy and combine our reasoning, economic and qualitative evidence to present to stakeholders in a consultation and an IA. As a holistic process an IA should identify unintended effects, and we always welcome and value stakeholders' insights in this regard.

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- 1.7 In measuring how significant an impact we are dealing with, our analysis may be quantitative (applying figures to the different costs and benefits), take a qualitative view of the different impacts, or use a mix of both.

Box 1 Related guidance

Our guidance follows closely that set out by HM Treasury in [The Green Book: Central government guidance on appraisal and evaluation \(PDF, 1,320KB\)](#) for the assessment of government policies, programmes and projects. It, and its accompanying guidance, change from time to time. The following link lands on the live site [The Green Book \(2022\)](#) and [The Green Book and accompanying guidance](#) to the collection of documents related to it. At the bottom of the latter hyperlink there is a small drop-down list in the format: 'Last updated 23 August 2024+ [show all updates](#)', if the link is selected, it can be established if there have been changes that should be applied by users. As the Green Book and related documents take precedence over our guidance it is important to keep up to date. There are also colour coded guidance documents that will be referred to in this guidance. Most important is the [Magenta Book, Central government guidance on evaluation \(PDF, 2.3MB\)](#) should be read alongside the Green Book. In addition, the [Better Regulation Framework guidance \(PDF, 798KB\)](#) describes the principles of better regulation and provides a useful toolkit for measuring and improving the quality of regulation. While this guidance is focused on regulations introduced by government departments, many of the underlying principles apply to us.

- 1.8 We regard the development of an IA, where one is undertaken, to be an important factor in our decision-making processes. However, IAs are not necessarily the determining factor in a final decision, as it is often important to consider other factors. Some of our IAs are published alongside consultations or decision documents and some are embedded within or cross-referenced to the main document in question, depending on which option would provide more accessibility and clarity. Therefore, it is important that the assessment of impacts is not read in isolation of the supporting documentation.
- 1.9 Our guidance is not legally binding. It is not a substitute for any regulation or law and should not be taken as legal advice. We consider each case on its merits and apply the guidance where it is appropriate to do so. If we decide to depart from the guidance in any material respects, we will normally set out our reasons for doing so.

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- 1.10 IAs are to support regulatory and policy decisions within our powers. Therefore, we do not expect to carry them out:
- i. Where we are responsible for the delivery of government schemes as these will have already been subject to IA by government
 - ii. Implementing government legislation (unless there is significant discretion on how we do it).
 - iii. Conducting formal enforcement action
 - iv. Using our formal powers to resolve complaints or disputes
- 1.11 A good example of (ii) is we did not carry out an impact assessment of the default tariff cap (energy price cap) as this has already been done by central government in the [tariff cap bill IA \(PDF, 614KB\)](#). Nor do we complete one each time the default tariff cap is changed. However, at its introduction we had discretion in its design and implementation so we completed the [Design and implementation of Default Tariff Price cap Appendix 11 Final Impact Assessment \(PDF, 1.97MB\)](#).
- 1.12 As a further example, under the CIF objective 'monitor and enforce supplier quality and service standards,' enforcement against a current standard would not have an IA requirement (in line with iii), but the introduction of a significant new standard might.

2. What is an IA?

Section summary

The term IA describes both a summary document to help decision-making and the process to get to it. The core quantitative monetary framework is based on welfare economics. However, the scope extends to consideration of qualitative effects, non-monetary effects and, in some contexts, the distribution of impacts may be a key consideration.

2.1 An IA is an analytical process that is consolidated in a document that reports the costs, benefits, and risks of alternative ways to meet our objectives. It helps decision-makers to understand the potential effects, trade-offs, and overall impact of options by providing an objective evidence base for decision-making.

Scope

2.2 Should only one alternative to the current situation be available, then the IA is referred to as a cost benefit analysis (CBA) but in practice the terms IA and CBA are used interchangeably. In part, this is because IAs and CBAs are based upon the ideas of welfare economics and concern the optimisation of social welfare. In other words, costs are measured in opportunity cost terms (next best use of resources) and benefits in the change in economic welfare (using consumer and producer surplus measures) in GB or the UK as appropriate. The various forms of shortfall in market welfare optimisation are known as 'market failures. Broadly, these include the presence of externalities, information asymmetry, the need to provide public goods or address competition issues.

2.3 Both IAs and CBAs depend on the concept of social benefit or value being measurable. Where this is not the case, then a Cost Effectiveness Analysis may be used. This assesses the least cost way of reaching an agreed outcome, and often is much simpler to complete. It is desirable to have a quantified monetary metric such as socio-economic welfare or costs in making decisions, as this simplifies choice between options. However, although this is often possible, we also find many decisions require consideration of other impacts and the challenge is to ensure these are given appropriate weight.

2.4 Table 1 is used to highlight the diversity of impacts by allocating some common impacts to a classification based on whether they are quantified or unquantified, monetary, or non-monetary. This is only used for illustrative purposes, and it

would be usual to examine only a subset of the factors in a particular assessment. Some of the concepts are not mutually exclusive. For example, consumer welfare is an essential element of socio-economic welfare, or the cost of carbon emissions is an important part of system costs.

- 2.5 What is quantified and unquantified is highly dependent on context and proportionality. For major decisions it may be justified to use sophisticated models of the energy system to identify impacts, as the impacts of decisions may be long-lasting and/or irreversible. While the subject of this guidance is IAs, it is essential that where they draw on modelling, that analytical standards are high. Analytical quality best practice is available in the [Aqua Book: guidance on producing quality analysis \(PDF, 1MB\)](#) and its [associated resources](#).
- 2.6 In other policies, a costing exercise identifying the implementation costs of the policy can be sufficient. Some non-monetised elements such as trust in energy suppliers may be unquantified where they are a minor aspect in the overall picture, but the tools of behavioural science may be used to develop appropriate metrics if it is essential to understand them.
- 2.7 Despite there being factors that may be non-monetisable and unquantified, these can be key elements to consider. In this case, there are several different tools that we can use to indicate qualitative importance (see Section 6.12-15).

Table 1: Impacts that may appear within our IAs

	Quantified	Unquantified
Monetary	<ul style="list-style-type: none">• Consumer welfare• Socio-economic welfare• System Costs• Emissions (CO₂e)• VOLL (Value of Lost Load) times Loss of load expectation (LOLE)• Optionality• Bill impacts• Non-carbon environmental impacts• Safety	<ul style="list-style-type: none">• Security of Supply (strategic)• Trust in energy suppliers• Financial Resilience
Non-Monetary	<ul style="list-style-type: none">• Carbon Impacts in other countries• Competition indicators (eg Herfindahl – Hirschman Index (HHI))	<ul style="list-style-type: none">• Learning by doing• Biodiversity impacts• Lock in impacts

2.8 While an IA can highlight how material benefits might be, there is a need to ask the question ‘Who gains or loses?’ Guidance on Better Regulation highlights that to do this, impacts should be set out in the most meaningful way possible given the evidence that has been identified and researched by analysts. This involves identifying the distinct groups that are most affected by the proposal and quantifying impacts. Our Consumer Archetypes and Distributional Impact Framework (CADIF) ([Assessing the Distributional Impact of Economic Regulation \(PDF,319KB\)](#)) is important in highlighting the impact of our proposals on the average bills of domestic groups (eg 75+ year old, single-adults, urban, using gas for heating on low income) or vulnerable groups (eg pensioners in the lowest income decile). We also aim to get as much information as possible about impacts on non-domestic consumers and other industry participants. Naturally, the impact on non-domestic consumers links to our growth duty.

2.9 Finally, an IA is also about the big picture. In other words, how we continue to achieve strategic goals. We are mindful of Green Book guidance that emphasises that in seeking transformational change, we should consider not just the incremental impacts of proposals but how they relate to strategic objectives. For example, the use of market wide half hour settlement is seen as an underlying

enabler of net zero objectives. If we considered a project within this programme, we would gauge its value in terms of how effective it would be in reaching net zero.

3. When will Ofgem do an IA?

Section summary

This section explains the criteria Ofgem uses to decide whether to carry out an IA. This includes IAs required under our statutory duties, non-statutory IAs such as those we undertake in line with best practice where appropriate, and IAs that are required to help the Authority examine issues relating to modification proposals for industry codes or charging methodologies.

- 3.1 When we carry out our activities, the [Gas Act 1986](#), the [Electricity Act 1989](#) and the [Energy Act 2023](#) require us to have regard to: (1) the principles under which regulatory activities should be transparent, accountable, proportionate, consistent, and targeted only at cases in which action is needed; and (2) any other principles that to us appear to represent best regulatory practice. This means that where it is not a statutory obligation to carry out an IA, we may still choose to do so.
- 3.2 Therefore, in deciding whether to carry out an IA, we will undertake a screening process.

Screening

- 3.3 The screening decision will determine whether:
- an IA is required under our statutory duties ([s.5A Utilities Act 2000](#) or [s.30 Energy Act 2023](#))
 - an IA would be beneficial to the development of the proposal or in line with good practice where appropriate (non-statutory)
 - a statutory or non-statutory IA is required to help the Authority consider the wider issues associated with an industry code (Industry codes are led by industry, see paragraph 3.9 for more details) and/or charging methodology modification proposal (Modification IAs)
 - it is necessary, proportionate, or aids transparency to produce an IA
- 3.4 Although we may choose not to carry out an IA in particular circumstances, it is likely that we will still communicate our activities and planned intentions through open letters, workshops, and more formal public consultations (see chapter 8). In

this way, anyone with an interest in our policy development will still have an opportunity to share their views on the impacts of our proposed activity.

Criteria for Determining Importance

3.5 The criteria set out in statute which indicate that a proposal is “important” are based on whether its implementation would be likely to do one or more of the following:

1. involve a major change in the activities carried on by the Authority
2. have a significant impact on persons engaged in the shipping, transportation or supply of gas conveyed through pipes or in the generation, transmission, distribution or supply of electricity or in the provision of smart meter communication services (in respect of electricity meters or gas meters)
3. have a significant impact on persons engaged in commercial activities connected with the shipping, transportation or supply of gas conveyed through pipes or with the generation, transmission, distribution or supply of electricity
4. have a significant impact on the general public in Great Britain or in a part of Great Britain
5. have significant effects on the environment.

3.6 In the case of the capture, transport and storage of carbon dioxide, item (1) refers to the economic regulator, (2) refers to persons engaged in the capture, transportation and storage of carbon dioxide, (3) refers to persons engaged in commercial activities connected with the capture, transportation or storage of carbon dioxide; and (4) is modified so that the relevant impacts both on users of carbon dioxide network systems and their impact on the public are to be assessed for the UK or for part of the UK as appropriate.

3.7 Appendix 1 gives potential examples and actual IAs under several criterion referred to in paragraph 3.5. However, no list of examples will be exhaustive, and the need for an IA of a new proposal should be considered on its own merits.

IAs produced outside the scope of statute

3.8 We may, where appropriate or in line with good practice, conduct an IA even though we are not required to do so by statute. For example, we may wish to

publish an IA if we are beginning to develop proposals in an area where, at the proper time, we may be making proposals that are “important” within relevant statute. We will consider, as appropriate, representations from interested parties on whether an IA is required or valuable. IAs outside the scope of our statutory duties will generally follow the approach in this guidance.

IAs of industry code modifications

- 3.9 We have duties relating to the governance of the gas, electricity and carbon capture and storage (CCS) industry codes. These codes are the contractual arrangements that underpin the electricity and gas wholesale and retail markets and use of networks as well as carbon dioxide transport and storage networks. Licensees must maintain, become party to, or comply with the industry codes according to the conditions of their licence. The code modification process is a mechanism available to industry to propose changes to the codes. Information about the industry codes is available on our website.
- 3.10 Where our consent to a modification proposal is required, we consider whether it better facilitates the code objectives and is consistent with our principal objective(s) and statutory duties. To make informed decisions, it is helpful to us if industry bodies conduct appropriate consultations and IAs before submitting a modification proposal to us for decision.
- 3.11 We will take note of industry consultations and IAs when the merits of modification proposals are considered. Once we receive a modification proposal for a decision, we may conduct an IA to consider the impact of accepting or rejecting it. We will consider this impact against the existing regulatory arrangements (the current code baseline) and in the context of our principal objective and statutory duties. We will tailor the level of analysis in these IAs to the circumstances of the code modification.
- 3.12 For some modification proposals, we might consider it unnecessary to publish an IA. For example, in cases where the impacts of a modification would be limited to a specific issue, it would be proportionate for us to seek views only on that issue. In addition, if we consider that the industry has conducted a suitable consultation, ie one that would consider the same factors as we would as part of an IA, then we are unlikely to repeat this exercise as this would be inefficient. It is for the code governing bodies and industry to monitor the effects of proposals that have been implemented and to conduct a post-implementation review, as they think necessary. This could be, for example, to inform further modification proposals.

3.13 There may be circumstances in which our decision to accept or reject a modification proposal could be considered “important” within the statutory meaning. We will judge whether each proposal is “important” within this meaning, in accordance with our guidance, and carry out the appropriate IA if we need to.

Multi-stage IAs

3.14 The IA process should run alongside policy development. We will normally assess proposal options from the initial stages of identifying a case for change, through the development stage and public consultation, and then to the final decision and implementation.

3.15 To inform and strengthen the proposal development process, we may produce and publish more than one IA on the same topic. Often, this will mean:

- a draft IA produced at an early stage in the proposal development, which represents initial thinking about the impact of a proposal.
- a final IA, which is the culmination of the process of consultation and proposal development.

3.16 The final IA will integrate the results of consultation with other strands of proposal development. This approach complements our established consultation process. Assessing impacts will typically evolve through the stages of a project, particularly as consultation feedback becomes available. In multi-stage IAs, we will present a summary of consultation responses and set out the resulting changes to the final IA. As we develop proposals, we will continue to consider how best to explain their impacts and capture views from stakeholders without putting unnecessary burden on stakeholders.

3.17 Where decisions are made at different stages of a complex policy, such as the Revenue Incentive Innovation and Outputs (RIIO) price controls, then a different approach may be used. For example, under RIIO decisions on the framework, the methodology and draft and final determinations occur at various stages. The IAs focus on the impact of the whole policy, while the analysis of individual decisions is reflected in several consultation documents that are published at these stages. As the consultation process moves forward the analysis is updated accordingly.

When we will not do a statutory IA

3.18 We may decide that even though a matter meets the statutory criteria, the urgency of the matter mean that it is impractical or inappropriate to do an IA.

Where this is the case, we will clearly state our reasoning within consultation or decision papers.

4. ROAMEF and Better Regulation Framework

Section summary

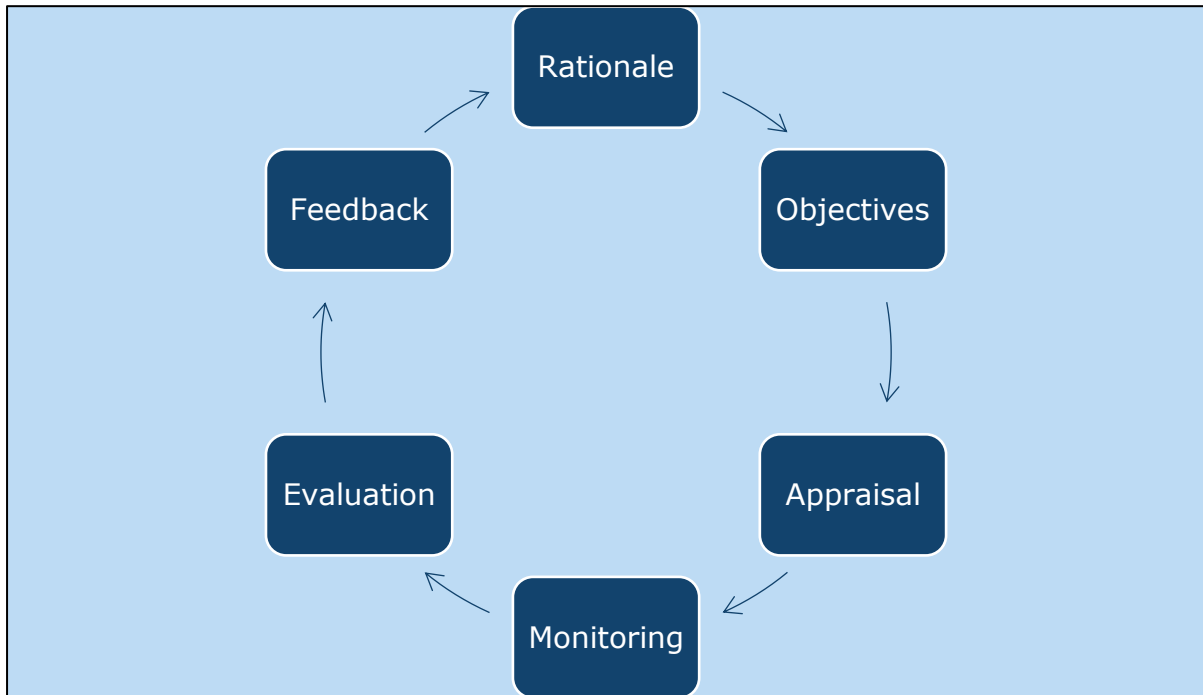
This section provides an overview of the core 'ROAMEF' policy cycle in the Green Book which forms the structure of an IA. The Better Regulation Framework builds on the Green Book principles and plays a significant role in helping to drive behaviour and approaches to policy making across government.

- 4.1 The scope of policies, strategies, initiatives, and targets may be driven by many factors, such as the need to avoid climate change or to address a consumer protection issue. In turn there may be lower-level decisions on programmes or projects that enable higher level concerns to be addressed. At each level, the thinking and development process follows the same high level policy development and review pattern known as ROAMEF.
- 4.2 The ROAMEF framework details a six-stage process for appraisal and evaluation of proposals. The acronym stands for Rationale, Objectives, Appraisal, Monitoring, Evaluation, Feedback, and it has been a core element of the Green Book for several decades. The process is as follows:
1. Establish whether there is a clearly identified rationale or need and that any proposed intervention is likely to be worth the cost.
 2. Set out clearly the desired outcomes and objectives of the intervention with the intention to identify the full range of options that may be available to deliver them.
 3. Complete an appraisal of the identified options, and the identification of the most appropriate solution.
 4. Implemented the preferred opinion and monitor performance.
 5. Evaluation of what has happened during implementation and operation. Its main purpose is that the lessons are widely learnt, communicated, and applied when assessing new proposals.
 6. Feedback involves the presentation of the conclusions and recommendations to decision-makers and key stakeholders. In turn, this may identify policy needs, and so the cycle restarts.
- 4.3 Parts of the process may be repeated as necessary before moving on. Decision-makers and analysts should note that as policy development and impact

assessment are mutually reinforcing, appraisal requirements should be thought about as early as possible in the cycle.

- 4.4 More detailed supplementary guidance supporting the processes outlined above is provided by the family of business case guidance documents available from HM Treasury.

Figure 1: The ROAMEF Cycle



Source: HM Treasury Green Book

- 4.5 The [Better Regulation Framework guidance \(PDF,798 KB\)](#) is for government departments and regulators and it is the system government uses to manage the flow of regulation and understand its impacts. It states the five regulatory principles listed in [The benefits of Brexit \(PDF,10.1MB\)](#) identified by government as follows:

- **A sovereign approach.** We will use our new freedoms to follow a distinctive approach based on UK law, protected by independent UK regulators and designed to strengthen UK markets.
- **Leading from the front.** We will focus on the future, shaping and supporting the development of new technologies and creating new markets. We will use our new freedom to act quickly and nimbly, and we will pursue high-quality regulation because it leads to better markets.

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- **Proportionality.** Where markets achieve the best outcomes, we will let them move freely and dynamically. We will pursue non-regulatory options where we can. When strong rules are required to achieve the best outcomes, we will act decisively to put them in place and enforce them vigorously.
 - **Recognising what works.** We will thoroughly analyse our interventions based on the outcomes they produce in the real world and where regulation does not achieve its objectives or does so at unacceptable cost, we will ensure it is revised or removed.
 - **Setting high standards at home and globally.** We will set high standards at home and engage in robust regulatory diplomacy across the world, leading in multilateral settings, influencing the decisions of others, and helping to solve problems that require a global approach.

4.6 The guidance states “Where an independent regulator makes its own Regulatory Provisions it is recommended that the regulator follows the Framework where possible, whilst avoiding duplication when there is a separate process in place that considers better regulation issues. Additional guidance on this will be issued at a later date.” Pending this further guidance, our interpretation is that the principles can and should be applied in our decision-making. Analysts completing IAs should consider if the proposed options that are being assessed comply with the principles or record how and why our processes better attain the same aims.

5. Application of ROAMEF and Better Regulation

Principles to our IAs

Section summary

This section provides guidance on the specific steps analysts are required to follow that will ensure our IAs meet Green Book and Better Regulation Framework standards. It makes recommendations on presentation and how to demonstrate proportionality.

Rationale

- 5.1 Our IAs must be based on our principal objective and duties (see introduction). They must also include consideration of secondary duties under the [1986 Gas Act](#) and [1989 Electricity Act](#):
- a) The need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met
 - b) The need to secure that all reasonable demands for electricity are met
 - c) The need to secure that licence holders are able to finance the activities which are the subject of obligations on them
 - d) The need to contribute to the achievement of sustainable development
 - e) The interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas
- 5.2 Where relevant, secondary duties under the [2023 Energy Act](#) should be considered.
- 5.3 Within IAs, Better Regulation Principles should be applied at this stage. Where markets achieve the best outcomes, we should let them deliver rather than intervene. It is therefore particularly important that, if we are choosing to intervene, the section on rationale should clarify the market failure that is being addressed, its importance, and why no alternatives to regulation exist.

Objectives

- 5.4 All appraisals should be clear on the objectives of the intervention. Our Multiyear Strategy lays out our longer-term objectives under our CIF. It should be made apparent in the IA which of the multiyear objectives the proposal relates to. If the

framework is updated or any new objectives emerge, then the specific objectives of the proposal should be linked to the updated objectives and any new needs that have been identified.

- 5.5 Ideally, the objectives should be SMART (Specific, Measurable, Achievable, Realistic and Time-dependent). However, there may be a need for pragmatism. For example, if our policy aims to help the uptake of domestic low-carbon technologies (LCTs), such as electric vehicles, there may be too many factors affecting the market to draw a clear link to uptake. In this case reference to secondary indicators such as charger availability, which may be linked to the proposal, may be appropriate.
- 5.6 If our regulation is based on principles, such as in standards of conduct in the domestic energy supply or cost-reflectivity in charging, then outcomes may be harder to define. Application of the 'SMART' framework may be adapted to reflect this. Take, for example an expected outcome 'Where consumers receive advice, the advice is suitable and takes account of their circumstances.' Judgement will be required as to whether sufficient baseline information exists. If it does not a separate survey may be required now with a follow-up survey after 5 years to measure if the principle that was set has had the desired consequences. The latter would mean specific measurable improvements can only be identified at evaluation.

Appraisal

- 5.7 Appraisal is the process of examining options and weighing up the relevant costs, benefits, risks, and uncertainties before a decision is made. It starts from an extensive list of options that can achieve the objectives specified, which are then narrowed down to a short-list. The short-list of options is subject to detailed appraisal using impact assessment, cost benefit or cost effectiveness analysis as appropriate.
- 5.8 As highlighted, the detailed appraisal of each short-listed option may be complex, relying on modelling, welfare analysis and tracing distributional impacts on different parties affected. At the other extreme it might rely on straightforward costing. The key tools and approaches that are tailored to an Ofgem IA are described in detail in the next two chapters.

Monitoring and evaluation

5.9 Monitoring and evaluation should be part of the development and planning of all significant interventions from the start. They are important to ensure successful implementation and the responsible, transparent management of our resources, those of consumers, and industry. Guidance on conducting evaluation is contained in the [Magenta Book, Central Government guidance on evaluation](#). Generally, evaluation activities should be proportionate to the significance of the intervention. Further guidance on the recommended approach is in Section 6 below.

Feedback

5.10 The insights provided by monitoring and evaluation should form an essential part of the background assessment for new, revised, or maintained projects, programmes, or policies.

How to present an IA

5.11 Analysts have discretion to set out the evidence base in the way that is most informative to decision-makers and stakeholders. This will vary depending on context.

5.12 The most straightforward case is one in which a new policy is to be introduced. In this case a standalone IA can be produced either as a subsidiary document published alongside the main consultation or as an appendix within it. It is recommended that the IA has separate sections for each element of the ROAMEF framework.

5.13 The IA should also have a section which addresses the proportionality of the analytical approach. The [Proportionality guidance for departments and regulators](#) has been published by the Regulatory Policy Committee (RPC). In the RPC's guidance the focus is on Equivalent Annual Net Costs to Business (EANCB) as a key measure of the Business Impact Target (BIT). Although the BIT reporting requirement has been revoked, we expect analysts to interpret the principles articulated within the proportionality guidance. In other words, to reflect on the scale of impact, stage of appraisal and detail, and to demonstrate that a proportional approach has been taken to decision-makers and stakeholders.

5.14 There should also be a separate section on wider impacts or unintended consequences. While it is hard to anticipate unintended consequences it is worth

thinking about where proposed changes may create new opportunities, obligations, or incentives, both positive and negative. Where there are none, this should be stated.

6. Guidance on appraisal elements in common to all our IAs

Section summary

This chapter describes the role of the counterfactual and alternatives in defining benefits, how transfer payments should be dealt with, when to apply the social time preference rate and how to account for private costs in appraisal. In addition, it identifies the ways risk and uncertainty can be taken into account and recommends approaches to qualitative assessment.

Define counterfactual and factuals

- 6.1 A clear quantitative understanding of 'Business as Usual' (BAU) must be developed to appraise the current situation, and to identify and plan the changes that may be required. BAU is defined as the continuation of current arrangements, as if the proposal under consideration were not to be implemented. The purpose is to provide a quantitative benchmark, as the counterfactual against which all proposals for change will be compared. In areas such as energy retail proposals, it may be easy to define what the continuation of existing arrangements means. However, it is important to provide firm evidence that shows why BAU will be insufficient to meet policy aims.
- 6.2 BAU does not always have to mean 'doing nothing,' because continuing with current arrangements will often have consequences and require action, resulting in costs. This is particularly the case in longer term systems management and development. In practical terms for our wider systems analysis there is no do-nothing option. Where relevant and proportional, the [Carbon Budget Delivery Plan \(PDF, 1.44MB\)](#) or any successor to it, should be used as the BAU counterfactual (see under Environment below). Alternatively, where applicable, National Grid's Future Energy Pathways or the counterfactual they specify should be used. Where this is the case an explanation of the merits of using the specific approach over alternatives should be provided.
- 6.3 The factual used in a CBA is the single alternative that is being considered. However, within an IA there will be several alternatives ranging from a do-minimum option to several others capable of meeting the defined objectives or strategic needs. In dealing with several options the risk of double counting costs or benefits multiply (for instance, a particular item appearing on the cost side in

one option and as an avoided cost in another), so analysts should be alert to this danger.

Transfer payments

- 6.4 Transfer payments pass purchasing power from one economic agent to another and do not affect output or consumption of resources. Where transfers are evident then these should be excluded from the net costs and benefits calculation. The objective of removing transfers is to account for the use of real resources. Resource Cost is used in the economic sense to mean the costs of goods and services excluding transfer payments such as VAT.
- 6.5 Within analysis of socio-economic welfare any important transfers should be identified. This could be between consumers and producers but also within these groups too. While transfers are not part of the standard NPV calculations (see below), there should be reflected in our distributional analysis, especially if they affect vulnerable consumers, any protected groups or affect any strategic priorities for Ofgem. Hence, if there is a scheme where one group of consumers is compensated at the expense of a similar group, then the distributional issues may be considered but, the transfer itself should not be measured as a benefit. This is evident in analysing changes in the levelisation benefits decision ([Decision on adjusting standing charges for Prepayment customers \(PDF, 1.04MB\)](#)). The decision was supported by distributional analysis and other non-transfer net benefits.
- 6.6 It is acknowledged that there will be situations where the demarcation between transfer and resource costs will be challenging. Ideally, where this arises and is important, the IA narrative should address the issue.

Price bases, discounting, and social time preference rate

- 6.7 All costs and benefits should be given in a single, common price base, ie in real terms, reflecting the purchasing power of currency in the chosen year. The base year chosen is in some sense arbitrary. However, it is best practice to aid transparency to justify the choice. Often the current year is chosen so that readers can easily think of the current costs and benefits in current currency. Though there may be a meaningful price base than the current year. For instance, if comparing generation costs, then 2012 may be a sensible base year to use, if the analyst wishes to make a comparison with the Hinkley Point C strike price. This accounts only for inflation and does not reflect the time value of money.

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- 6.8 Discounting when appraising social value is based on the concept of time preference – that generally, people prefer to receive goods and services now rather than later. The Green Book stipulates a social time preference rate which should be used for public investment. All costs and benefits not related to health should be discounted by 3.5% up until 30 years into the future, and 3% thereafter. For any assessment involving costs over several years, the base year for discounting and the time-period over which monetary values are discounted must be clear. Explanation of why the time-period of analysis is appropriate should be provided.
- 6.9 Where proposals involve private investment but public benefits, a statement was agreed by the Joint Regulator’s Group (JRG) that the Spackman approach to discounting would be used. In this, financing costs should be factored into the CBA following a 2-step process:
- first, convert capital costs into annual costs using the company’s cost of capital. This gives a stream of financing costs, which should be included as part of the cost side of the cost benefit analysis. A related question is the assessment of the appropriate time profile of annualised costs. One straightforward approach is to assume a flat annuity is applied as described in the JRG statement. There are other alternatives that could be used. There may be specific circumstances in which private financing costs are effectively funded upfront by the public sector and so may not need to be added.
 - second, use the social time preference rate (STPR) of 3.5% in discounting all costs and benefits, as recommended by the Green Book.

Box 2 Cost of consumer funds

What is the opportunity cost of consumer funds? Is it the STPR or can other time values be used? An example can be found in the Connections and Use of System Modification Proposal 361 (see [CMP343 Minded-to decision and draft IA \(PDF, 828KB\)](#) and [CMP361 - Update to our minded-to and draft impact assessment \(PDF, 262KB\)](#) and [CMP 361 decision letter \(PDF,173KB\)](#)). With Balancing Services Use of System (BSUoS) charges being transferred to final demand under CMP308, there was a proposal to fix BSUoS charges in advance and for a fund to be established using consumer money to cover any unexpected under-recovery of BSUoS payments. This fund would have, at the time, amounted to approximately £2bn.

The trade-off under consideration was whether it was more efficient for suppliers to fund deviations of outturn BSUoS from its forecast using their own funds or for customers to fund these deviations through the fund. On the face of it the STPR is lower than suppliers' cost of capital (3.5% vs c.10%) and so consumers could benefit significantly if their funds were used to manage BSUoS variability, rather than supplier capital. However, is the STPR representative of consumers' opportunity cost of money? Looking at the literature, we found that consumers can put their money to much better use and tend to value it much higher than the STPR's 3.5%: discount rates of around 7% were in the evidence we found and double digit in some instances.

Therefore, in practice using consumer money would lead to a net additional cost to consumers of ~£24 to £87m per year. We found that consumer costs of capital would have to be implausibly low for the fund to deliver benefits to consumers, ie below 2.1%. In other words, this confirmed that if we were to accept the fund, we would be treating consumer contributions as if they were cheap to consumers whereas evidence shows they are dear. Therefore, the proposal would be inconsistent with our Principal Objective to protect the interests of consumers and did not represent Value for Money.

Summarise monetised costs and benefits

6.10 Monetised benefit and cost streams should be presented in Net Present Value (NPV) terms (indicating the base year, discount rate(s) and price basis). But it

can be helpful to the reader to use Net Present Cost (NPC) if the analysis only relates to costs. If benefits are the focus, Net Present Benefit (NPB) can be used.

- 6.11 Benefit to Cost Ratios (BCRs) can supplement the NPV calculation but it is important that there is sufficient clarity about what elements are above the line in benefits, eg Net or Gross Benefits, and what are below in costs ie are all costs included or only a portion of them?

Account for non-monetary factors

- 6.12 As highlighted in Table 1 there will be impacts that cannot be measured in monetary terms. Before these are examined, it is important to think about whether it would be proportionate to try to monetise them. There are several techniques described in chapter 6 of [The Green Book: Central government guidance on appraisal and evaluation \(PDF, 1.320MB\)](#) that can be used to value natural capital, amenity values, landscape and biodiversity if it is worthwhile.
- 6.13 If an impact is important but monetisation is disproportionate or even impossible then the analyst should use an appropriate way in which to draw attention to it. A strong narrative clearly explaining the chain of causation can help. Where there are useful quantitative measures, even if not monetised, these may be used for comparison across options or give a sense of scale. Qualitative impacts should be described as precisely as possible. Graphical presentations may help the reader understand the importance of qualitative impacts. These may include the use of Red, Amber, Green (RAG) ratings or [Harvey balls](#) diagrams.
- 6.14 De minimis is a legal principle which allows for matters that are small scale, or of insufficient importance, to be exempted from a rule or a requirement. If the impacts are too minor to be considered within the IA, ie de minimis, then there is no need to include them.

Risk and Uncertainty

- 6.15 How much time and effort to apply to examine risk and uncertainty will depend on the size of the change, the time-horizon to which it relates, the complexity of the decision, and the degree to which we believe the costs and benefits of intervention are uncertain depending on future states of the world. Where these are large there may be a case for a Senior Responsible Owner (SRO) to be assigned responsibility.

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- 6.16 Analysts' approach to risk and uncertainty should be principally informed by the [Analysts' Uncertainty Toolkit](#) guidance (AUT). However, Annex 5 of [The Green Book: Central government guidance on appraisal and evaluation \(PDF, 1,320KB\)](#) and the [Orange book \(PDF, 462KB\)](#) may be useful. The AUT does not focus on IA as such but provides useful technical advice on the appropriateness of different techniques and how to perform uncertainty analysis.
- 6.17 Key steps relevant to IAs are as follows.

(i) Jointly agree with the decision-maker how uncertainty analysis should be used to inform a decision

- 6.18 If the risk and uncertainty analysis is within an IA this will frame how to approach the analysis and how it is communicated. Analysts should ensure that the decision strategy is agreed as early as possible in the process and outputs help inform it.
- 6.19 For example, to synthesise outcomes over several different scenarios, it may be possible to calculate expected NPVs for each option. That is where it is possible to place objective or even subjective probabilities on future states of the world. Where this is not possible then robust decision-making tools which do not require probabilities may be employed, such as MinMax regret (otherwise known as the Wald criterion or Least Worst Regret) or Laplace criterion. MinMax regret is a decision-making tool that makes recommendations based on which options/strategy minimises the worst 'regret' across all the alternatives analysed in various future states of the world (eg an electricity system with high, medium, or low levels of flexibility). Regret, being the difference between the best possible payoff in a particular state of the world and that actually achieved by the option in question. Regret is by definition zero for the best option(s) available under a given scenario and positive for all others.
- 6.20 An alternative tool is the Laplace criterion, which in the face of such uncertainty simply chooses to assign equal probability to each scenario or uncertainty. It is important to note however that when using robust decision-making tools, great care should be taken when deciding the scenarios or uncertainties to explore as they are often sensitive to outliers, as is particularly the case with MinMax regret.
- 6.21 The Laplace criterion is still consistent with expected payoff maximisation and so has the outward appearance of risk neutrality whereas MinMax regret is often seen as being conservative or cautious since it seeks to prevent outcomes where the intervention is particularly mismatched to the needs of the future. However,

both are highly dependent on the extremeness of the scenarios or uncertainties explored.

ii) Define and identifying uncertainty

6.22 Consider the entire system that influences the costs and benefits of the proposal to identify all possible areas where relevant uncertainty can arise. It is essential to understand what is causing the uncertainty in inputs and outputs, and whether this can be quantified. The AUT refers to classifying uncertainty as knowns, known unknowns, and unknown unknowns. An alternative systematic, visual and intuitive approach is presented by Walker, Lempert and Kwakkel in [Deep Uncertainty \(PDF, 121KB\)](#).

iii) Understand and measuring uncertainty

6.23 Before conducting uncertainty analysis, consider the range of techniques. The AUT highlights that input uncertainty should consider:

- a) Discrete and continuous distributions
- b) Confidence intervals
- c) Use of past model performance
- d) Use of expert judgement
- e) Ranges
- f) Literature reviews
- g) Red, Amber, Green (RAG) rating of parameters
- h) Break-even analysis

6.24 Break-even analysis is particularly useful in IAs as it can be used to reframe the question. For example, if a key input is particularly uncertain, the value at which the NPV turns negative can be identified. If the key inputs are not readily apparent, then individual inputs should be varied. This is known as sensitivity testing.

6.25 If sources of uncertainty can be quantified, along with an underlying probability distribution (eg a normal distribution, or skewed distribution), then it is possible to provide a statistical view on outcomes using Monte Carlo techniques.

6.26 The basic process for a Monte Carlo simulation is to:

1. Define a distribution for each input showing the uncertainty in each. These can be simple distributions based on estimation (eg uniform,

triangular) or more complex distributions based on data (eg normal, beta).

2. Define the correlations between these inputs (in the simplest case there may be no correlation between the uncertain inputs).
3. Randomly generate a value from each input distribution (accounting for correlations).
4. Calculate the outputs of the model deterministically
5. Repeat steps 3) and 4) many (ie thousands of) times
6. Analyse the distribution of the resulting outputs

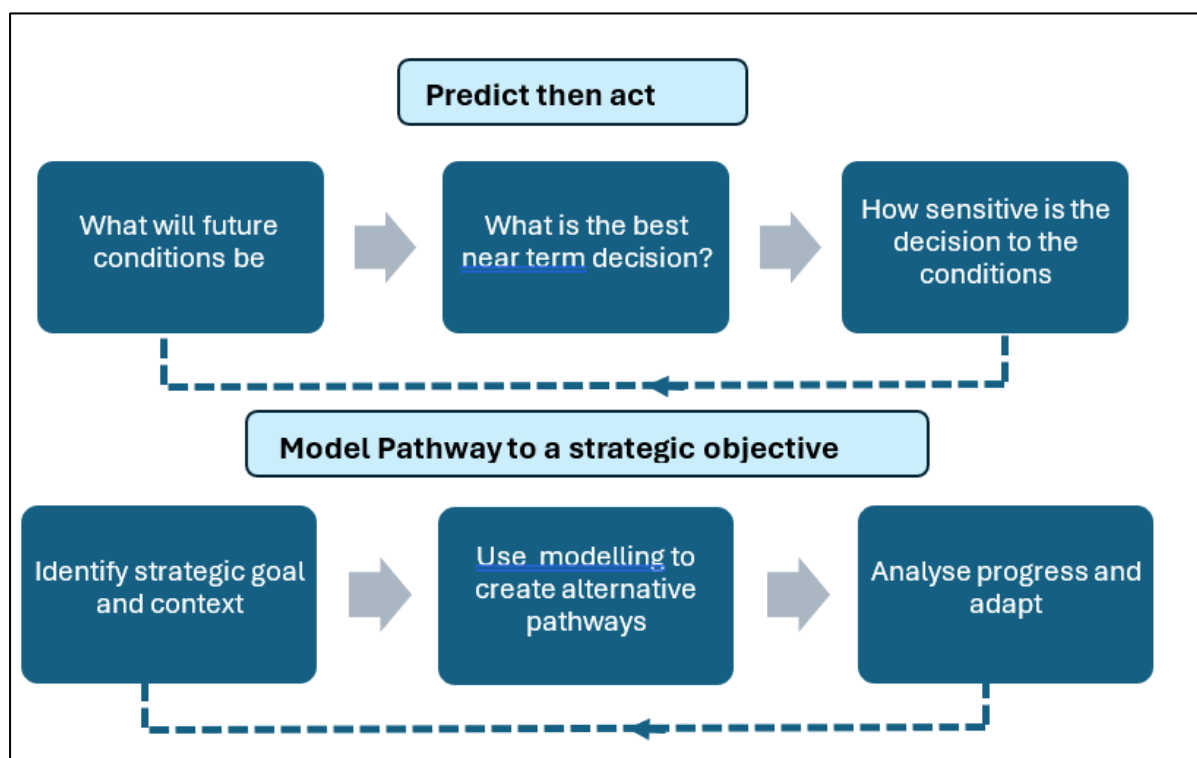
This process continues until a stable output is produced. An example of its use is in our decision on BSC P272 (See model spreadsheet in [Balancing and Settlement Code \(BSC\) P272: Mandatory half-hourly settlement for Profile Classes 5-8 – draft impact assessment](#)).

- 6.27 Other sophisticated mathematical methods are reported in the AUT. The advantages and disadvantages of the various techniques should be considered in deciding on which, if any, to apply.
- 6.28 Another helpful way of incorporating uncertainty in IAs is to bound estimates in a range (which may be driven by input ranges) to generate worst-case outcomes and best-case outcomes. An important concept is that of the 'best estimate,' if calculating Net Present Values, this is the value using the most accurate projections of inputs available.
- 6.29 When there are many sources of uncertainty and complex interactions between them then the situation is known as deep uncertainty. Deep uncertainty is also characterised by situations where parties to a decision do not know or agree on the likelihood of alternative futures or how actions are related to consequences.
- 6.30 The AUT suggests that these may be dealt with through scenario planning. An exemplar of this approach was the Electricity System Operator's Future Energy Scenarios, which were published until 2023; thereafter as "Pathways". The focus on these was as a tool of system planning. The key characteristic of these scenarios was that they considered a wide range of credible outcomes under which plans could be developed and appraised.
- 6.31 An alternative to scenarios is the identification of a pathway to achieve a particular strategic goal such as net zero by 2050. FES 2024 uses pathways (Future Energy

Pathways, FEPs) to net zero. The current specific pathways are Holistic Transition, Electric Engagement and Hydrogen Evolution. The counterfactual to these pathways is a slower decarbonisation route that does not meet net zero. Given the speed at which the energy system must reach the net zero objective, the pathways approach generates three credible but narrower range of futures than the previous approach.

- 6.32 The change from scenarios to pathways may be seen a transition from a “Predict then Act” framework to one that might be described as “Model pathways to a strategic goal” or in terms of uncertainties theory as “Monitor and Adapt.” Both approaches are shown in Figure 4. The past approach, shown at the top, developed scenarios for future conditions, worked out the best near-term decisions (usually for system reinforcements) and tested sensitivity of the decision to the conditions. The process then reiterated in the light of the results and as more information accumulates.
- 6.33 The pathways approach has been introduced as the predict and act approach may not reach net zero. In this approach, shown in the bottom of Figure 2, a strategic goal is set. Modelling is then used to create alternative more directive pathways to reach the target. Over time, progress to the strategic goal is measured and the plan adapted, the latter characterisation emphasises how critical monitoring and adaption become to reach the target. However, it might be argued that the same level of uncertainty applies whether broad scenarios or more narrow pathways are determined.

Figure 2: The Electricity System Operator’s change of Future Energy Scenarios to Future Energy Pathways (FEP)



Source: Adapted from [Agreeing on Robust Decisions: New Processes for Decision Making Under Deep Uncertainty World Bank Working Paper 6906](#)

6.34 In system planning analysis, a suitable baseline should be used, and as identified earlier this could be one or more of the FEPs at the time of analysis. However, there will still be other proposals, such as arrangements in energy retail policies, where it may still be appropriate to develop scenarios as a way of analysing uncertainty.

iv. Presenting and communicating uncertainty

6.35 It is important to engage with decision makers, so they take account of uncertainty in any decisions they make. The AUT has some useful suggestions on how best to communicate risk. For example, it is better to refer to the probabilities with the same denominator. So rather than comparing a 1 in 5 event with a 1 in 10 event, this could be communicated as a 2 in 10 event and 1 in 10 event.

6.36 Unknowns – there will always be surprises that cannot be easily predicted. So called ‘Black swan events’ such as the global covid epidemic, the illegal invasion of Ukraine by Russia, or instability in energy markets which can have far reaching

consequences. The resource on deep uncertainty referenced earlier ([Deep Uncertainty \(PDF, 121KB\)](#)) suggests:

- Resistance- planning for the worst conceivable case or future situation
- Resilience- whatever happens ensure that there is a policy that allows system recovery (eg black start arrangements for electricity)
- Static robustness- implement a static policy that will perform reasonably well in all situations
- Adaptive robustness where policy can be changed in the case that conditions change.

It is a useful challenge to consider whether the IA has examined options that can meet any of these strategies.

Wider impacts and unintended consequences

6.37 Analysts should incorporate quantitative and/or qualitative assessments of the impacts on society, business, households, the business environment (for example, competition and innovation), that may not be related to the primary strategic need. For example, a policy that was aimed at reducing price volatility may inadvertently prevent innovation that might serve to mitigate the issue. Alternatively, a partial analysis of one issue may miss the wider picture. For example, a regulation that assisted domestic electricity storage might crowd out commercial energy storage. If after examination it is concluded that these do not exist, then it is best practice to state this.

Identifying the preferred option

6.38 This requires determination of the option that provides the best balance of

- a. Costs
- b. Benefits
- c. Risks and uncertainties
- d. Non-monetisable factors
- e. Distributional impacts
- f. Minimal unintended costs/Maximum wider benefits

consistent with our strategic need. Although all shortlisted options should meet the strategic needs and objectives, there may be differences. Some options may represent more comprehensive solutions than others, so this is a key initial consideration.

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- 6.39 As evident in our Multiyear strategy our strategic objectives vary, so this will determine the weight placed on the elements above. If net benefit is the predominant factor, then the ranking of options by Net Present Value or Benefit to Cost ratios would be appropriate.
- 6.40 It is important, that risks and uncertainties are reflected in the analysis, either in terms of key assumptions that underpin the values, suitable risk treatment, or reflection on the future states of the world in which the option will pay off and those where they will not.
- 6.41 There will also be cases where there are either Net Present Costs or a Benefit to Cost ratio is below 1. In these cases, it is necessary to reflect on factors that fall within the three quadrants in Table 1 (monetary but unquantified, non-monetary but quantified, non-monetary and unquantified). These factors should be highlighted if they are decisive (in which case use the non-monetary approaches highlighted above). In other words, it is possible for a preferred option to be identified that has a negative NPV, but because it meets the strategic need, and has non-monetised benefits, it should be preferred. It is bad practice however to add trivial factors that make the narrative for action confusing.
- 6.42 If the strategic objectives have been set to achieve distributional aims, then the analytical focus should be on demonstrating the distributional consequences of the policy change. But consideration should also be given to the elements above so that decision makers can see the trade-offs that must be made.

Monitoring and Evaluation

- 6.43 As described above, monitoring and evaluation should be part of the development and planning of all significant interventions from the start. Guidance on conducting evaluation is contained in Ofgem's [The development of Economic Evaluation Strategy \(PDF, 330KB\)](#) the [Magenta Book 2020 \(PDF, 2.4MB\)](#) and [Magenta Book 2020 Supplementary Guidance: Guidance for Conducting Regulatory Post Implementation Reviews \(PDF, 650KB\)](#).
- 6.44 Analysts should ensure that IA's which are undertaken as part of our statutory duties ([s.5A Utilities Act 2000](#) or [s.30 Energy Act 2023](#)) include a Monitoring and Evaluation Section or provide justification as to why this is not included.
- 6.45 These plans should be grounded in Magenta Book principles and should:
- Set out clear objectives/success criteria for the intervention and how these will be measured

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- Identify potential negative outcomes/unintended consequences and how these will be measured
 - Include research questions that are relevant and consistent with the key objectives
 - Create a causal chain/Theory of Change if appropriate
 - Clearly outline any assumptions being made and how these inform the evaluation questions
 - Outline how key stakeholders will be engaged
 - Include realistic and suitable timeframes for evidence collection
 - Set out when the intervention will be reviewed.

6.46 For IAs which are not undertaken as part of our statutory duties, we recommend that analysts create a Monitoring and Evaluation Plan proportionate to the scale and complexity of the intervention.

7. Guidance on specific impacts

Section summary

This chapter provides guidance on the approach that must be taken on environmental issues (including net zero obligations under the [2023 Energy Act](#) and how to report distributional impacts). Other specific aspects that should be addressed, include the Public Sector Equality Duty, the Growth Duty, Security of Supply, Competition (including financial resilience), climate resilience and system transformation. External guidance is signposted and recommendations made.

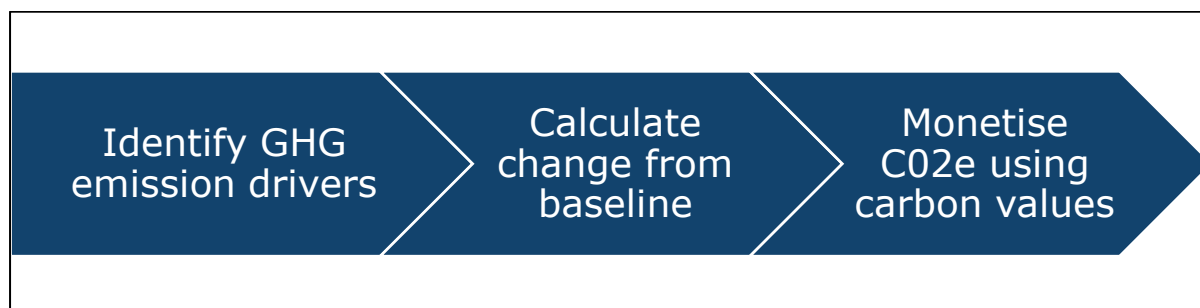
Environment

7.1 A judgement should be made on whether the proposed policy is likely to affect emissions either directly or through unintended consequences. The type of policies that are likely to have an impact are those connected with CCS or those that affect the energy system generation mix (such as network charges). Often emissions will be quantified within system models but there also will be cases in areas such as methane venting where direct measurement of impact is also possible. Where emissions can be quantified the approach to valuation below should be applied.

Emissions valuation

7.2 The diagram below summarises the typical process that should be applied to valuing changes in Greenhouse Gas (GHG) emissions:

Figure 3: Monetising emissions



7.3 As highlighted in Figure 3, there is a 3-stage process that should be applied to emissions during the period of the analysis.

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- Identify how the policy affects GHG emissions. Clarify whether it is a direct or indirect effect.
 - Measure the change in emissions relative to the baseline within the analysis (as discussed in 'Define counterfactual and factials' above). Provide detail on whether they are due to fossil fuel use. Changes should be expressed per fuel, where the policy impacts on more than one fuel, and could be distinguished by the sector in which they incur, ie residential, commercial, industry. Where emission occur due to 'other GHG', (ie Methane, Nitrous Oxide, Hydrofluorocarbons (HFC), Sulphur hexafluoride), convert GHG emissions to equivalent tonnes of carbon dioxide (tCO_{2e}) using global warming potential factors (available in Table 3.1 of [Valuation of energy use and greenhouse gas \(GHG\) emissions \(PDF, 814KB\)](#)) produced by the Department of Energy Strategy and Net Zero (DESNZ).
 - To estimate the value of GHG emissions, multiply GHG emissions (or changes in GHG emissions) obtained previously by carbon values (£/CO_{2e}) in [Valuing greenhouse gas emissions in policy appraisal](#).

Understanding carbon values

- 7.4 Since 2009, a carbon target consistent approach has been used to estimate the value of CO₂ emission reduction. These are calculated as the marginal abatement cost of carbon (MACC) of meeting targets that the UK has adopted at a UK and international level. These are based on the cost of reducing emissions (rather than the damage if those emissions continue).
- 7.5 The MACC is conceptually different from Priced Carbon. Priced carbon refers to the traded market price of carbon (TPC), which reflects the value of traded carbon emissions (for example, through the UK Emissions Trading System, UK ETS) in different industries. This depends on the number of allowances set by Government, and changes in supply and demand for these allowances.
- 7.6 The significance of the abatement cost approach is that it identifies the cost elsewhere in the economy of abating carbon. For example, if our regulatory decision had a cost per tonne of carbon saved that was higher than the carbon cost, then there are other, less expensive carbon abatement possibilities elsewhere in the economy. We would only accept it if there were other factors that came into account. Otherwise, it would be better to make progress in other sectors.

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- 7.7 Analysis using the central MACC values may show that the emission values are significant in the assessment. Where this is the case apply sensitivity analysis using both the high and low MACC prices series to ensure the proposal is robust to alternative abatement costs. If, for example, the net zero strategy requires the closure of the gas network, it might be appropriate to check that a project relating to biomethane, could still be justified with the low-price series.

Box 3 How to avoid double counting of carbon impacts

There will be a need to avoid double counting the carbon cost of generation when costs already include the UK-ETS price. This is a common issue when systems modelling is used to analyse the despatch of electricity from power plants where carbon costs are already incorporated as part of a generator's cost stack, or as part of a plant's bid of offer into the market. Suppose in system modelling, we use an UK-ETS price of £50/tonne as an input and consequently modelling shows that a fossil fuel plant runs producing 100t of CO₂. The system cost of the carbon initially appears as £5,000 (100t times £50/tonne). We will then factor in abatement cost at £350/tonne. As the difference between £350 and £50 is £300/tonne, an additional £30,000 (100t times £300/tonne) should be added to the system cost for that option.

Implications of the Energy Act 2023 for appraisal

- 7.8 Following the passage of the [Energy Act 2023](#), consumer interests now include the UK government meeting its net zero 2050 target and keeping within associated carbon budgets. This is now a geographically specific duty, ie UK only. Accordingly, if a policy that affect emissions in the UK and abroad, the UK emissions and their value should be clearly identified. However, as there is also consumer interest in tackling climate change at a global level, quantified information on impacts elsewhere should also be provided to decision-makers.
- 7.9 For valuation of UK emissions, the use of target-consistent values should be used to ensure that decisions remain compliant with the carbon budgets. [Valuation of greenhouse gas emissions: for policy appraisal and evaluation](#) provides these values (or appraisal prices) which are based on international commitments. When used in assessment, they are more ambitious in the fifth carbon budget and consistent with the sixth carbon budget. Where these values are used in assessment the net zero duty is automatically taken into account.

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- 7.10 We monitor progress in our contribution to the [Carbon Budget Delivery Plan \(PDF, 1.44MB\)](#). The specific policies that are related to Ofgem and have quantified targets are: Reducing Methane, Heat Network Market Framework, Offshore Wind Acceleration Taskforce (OWAT), Interconnectors, Electricity Networks Strategic Framework, Electricity Networks Commissioner's Recommendations, Ofgem Decision on Accelerated Strategic Investment, RIIO-ED2 Final Determinations, SPS, Energy Code Governance Reform and Energy Digitalisation Strategy.
- 7.11 As indicated in the factual/counterfactual section, as part of our compliance with assisting the Secretary of State, proportionate consideration should be given to whether any policies that are being appraised are consistent with the quantified elements of the Carbon Budget Delivery Plan or any subsequent plans.
- 7.12 It may be found, having used DESNZ carbon costs, a preferred option has lower costs than the government carbon plans. In this case, make clear the extent of deviation from the relevant line-item of the carbon plans, caused by the change being assessed and justification for the preference should be provided. There are unquantified targets, within the delivery plan but it is not anticipated that progress in the directions specified will conflict with IA requirements.

Qualitative approaches

- 7.13 Even if it is impossible to quantify carbon emissions, it may be possible to use logical pathways or causal chains (as described in the Magenta Book) to assess whether emissions are likely to increase or decrease with a policy. However, in keeping with the monetisation approach, there should be an assessment of whether any reduction in emissions is cost effective.

Other environmental impacts

- 7.14 Where policies have a material effect on the landscape, biodiversity, or amenity this should be included within the appraisal. Burning of fuels can have significant negative impacts on human and environmental health through Nitrous Oxide (NO_x), Sulphur Oxide (SO_x) and other emissions.
- 7.15 Given our principal objective and general duties, analysts should have regard to indirect policy and environmental effects such as the effects of air quality on consumer health where it does not duplicate other government action, and the effects are above de minimis levels. Where the policy would have material impacts on air quality, and the impact monetised, it should be included in the IA.

Distributional Analysis

- 7.16 As our primary duty is to consumer interests and we have secondary duties to distinct groups of consumers, particularly those in vulnerable circumstances. The analysis of distributional impacts is especially important.
- 7.17 The approach should be determined by the nature of the policy change. As noted above some of our policies create system level changes, that are analysed using models. These generate data on the distribution of economic surpluses between producers (eg generators) and consumers. For such analyses, the primary focus is on the generality of consumers of electricity or gas. For example, a major reform in the gas sector could have implications for domestic gas consumers, industry consumers and power stations. Following the high-level modelling, analysts should endeavour to provide further insight by examining more granular impacts on consumer groups.
- 7.18 Where the impact is solely related to total domestic consumption over an annual period, then the Consumer Archetypes and Distributional Impacts Framework (CADIF) should be used (see [Assessing the Distributional Impact of Economic Regulation \(PDF,319KB\)](#)). Underpinning this is an Excel workbook that can help:
- estimate impact based on consumer archetypes
 - estimate impact on households with vulnerability present
- 7.19 The workbook and a Standard Procedure (SOP) are available for analysts by contacting the Office of the Chief Economist. The SOP serves as a comprehensive guide for conducting domestic distributional analysis using the CADIF. The overarching objective is to enhance and facilitate an understanding of the distributional impact of energy policies on domestic consumers, providing valuable insights for policymakers, analysts, and stakeholders.

Domestic consumer archetypes

- 7.20 The CADIF has a set of energy consumer archetypes, each representing a typical GB household. These were developed by the Centre for Sustainable Energy in 2020 and have been updated in 2024. They group households together based on common characteristics and socio-economic data. The characteristics include age, disability status, employment status, number of dependents, income, type of heating and energy consumption by fuel. The data comes from several sources including the ONS Living Costs and Food Survey (LCFS).

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- 7.21 Domestic consumer energy bills are largely levied via a two-part tariff: a fixed, daily charge known as the standing charge and a unit rate (UR) paid for each unit of energy the household uses. Standing charges and unit rates are fuel specific and tend to be different by payment method. A particular bill can be estimated by multiplying the standing charge by 365 and the volume of consumption in a year by the unit rate applicable.
- 7.22 Ofgem policies or cost of energy changes will impact either the standing charge or the unit rate, either uniformly across payment type and geography or differentially. It is therefore straightforward to calculate bill impacts once we know the change in either the standing charge or the unit rate of a policy, for a particular consumption level.
- 7.23 In addition, if we have calculated bill impacts by archetype income decile, we can use HM Treasury distributional weights to account for the varying marginal utility of income across the income distribution. Low-income households will place greater value on a given decrease in their energy bill than a high-income household, with a large disposable income and lower marginal utility of income. These weights can be found in the CADIF workbook.
- 7.24 There may be salient information, such as the proportion of consumers paying by each payment type which is not consistent between the archetypes and retail data held within Ofgem. Where this occurs, reweighting of the archetype data may be required.
- 7.25 Application of the framework will identify the impact of a policy using the energy spend and income data in each archetype (income is important when equivalising or income-weighting impacts). However, it may be necessary to supplement it with a more qualitative assessment using the information on vulnerability in each of the archetypes. The framework analysis should identify the number of households in each archetype to show how big the impact would be in absolute terms and determine the degree to which a policy option would have a positive or negative impact on that archetype.
- 7.26 The analyst should examine other policy effects that may impact distributional issues. For example, price or income elasticities.
- 7.27 An example of the application of the Consumer Archetypes is provided in our assessment of [Changing standing charges for prepayment meters and debt-related costs across payment methods \(PDF, 804KB\)](#) (see Appendix 3 of the document).
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- 7.28 As there is information on the archetypes by government office region, geographical impacts by archetypes can be assessed. Sub-national gas and electricity consumption information may provide greater consumption granularity at the expense of archetype distinctions.
- 7.29 It is also possible to use the underlying LCFS data to estimate more detailed impacts. For example, as the imputed electricity consumption is available for each household in the survey, it would be possible to consider a policy change which had different effects according to consumption levels and state the number of households gaining or losing. Whereas, the archetype information only relates to the average household of a specific archetype, not all.

Alternative archetypes

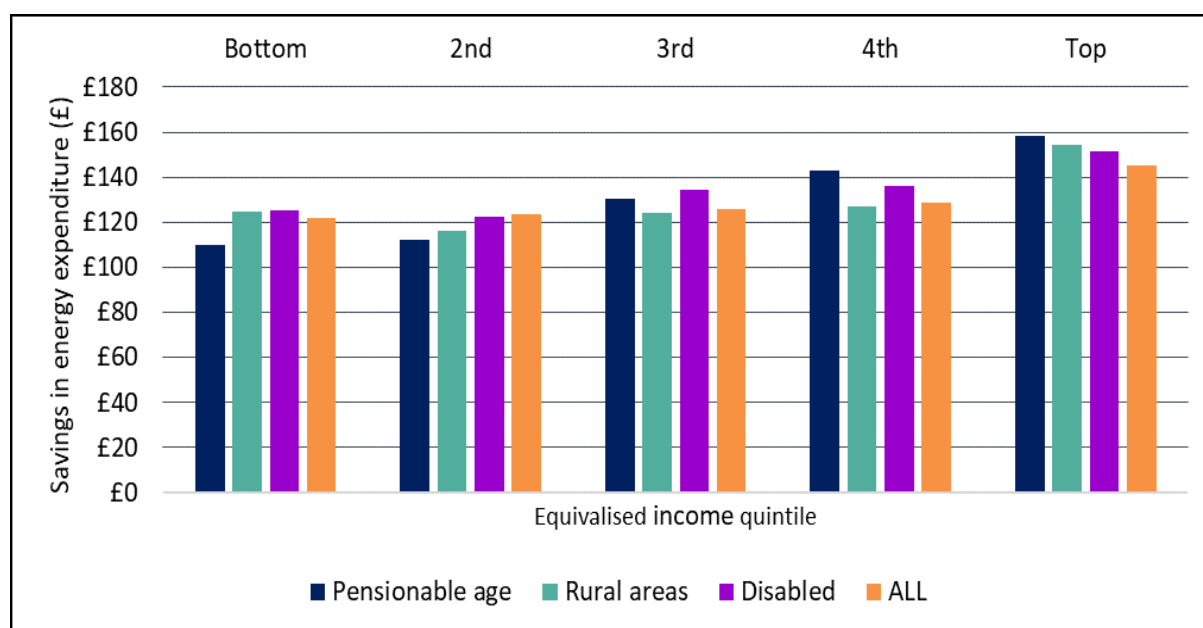
- 7.30 Any groups that are not adequately captured by the existing framework should be given due attention. For a policy affecting prices on a half-hourly basis, it may be appropriate to divide households into those with Economy 7 heating and those that have an alternative. Or if the proposal was related to access to services there may be a need for a distinction between those consumers that are digitally excluded and those that are not.
- 7.31 Several of our proposals are likely to have differing effects according to the consumption profile of the domestic user. For example, the consumption pattern over the day will vary depending on whether the user has an EV and home charger, a heat-pump, or roof-top solar or a combination of these or, as is usual now, none. Where there are differential impacts between consumers because of their different profiles bespoke analysis should be used.
- 7.32 As smart meters and LCT technology are adopted more widely, more data will become available on the number and characteristics of LCT users, and this will provide a better understanding of distributional impacts. For example, the [Smart Energy Research Lab](#) has over 13,000 GB households within its Observatory and it already provides excellent insights into, amongst other things, the energy consumption characteristics of those with smart meters and LCTs.

Households with vulnerability present

- 7.33 The CADIF also includes information on household energy expenditure and income by disposable income decile or quintile, for Pensionable age, Disabled and households in Rural areas. Additional information on households with no internet access, unemployed and lone parents is provided. The framework should be

applied flexibly as our view of vulnerability is wider than the four groups identified in our secondary objectives. Figure 4 illustrates how a distributional analysis might be presented.

Figure 4: Impact of the fixed reform on Electricity and Gas bills, by categorical group and equivalised income quintile



Source: Ofgem analysis of data from the Living Cost and Food Survey

Table 2: Policy savings per categorical group and income quintile on Electricity and Gas bills

Consumer Type	Bottom	2nd	3rd	4th	Top
Pensionable Age	£110	£112	£130	£143	£158
Rural Areas	£125	£116	£124	£127	£154
Disabled	£125	£123	£134	£136	£151
All	£122	£124	£126	£129	£145

Source: Ofgem analysis of data from the Living Cost and Food Survey

7.34 Table 2 shows similar savings per household. However, as highlighted above our CADIF includes equity-weighted savings which increases the value of each £1 of savings to those of lower income. Figure 2 in [Assessing the Distributional Impact of Economic Regulation \(PDF,319KB\)](#), shows how this approach changes the view of the distributional of benefits of the illustrative policy and the document highlights other forms of presentation that give further insights.

Non-domestics

7.35 We are currently developing tools to give greater detail on the impact of our policies on microbusinesses, Small and Medium sized Enterprises, and Industry. When available, this should be applied in conjunction with this guidance.

Security of supply

7.36 Energy security or security of supply can be defined as the availability of energy at all times in various forms, in sufficient quantities, and at reasonable and/or affordable prices ([security of supply - European Environment Agency \(europa.eu\)](https://ec.europa.eu/europa.eu)). Its national importance has led to a statutory duty for DESNZ and Ofgem to produce an annual report on the security of supplies (Section 172 of the [Energy Act 2004](#) (as amended by Section 80 of the [Energy Act 2011](#))).

7.37 When assessing the impact of energy security, consider if the policy may have significant effects on UK energy demand or supply. These effects may impact:

- Capacity margins either in the short-term or over the longer term
- Firm power such as gas with CCS
- Storage
- Interconnection
- Demand-side response, among others.

7.38 Analysts should address the following questions when assessing the impact of a policy on energy security:

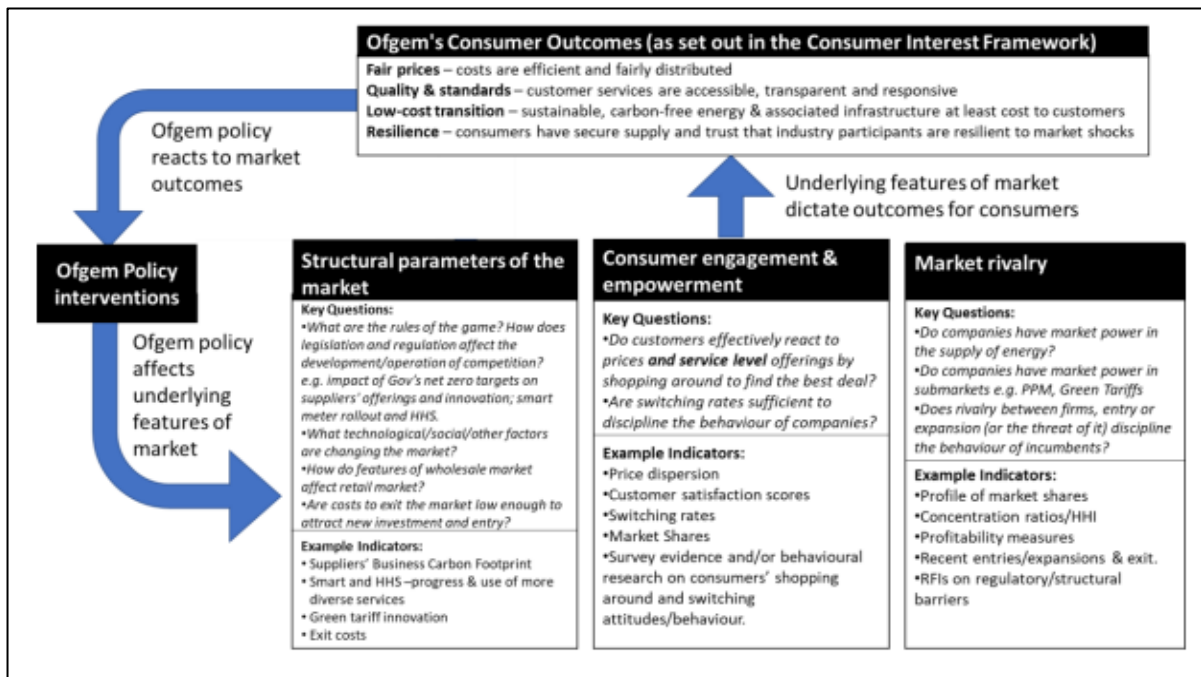
- a) Will the policy option have significant effects on UK energy demand or supply? For electricity, is there evidence that the policy will affect derated capacity margins either in the short-term or over the longer term by changing incentives to invest in UK energy. What is the precise mechanism at work? Are there interactions or interdependencies between different fuel types (natural gas/electricity and if relevant hydrogen) and uses (eg heating or power). Does the policy have any impact on peak gas demand which is expected to remain high in the short term?
- b) Does the policy create greater exposure to weather events? For example, in a 'Dunkelflaute' period of multiple consecutive days in which low or minimal energy can be generated by renewable energy sources. A key metric is Loss of Load Expectation. This is the number of hours in which supply is lower than demand and can be determined through systems modelling. Other useful metrics can be the capacity margin or capacity margin duration curve.
- c) Does the policy affect the scope for short and long-term storage either of gas or electricity? Can the mechanism be described?
- d) Would changes to the interconnector regime impact their operation?

- e) Consideration should be given to quantify the benefits of Demand Side Response. This may, for example, relate to the avoided costs of network reinforcement but other measures may be appropriate.
- f) Are there ways of mitigating adverse effects? Can existing policies such as the capacity market be shown to provide protection? If so, at what additional cost?

Competition and financial resilience

7.39 Encouraging competition is one of our core purposes and we have developed a new framework for the household retail market which was published in 2023 ([A competition framework for the household retail market \(PDF, 315KB\)](#)). This is summarised in Figure 5.

Figure 5: Competition Framework



Source: [A competition framework for the household retail market \(PDF, 315KB\)](#)

7.40 As indicated in Figure 5, the framework includes a list of potential indicators that should be used when applying it to relevant policies. Analysts should consider the most relevant themes and indicators/evidence which can inform the assessment of competition. However, it is a non-exhaustive list and may change over time, therefore the latest version of the framework should be consulted before starting analysis.

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- 7.41 In addition, analysts should also assess competition issues relating to the non-domestic market such as, ensuring the conditions are right for the networks to operate effectively and reliably; facilitating access to the network for new generation capacity; and ensuring that system operators and users are granted the right incentives to make system performance more efficient. Several of the indicators in the domestic retail market may also be applied to the non-domestic sphere. General guidance on competition issues, which will be relevant to non-domestic competition has been published by the CMA in [Competition assessment: guidelines for policymakers - Part 1 \(PDF, 1.27MB\)](#) and [Competition impact assessment Part 2: guidelines \(PDF, 978KB\)](#). These should be used as appropriate.
- 7.42 If there are indirect or long-term consequences of an option on competition, these impacts should be described. In some areas, our decisions may exert very long-term influences on the evolution of the UK energy system, and on its competitiveness. In this instance, the non-monetary assessment should refer to assessments of competition and resilience impacts and their implications for the long-run trajectory of the UK system (if that can be determined).

Financial Resilience

- 7.43 Where relevant, analysts should examine financial resilience and the ability for a licensee to finance the obligation (licensee financeability), including (but not limited to) by considering:
- the impact of a policy on the finances of a notional efficient licensee and how that fits within the context of Ofgem's other regulatory interventions. For example, having regard to factors which might have a greater or smaller impact on the financeability of a licensee, such as the size and operating model of different licensees and whether the policy ensures an appropriate return on capital.
 - how a policy may promote effective competition, avoiding unnecessary cost to consumers. For example, where a policy risks triggering a higher level of market exit, factors which could be relevant to our IA include the impact market choice, competition, and continuity of supply.
- 7.44 Consideration of the Financeability Duty should be on a case-by-case basis. The examples discussed above are non-exhaustive.

Climate Resilience

- 7.45 Energy networks need to operate in a changing climate. Analysts should, where appropriate and proportionate, address climate resilience in accordance with

official guidance [Accounting for the effects of climate change: Supplementary Green Book Guidance \(PDF, 1.71MB\)](#).

- 7.46 We aim to supplement this with bespoke guidance specific to the energy sector. When available, this should be applied in conjunction with official guidance.

Public Sector Equality Duty

- 7.47 Although it is not an economic concept, IAs for public sector bodies, must have due regard to the need to:

“(a) eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under this Act;

(b) advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it;

(c) foster good relations between persons who share a relevant protected characteristic and persons who do not share it.

Having due regard to the need to advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it involves having due regard to the need to:

(a) remove or minimise disadvantages suffered by persons who share a relevant protected characteristic that are connected to that characteristic;

(b) take steps to meet the needs of persons who share a relevant protected characteristic that are different from the needs of persons who do not share it;

(c) encourage persons who share a relevant protected characteristic to participate in public life or in any other activity in which participation by such persons is disproportionately low.”

Attention to this duty should be given early in the policy cycle and it requires careful analysis and thought as there may be subtle unintentional effects that can be easily addressed in policy design.

Economic Growth

- 7.48 The purpose of the Growth Duty is to ensure that we take into account the potential impact of our activities and our decisions on economic growth, for the wider UK economy, alongside or as part of our consideration of our other statutory duties.

7.49 Key drivers of medium- and long-term growth are:

- Innovation
- Infrastructure and investment
- Competition
- Skills
- Efficiency and Productivity
- Trade Environmental Sustainability

7.50 In assessing the contribution to growth, guidance [Growth Duty: Statutory Guidance \(PDF, 324KB\)](#) from the Department of Business and Trade should be applied. Examples of desired behaviours are given, and our Regulatory Sandbox referenced as an example of 'Pro-Innovation' behaviour.

Transformational change

7.51 [The Green Book \(PDF, 1,320KB\)](#) includes an annex on Transformation, Systems and Dynamic change (Annex A7). It describes transformational change as a radical permanent qualitative change in the subject being transformed, so that the subject when transformed has very different properties and behaves or operates in a different way. The key element, in relation to us, is the permanent change of the energy system by way of decarbonisation. The future energy system and its 'ecosystem' may operate in a much different way to the current one. When appraising policies, analysts should seek to ensure that the policy plays a part in delivering relevant strategic change, in our case net zero.

7.52 This is not a new development as far as our thinking goes, in the past we have measured wider system effects and did so with an awareness of dynamic changes in the ways that parts of the system behave in relation to each other. This has been inherent in decisions in areas such as our [Decision on industry proposals to change electricity transmission charging arrangements for Embedded Generators \(PDF, 136KB\)](#) where sophisticated models of the electricity sector were used or more recently in our [Assessment of locational wholesale pricing \(PDF, 2.54MB\)](#).

7.53 With the [Energy Act 2023](#), we have a closer focus on how we assist the Secretary of State in meeting net zero, and implications for carbon budgets of proposals. As highlighted in the section on counterfactuals, where relevant our starting point should either be the DESNZ delivery plan for the carbon budget, or if we are to consider an alternative to that plan, the onus is on the analyst to present the case within the IA that there are potentially substantial benefits from deviating from the plan. Where this deviation involves higher emissions, the analyst should,

based upon DESNZ appraisal carbon values (include high, low, and central values), determine whether these emissions could be mitigated more cost effectively elsewhere.

Box 4 Quality Assurance of IAs

The best form of quality assurance is to go through a checklist to ensure that nothing has been inadvertently overlooked. Appendix 3 provides a checklist that covers all the content of this document. While not all questions will be relevant to a specific IA it will help identify any gaps that need to be covered in advance of QA by internal experts and publication. Although there are many questions, for a good IA this process ought to be quick and easy to complete.

8. Consultation

Section summary

There is a need to ensure that IAs are consulted on in line with our broader consultation policy. Consultation periods will last for a proportionate amount of time depending on the degree of urgency, complexity, impact and interest in the proposal, and the approach will vary depending on the type of IA in question.

- 8.1 Our approach to consulting on IAs should be in line with our broader consultation policy. However, our guidance on consultation timescales is not intended to displace any statutory, regulatory, or licence-based consultation period. Consultation periods will last for a proportionate amount of time depending on the degree of urgency, complexity, impact and likely interest in the proposal, and the approach will vary depending on the type of IA in question.
- 8.2 It is important to consult on our proposals in a way that is easily accessible to those with an interest, be they large or small companies, consumer groups or individuals. An analyst who is to assess the impacts associated with a proposal, should strive to provide an appropriate level of detail for the stage of development. For example, at an early stage (eg initial proposals, open letters, discussion documents, consultations) analysis may be included within a specific document if this context helps understanding. It is also important to engage with stakeholders to identify whether an IA is expected to be required to meet statutory duties or whether one will add value to the decision-making process.
- 8.3 An initial IA should ordinarily accompany a main consultation document setting out a policy proposal. Ideally, all analysis should be covered within the IA document, and analytical sections in the main consultation document should cross-refer to relevant parts of the IA. When a different approach may be required it is necessary to take into account the audience as well as the objectives of different documents to maximise readability and transparency.
- 8.4 Following consultation there may be additional information provided by consultees. There are three potential outcomes:
- the draft IA is accepted, and it should either be republished with the final decision, with draft changed to final. Otherwise, a highlighted statement should be made in the final decision to indicate that the draft IA can be considered final
 - Amendments are identified which mean that the wording or analysis of some sections are changed, but even so the identified preferred option

remains the same. A final IA incorporating the updates should then be published with the decision. The use of change marking or another method should highlight changes

- The changes that are required after consultation are of such materiality that the preferred option at the draft stage no longer applies. In this case, both the policy decision and Impact Assessment should be revised.

8.5 In statutory IAs, where it is evident that an evaluation is appropriate and feasible, it is necessary to include a good summary of the monitoring and evaluation approach that should be taken between the final decision on the proposal, its implementation, and the delivery of anticipated benefits. In other IAs monitoring and evaluation should be proportional to the decision. This will give stakeholders a chance to comment on the arrangements.

8.6 Where possible, documents should be provided in alternative formats, so they are accessible.

Appendices

Appendix	Name of Appendix	Page No.
1	Glossary	57
2	Changes that may require a statutory IA	60
3	IA Checklist	62
4	Licensing of Carbon Dioxide Transport and Storage (Part 1 of Energy Act 2023) and our duty to carry out IAs under section 30.	66

Appendix 1 Glossary

Annuitisation - the process of converting an investment into a regular series of payments.

Appraisal - the process of defining objectives, examining options, and weighing up the relevant costs, benefits, risks, and uncertainties before a decision is made.

Appraisal Price (also referred to as shadow or accounting price) refers to an estimated value of a good where market prices are not available, or do not reflect total costs and benefits.

Assessment - may refer to either an appraisal or an evaluation.

Benchmarking – a method of identifying best standards of practice in a field and encourages others to compare themselves against that standard.

Best Practice – a set of guidelines drawn from examples in a field that are modified for a particular organisation.

Break Even analysis – an analysis that identifies the input values under which the benefits of the proposal are equal to the costs.

Business As Usual - the continuation of current arrangements as if the intervention under consideration were not to happen. This serves as a benchmark to compare alternative interventions.

Cost Benefit Analysis (CBA) - a process, drawing on concepts of economic welfare, used to measure the benefits of a single decision or action minus its associated costs to determine whether it is worthwhile.

Cost Effectiveness Analysis (CEA) - a process, drawing on concepts of economic costs, to determine the most effective way out of several options to achieve a specified objective.

Do-minimum option – the Green Book refers to this as the minimum intervention required to deliver the core business needs required to deliver the SMART objectives identified in the strategic appraisal. This excludes additional features that take advantage of opportunities present during implementation of change.

Effectiveness is a measure of the extent to which a proposed intervention achieves its objectives

Externalities occur when consuming or producing a good or service produces benefits or costs for others that are not directly involved in the consumption or production.

Evaluation - the systematic assessment of an intervention's design, implementation, and outcomes.

Impact Assessment - a document to aid decision-making. It establishes the need for an intervention and the main options. The quantitative monetary framework is based on welfare economics. However, the scope extends to consideration of qualitative effects, non-monetary effects, and the distribution of impacts as appropriate. Its output is a recommendation of the preferred way forward.

Information asymmetry - a difference in the information available to the parties involved in a transaction giving an advantage to one side over the other.

Lock in analysis - a consideration of whether a decision commits to a particular development path which it can be difficult to move from. Consideration of this issue helps to identify these situations and avoid them if appropriate (there are circumstances where it is a desirable strategy).

Net Present Value (NPV) - a generic term for the sum of a stream of any future values that have been discounted to bring them to a present value. If the stream includes cost only, NPC can be used. If the stream relates to benefits only NPB can be used.

Net Zero - the 'net zero target' refers to a government commitment to ensure the UK reduces its greenhouse gas emissions by 100% from 1990 levels by 2050. If met, this would mean the amount of greenhouse gas emissions produced by the UK would be equal to or less than the emissions removed by the UK from the environment.

Outcome - a desired change, helping the achievement of a policy goal.

A Policy is a statement of intent that is implemented through a procedure or a protocol and a deliberate system of principles to guide decisions and achieve rational outcomes.

A Programme is an interrelated series of Sub-Programmes, Projects, and related activities in pursuit of an organisation's longer-term objectives. Programmes deliver outcomes through changes in services.

A Project is a temporary organisation designed to produce a specific predefined output at a specified time using predetermined resources.

Preferred Option - the option preferred after a detailed analysis of the shortlist. Comparison of each shortlist option, and their advantages over Business as Usual allows identification of the best option for the delivery of public value.

Real price - the nominal price (ie current cash price at the time) deflated by a measure of general inflation.

Resource Cost is used in to mean the costs of goods and services excluding transfer payments such as for example VAT. In resource accounting, 'resource costs' are accruals expressed in real terms.

Strategy is a plan of action designed to achieve an overall aim or objective.

Strategic Portfolio consists of the programmes and projects necessary to make the changes required to deliver a strategic objective or objectives that contribute to delivery of policy.

Value for Money (based on the Green Book definition) is a balanced judgment based on the Benefit Cost Ratio or Net Present Value which brings together social costs and benefits including public sector costs over the entire life of a policy, together with decisively significant unquantified deliverables, and unmonetised risks and uncertainties, to deliver a proposals SMART objectives. The judgement is made in the context of the policy's role, in supporting government policies and strategies of which it is a part, and its fit with wider public policies.

Value for money (National Audit Office (NAO) definition). The NAO uses three criteria to assess the value for money of spending ie the optimal use of resources to achieve the intended outcomes: Economy is minimising the use of resources required (spending less), Efficiency is the relationship between the output of goods and services and resources to produce them (spending well) and Effectiveness is the relationship between the intended and actual results of spending (spending wisely). This VFM concept may apply when consumers funds are used for specific programmes, for example, the Strategic Innovation Fund.

Note: the definitions above have largely been drawn from the Green Book.

Appendix 2 Changes that may require a statutory IA

Major change in the activities carried out by the Authority

Proposals which may involve a major change in the activities carried out by the Authority may include, for example, those where Ofgem exercises a significant new power or function for the first time or where Ofgem proposes important changes to the way in which it discharges a duty.

Significant impact on persons engaged in the shipping, transportation or supply of gas, the generation, transmission, distribution or supply of electricity, the provision of smart meter communication services or in connected commercial activities

Proposals, which are likely to result in significant impacts may include, for example, those where the implementation of the proposal would have significant costs for industry participants and/or persons engaged in connected commercial activities or those where the implementation of the proposal would affect the ability of industry participants to choose the price, quality, range or location of their gas and/or electricity or associated services.

[[Targeted Charging Review: Decision and Impact Assessment | Ofgem](#) is an example]

Significant impact on persons engaged in commercial activities connected with the shipping, transportation or supply of gas conveyed through pipes or with the generation, transmission, distribution, or supply of electricity

This is associated with the previous criterion.

Significant impact on consumers and / or the general public in Great Britain or part of Great Britain

This may be likely, for example, where the implementation of a proposal significantly affects:

- security and/or diversity of energy supplies.
- health and safety.
- gas or electricity prices.
- competition in British markets.
- sustainable economic growth and productivity.
- a sustainable energy system.
- energy efficiency.
- quality of service; or
- social impacts including effects on fuel poverty, people with disabilities and/or with protected characteristics. Energy efficiency, quality of service, social impacts including effects on fuel poverty, people with disabilities¹¹ and/or with protected characteristics.¹²

[Appendix 2 of [Decision on adjusting standing charges for Prepayment customers \(PDF, 1.04MB\)](#) provides an example of an IA with these characteristics]

Significant effects on the environment

Significant effects may be where, for example, a proposal is likely to:

- result in an appreciable increase or decrease in emissions of carbon dioxide or other greenhouse gases
- materially affect government targets and objectives described in the Social and Environmental Guidance to Ofgem and any successor to it (eg relating to emission reductions, energy efficiency, distributed energy, and innovation), and / or
- have a significant impact on visual or other amenity issues, especially in environmentally sensitive areas such as National Parks, Areas of Outstanding Natural Beauty or Sites of Special Scientific Interest, and/or have a significant effect on biodiversity.

[[Final Impact Assessment on Pathways to 2030 workstream's decision \(PDF, 529KB\)](#) is an example of an IA where emissions impacts were particularly significant]

Appendix 3 IA Checklist

This is a list that can be used by an analyst to check that the fundamental areas required in an IA have been covered. As each IA is different there will be some questions that will not be relevant. Similarly, analysts should be alert to aspect of their IA that should be included in this list. Feedback is welcome.

Overall

Is the assessment proportionate to the decision?

Is the overall narrative clear and compelling?

Is it consistent with Green Book guidance?

Is it consistent with Better Regulation Framework guidance?

Rationale

Has a clear problem been identified?

How strong is the background research/evidence to identify that there is an issue?

Has a market failure or regulatory failure been clearly identified that necessitates the need for regulatory change by us?

Have non-regulatory alternatives been considered to correct the cause of the market failure and, if not, has sufficient justification been provided to explain why this would not be a viable option?

Has the ability of the regulatory intervention to correct the causes of market failure been clearly demonstrated and any potential unintended consequences and/or behavioural impacts considered?

Is there evidence explaining how the market(s) currently work and how any market failure identified is causing the observed behaviour in the market(s)?

Objectives

Are the objectives aligned to Ofgem strategy?

Are the policy objectives clear and achievable?

Has a hierarchy of outcomes been set out?

Are the targets SMART?

Options

Have a sufficiently wide range of options been explored?

Has a long list to short-listing process been followed? If not, are there sound reasons?

Has any potentially promising option been ruled out of detailed appraisal without substantive reasoning?

Have stakeholders commented on these during the consultation?

Assessment of impacts

Has the appropriate approach to analysis been chosen? Does it accord with economic theory and supply and demand characteristics?

Has economic welfare been correctly estimated?

Do the results rely on behavioural theory?

Has the correct 'do-nothing' or Business as Usual scenario been quantified and monetised?

How transparent is the data used in analysis?

Are key assumptions clear?

Is the decision underpinned by a model?

If the model has been developed internally, has the model been quality assured at Senior Responsible Owner level? Has the model been quality assured by Analytical Quality?

If the model is developed externally, has an assumption log been provided?

Have all impacts of the regulatory proposal been identified, including any unintended consequences?

Is the price basis and base year for discounting cost and benefits clear?

Is the period for the calculation of the net present value long enough to encompass all important costs and benefits, and has the appropriate discount rate been used?

Have all costs been valued at their opportunity costs?

Are implementation costs clearly identified and separate from ongoing costs?

Have carbon impacts been correctly accounted for using MACC with no double counting?

Is there any other double counting/Transfer payment evident?

Are costs and benefits robust? If not, how material is this?

Is it easy to see the most important risks and uncertainties?

Have risks and uncertainties been analysed in an appropriate manner?

Are there material costs to industry in implementing the policy change (including regulatory burden)?

Are distributional aspects well-articulated (using the CADIF if appropriate)?

Have Public Sector Equality Duties been considered (either in analysis, by decision makers or legal advisors)

Have competition aspects been assessed using appropriate metrics and evidence?

Has financial resilience been considered?

Have effects on economic growth been considered?

Have the outcomes and responses of public consultation (where appropriate) been used as evidence to inform the estimates of impacts presented for post-consultation stage IAs?

Is there evidence that other relevant Departments or other public bodies (where appropriate) have been involved in forming the estimates of impacts presented?

Assess non-monetary impacts thoroughly

Are non-monetary impacts important to this decision?

If they are, what are their characteristics: monetary but qualitative, non-monetary but quantifiable, non-monetary and unquantifiable?

Has the quantification and/or valuation of other non-monetised impacts been undertaken in accordance with common techniques (eg description, weighting and scoring, or Harvey Ball diagrams)?

Are these non-monetised impacts presented in a way that enables them to be considered and clearly compared across the different options considered in a systematic manner?

Have issues of public risk or health and safety been considered?

Has Security of Supply been considered as a non-monetisable aspect or in another way?

Has Climate resilience been considered?

Has the Green Book guidance on transformational change been considered?

Explain and present results clearly

Is it clear who will benefit and who will bear the cost under each option, when these impacts will be incurred, and by how much?

Does the IA reference the source of data, research and evidence used and is the robustness of each of these clearly demonstrated?

Does the identification of a preferred option accord with the evidence?

Post Implementation

Are there arrangements to monitor and evaluate the outcomes of the decision?

If no arrangements are in place, what is the justification?

Appendix 4 Licensing of Carbon Dioxide Transport and Storage (Part 1 of Energy Act 2023) and our duty to carry out IAs under section 30.

(1) The principal objectives of the Secretary of State and the GEMA in carrying out their respective functions under this Part are to—

- (a) protect the interests of current and future transport and storage network users;
- (b) protect the interests of any consumers whose interests the Secretary of State or the economic regulator (as the case may be) considers may be impacted by the exercise of their respective functions under this Part;
- (c) promote the efficient and economic development and operation of transport and storage networks, having regard to the need for licence holders to be able to finance their licensable activities.

(2) In this Part the GEMA is referred to as the “economic regulator”.

(3) The Secretary of State and the economic regulator must carry out their respective functions under this Part in the manner which the Secretary of State or the economic regulator (as the case may be) considers is best calculated to further the principal objectives, wherever appropriate by—

- (a) promoting effective competition between persons engaged in, or in commercial activities connected with, the activities mentioned in [section 2\(2\)](#);
- (b) promoting the resilience of transport and storage networks;
- (c) protecting the public from dangers arising from the construction, operation and decommissioning of infrastructure used for the purposes of activities mentioned in [section 2\(2\)](#).

(4) In carrying out functions under this Part in accordance with the preceding provisions of this section, the Secretary of State or the economic regulator (as the case may be) must have regard to—

- (a) the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed, and any other principles appearing to the Secretary of State or the economic regulator to represent the best regulatory practice;
- (b) the need to contribute to the achievement of sustainable development.

(5) In carrying out functions under this Part in accordance with the preceding provisions of this section the Secretary of State must have regard to the Secretary of State's duties under sections 1 and 4(1)(b) of the Climate Change Act 2008 (carbon targets and budgets).

(6) In carrying out functions under this Part in accordance with the preceding provisions of this section, the economic regulator must have regard to—

(a) the need to assist the Secretary of State's compliance with the duties mentioned in [subsection \(5\)](#);

(b) the targets specified in [subsection \(8\)](#).

(7) In exercising their respective functions in relation to licensable activities, the Secretary of State and the economic regulator may have regard to the desirability of the efficient and effective operation of the energy system (or any part of it) in the United Kingdom or any part of the United Kingdom.

(8) The targets referred to in subsection [\(6\)\(b\)](#) are—

(a) the net-zero emissions target, as defined in section A1(1) of the [Climate Change \(Scotland\) Act 2009 \(asp 12\)](#);

(b) the interim targets, as defined in section 2 of that Act;

(c) a target in, or set under, section 1 or 2 of the Climate Change Act (Northern Ireland) 2022;

(d) a target in, or set under, section 29 or 30 of the [Environment \(Wales\) Act 2016 \(anaw 3\)](#).

(9) In this section—

“transport and storage network user” means a person who is, or seeks to be, a party to arrangements for carbon dioxide to be transported to a relevant site for the purpose of disposal by way of geological storage;

“transport and storage networks” means infrastructure and facilities for—

(a) the disposal of carbon dioxide by way of geological storage (or injection for the purposes of geological storage) at a relevant site, or

(b) the transportation of carbon dioxide to a relevant site for the purpose of such disposal;

“relevant site” means a site that is—

(a) in the United Kingdom, or

(b) in, under or over—

(i) the territorial sea adjacent to the United Kingdom, or

(ii) waters in a Gas Importation and Storage Zone (within the meaning given by section 1 of the Energy Act 2008).

(10) For the purposes of this Part activities are “licensable activities” if undertaking them without the authority of a licence or exemption constitutes an offence under [section 2\(1\)](#).

Section 30 Duty to carry out impact assessment

(1) This section applies where—

(a) the economic regulator is proposing to do anything for the purposes of, or in connection with, the carrying out of any function exercisable by it under or by virtue of this Part, and

(b) it appears to the economic regulator that the proposal is important;

but this section does not apply if it appears to the economic regulator that the urgency of the matter makes it impracticable or inappropriate for the economic regulator to comply with the requirements of this section.

(2) A proposal is important for the purposes of this section only if its implementation would be likely to do one or more of the following—

(a) involve a major change in the activities carried on by the economic regulator;

(b) have a significant impact on persons engaged in the capture, transportation or storage of carbon dioxide;

(c) have a significant impact on persons engaged in commercial activities connected with the capture, transportation or storage of carbon dioxide;

(d) have a significant impact on the general public in the United Kingdom or in a part of the United Kingdom;

(e) have significant effects on the environment.

(3) Before implementing its proposal, the economic regulator must either—

(a) carry out and publish an assessment of the likely impact of implementing the proposal, or

(b) publish a statement setting out its reasons for thinking that it is unnecessary for it to carry out an assessment.

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- (4) An assessment carried out under this section must—
- (a) include an assessment of the likely effects on the environment of implementing the proposal, and
 - (b) relate to such other matters as the economic regulator considers appropriate.
- (5) In determining the matters to which an assessment under this section should relate, the economic regulator must have regard to such general guidance relating to the carrying out of impact assessments as it considers appropriate.
- (6) An assessment carried out under this section may take such form as the economic regulator considers appropriate.
- (7) Where the economic regulator publishes an assessment under this section—
- (a) it must provide an opportunity of making representations to the economic regulator about its proposal to members of the public and other persons who, in the economic regulator's opinion, are likely to be affected to a significant extent by the proposal's implementation,
 - (b) the published assessment must be accompanied by a statement setting out how representations may be made, and
 - (c) the economic regulator must not implement its proposal unless the period for making representations about the proposal has expired and it has considered all the representations that were made in that period
- (8) Where the economic regulator is required (apart from this section)—
- (a) to consult about a proposal to which this section applies, or
 - (b) to give a person an opportunity of making representations about it,
- the requirements of this section are in addition to, but may be performed contemporaneously with, the other requirements.
- (9) Every report under [section 41](#) (annual reports on transport and storage licensing functions) must set out—
- (a) a list of the assessments under this section carried out during the financial year to which the report relates, and
 - (b) a summary of the decisions taken during that year in relation to proposals to which assessments carried out in that year or previous financial years relate.
- (10) The publication of anything under this section must be in such manner as the economic regulator considers appropriate for bringing it to the attention of the persons
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who, in the economic regulator's opinion, are likely to be affected if its proposal is implemented.