

Guidance

Guidance on our economic regulation of carbon dioxide transport and storage

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This guidance document ('the Economic Guidance') outlines aspects of Ofgem's approach to the economic regulation of a relevant carbon dioxide transport and storage licensee ('the Licensee'). It explains Ofgem's approach and the principles we will have regard to when making decisions that affect the Licensee, and where to find more information.

Ofgem is the Office of Gas and Electricity Markets. We are the independent energy regulator for England, Scotland and Wales (Great Britain), and we are governed by the Gas and Electricity Markets Authority ('the Authority'). The terms "Ofgem", "the Authority", "we", "us" and "our" may be used interchangeably in this document.

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1. Introduction

- 1.1 This Economic Guidance sets out the principles we will have regard to in our decision making for the economic regulation of a carbon dioxide transport and storage licensee ('a Licensee') as set out in relevant legislation.
- 1.2 This Economic Guidance is intended to be read alongside the Licensee's Carbon Dioxide Transport and Storage licence ('the Licence') and in conjunction with Ofgem's other guidance documents relevant to the regime, including but not limited to Cost Assessment Guidance, Distress Guidance and Enforcement Guidance. For the sake of clarification, where there is any conflict between this Economic Guidance and the Licence, the Licence takes precedence. Capitalised terms in this Economic Guidance are as defined in the Licence unless the context suggests otherwise, and we may replicate any definitions in this Economic Guidance for clarity.
- 1.3 We note that the Licensee is also subject to other regulation and arrangements, with for example the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED), the North Sea Transition Authority (NSTA), the Environment Agencies and the Crown Estate. We will work together with other public bodies regulating the Licensee to avoid unnecessary duplication, conflicting regulations and to reduce the risk of perverse incentives. Cooperation with other public bodies may be enhanced by an inter-regulatory Memorandum of Understanding (MoU). For example cooperation between NSTA and Ofgem is covered by an [inter-regulatory MoU](#) which may be updated from time to time. MoUs between different regulators may be published, however the decision whether to publish any MoU will be between the respective regulators. More broadly, Ofgem is a member of [the UK Regulators' Network \(UKRN\)](#), working with other regulators in the UK to share knowledge and innovation, explore cross-cutting issues and build better ways of working.
- 1.4 Ofgem, Great Britain's independent energy regulator, is bound by rigorous public law principles with regards to our decision-making, and will act lawfully, rationally and fairly. In performing our duties and functions, including in the administration of the economic regulatory regime (ERR), we must also have regard to the need to adhere to principles of regulatory best practice, under which regulatory activities should be:
- transparent
 - accountable

- proportionate
- consistent
- targeted only at cases in which action is needed

Scope of Economic Guidance

- 1.5 This Economic Guidance outlines how we expect to approach decisions in our determination of aspects of the Licence, such as the determinations of the lengths of the Regulatory Periods and the Revenue Calculations, including the building blocks which form those calculations such as the weighted average cost of capital (WACC) and depreciation. As set out in section 1.7 below, guidance on our cost assessment process and principles is expected to be covered by a separate document.
- 1.6 This Economic Guidance is applicable to Licensees who have been granted their Licence by the Secretary of State under Track-1 of the UK Government's CCUS Programme and is only applicable to those Track-1 Projects, as [confirmed in the October 2021 update](#). Any projects outside the scope of Track-1 may be subject to different licence conditions and guidance.
- 1.7 In addition to this Economic Guidance, Ofgem intends to issue separate guidance documents. We expect to issue a number of guidance documents specific to this ERR, or where appropriate use existing Ofgem guidance documents, which may be amended where required to apply to this ERR, to provide greater clarity on our approach to regulation. The list of documents we currently expect to issue or refer to, includes, but is not limited to:
- A high level "Cost Assessment Guidance" to help potential Licensees understand how we will assess the costs claimed for the construction and operation of their Onshore Transportation System and Offshore Transportation and Storage System ('the T&S Network').
 - Existing Ofgem Impact Assessment Guidance and Data Best Practice Guidance.
 - Specific guidance on regulatory reporting, enforcement, the decommissioning fund regime, our response to a Licensee experiencing financial or operational distress and the Indicative Credit Rating Process.

2. Legislative framework and Ofgem's duties

Section summary

This section provides a high-level overview of the key aspects of the enabling legislative framework for the Licensee and for Ofgem's relevant statutory duties and the considerations we must have regard to when performing these duties. This Economic Guidance is not exhaustive with regards to legislation that applies to Licensees nor with regards to the provisions under the legislation described nor as to Ofgem's statutory duties, roles and responsibilities.

- 2.1 Ofgem is the Office of Gas and Electricity Markets. We are the independent energy regulator for England, Scotland and Wales (Great Britain), and we are governed by the Gas and Electricity Markets Authority ('the Authority').
- 2.2 The Authority's statutory powers, duties and objectives in relation to the economic regulation of a Licensee are set out in [the Energy Act 2023](#) ('the Act'). Broadly, the Authority's principal objectives in relation to carbon dioxide T&S Networks are to:
 - protect the interests of current and future users of the T&S Network.
 - protect the interests of any consumers whose interests the Authority considers may be impacted by the exercise of its functions.
 - promote the efficient and economic development and operation of T&S Networks, having regard to the need for the Licensee to be able to finance its licensable activities.
- 2.3 The Authority must carry out its functions in the manner that it considers is best calculated to further the principal objectives by:
 - promoting effective competition between persons engaged in, or in commercial activities connected with, the licensable activities;
 - promoting the resilience of T&S Networks; and
 - protecting the public from dangers arising from the construction, operation and decommissioning of infrastructure used for the purposes of the licensable activities.
- 2.4 In carrying out its functions the Authority must have regard to:
 - 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 Authority to represent the best regulatory practice.

- the need to contribute to the achievement of sustainable development.

2.5 As defined in the Act, “Licensable activities” are a) operating a site for the disposal of carbon dioxide by way of geological storage and b) providing a service of transporting carbon dioxide by a licensable means of transportation.

2.6 At the same time, the Authority must have regard to:

- the need to assist the Secretary of State’s compliance with its duties under sections 1 and 4(1)(b) of the Climate Change Act 2008 (carbon targets and budgets);
- the specific targets under the Climate Change (Scotland) Act 2009, the Climate Change Act (Northern Ireland) 2022 and the Environment (Wales) Act 2016 (as referenced in the Act); and
- the strategic priorities set out in the CCUS strategy and policy statement (as defined in the Act).

2.7 In exercising its functions in relation to licensable activities, the Authority 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.

3. Ofgem's approach to determinations

Section summary

This section outlines the approach Ofgem will take in making some of its determinations in the economic regulation of a Licensee.

The Secretary of State will determine the settlement with Licensees for the First Regulatory Period of the Licence. In the second and subsequent Regulatory Periods we will determine ongoing settlements through regulatory determinations which includes setting expenditure allowances and Allowed Revenue, as well as performance targets and associated incentives.

Overarching principles of our approach to determinations

General

- 3.1 When making our decisions and determinations, we will take into consideration a broad range of issues, risks, mitigations and obligations that may be applicable to Licensees. We will have regard to the range of contracts and agreements that an efficient notional Licensee would be expected to be party to such as the Government Support Package (GSP) and the Revenue Support Agreement (RSA) under HMG's overarching carbon dioxide transport and storage regulatory investment model (TRI model) and we will consider the regulatory and other legal requirements applicable to the Licensee. We will not consider issues in isolation.
- 3.2 Our approach to developing methodology and making determinations will be based on our approach in the other sectors we regulate that have a regulatory asset base model, including the gas and electricity network companies of Great Britain under RIIO-2 ('the G&E Networks'). Ofgem acknowledge that although T&S Networks will have similarities to other sectors we regulate, both in terms of physical aspects and the economic regulatory aspects (for example, having a regulatory asset base revenue model and incentive payments linked to availability of the assets) there are also some important differences when compared to G&E Networks, electricity interconnectors or offshore transmission owners.
- 3.3 In developing the methodology and making determinations we will have regard to the relative characteristics and risk profiles of T&S Networks, and the extent

to which they may impact Licensees' revenues and returns. We expect the relative characteristics and risk profiles of the different sectors we regulate to vary over the duration of the regulatory regime.

3.4 We note the following relative characteristics which may, in isolation, contribute towards increasing the risk profile of T&S Networks relative to G&E Networks:

- The extent to which new or innovative technologies have been deployed for the first time at scale.
- Subsurface risk and uncertainty. It is expected that subsurface uncertainty will decrease as projects mature and more data becomes available as well as whether or not specific risks materialise. When possible, we will also take into consideration notional project risk as a comparison across the sector as it develops.
- The high level of expected Capex as a proportion of the RAV during construction of the Approved T&S Network, compared to the existing networks in other sectors we regulate.

3.5 Similarly, we note the contractual structure and the TRI model may have the impact of decreasing the risk profile of T&S Networks and mitigating some of the risks referenced in section 3.4. This includes elements which are applicable at the time any decision is made, such as the Licence, the GSP and the RSA.

Consultation approach

3.6 Where we are proposing to make changes to Licences or licensing, where relevant we will consult on any proposed changes in line with our duties and [Ofgem's Consultation Policy](#), outlined below.

3.7 Where we consult, we aim to gather views from all relevant stakeholders.

3.8 When we consult, we will consult fairly. What is fair will depend on the particular circumstances, but we must consult in accordance with these four basic principles:

- When proposals are still at a formative stage (when the responses to the consultation can still influence the outcome).
- There must be good reasons for particular proposals.
- There must be adequate time for consideration and response.
- Responses must be conscientiously taken into account.

- 3.9 We will work with Licensees to maximise the effectiveness of the consultation and aim to minimise the impact on projects, by:
- Enabling stakeholder views to be considered but respecting normal project execution plans.
 - Consulting at appropriate points in the project and procurement processes, with the aim of avoiding unnecessary disruption to the Licensee, its supply chain and its Users.
 - We will consider all responses we receive in accordance with the consultation. For further information on our approach to consultation, see Ofgem’s Consultation Policy.

Rights of appeal

- 3.10 In all of our decisions, where determinations or policy changes trigger a Licence modification for implementation, we will follow the Licence modification process as set out in the Act, which includes a right for Licensees to make an appeal to the Competition and Markets Authority (CMA) in relation to a decision we make to proceed with a Licence modification.

Licence determinations

- 3.11 Within this section we have set out aspects of our determinations under the Licence.

Handover, COD Readiness, Commissioning and System Acceptance

- 3.12 The processes for Handover, COD Readiness, Commissioning and System Acceptance are set out in the Licence. Provided Ofgem is satisfied with the required evidence, we will confirm that the relevant activity has been completed.

Network capacity and development

- 3.13 Under the Licence, the Licensee may be required to expand or enhance the T&S Network, including by way of an addition, expansion or enhancement to an existing T&S Storage Site, or cancel part of the T&S Network. Where these constitute a potential Change in Scope Re-opener, the process set out in the Licence shall be followed with reference to the guidance on a Re-opener provided in both this document and the Re-opener Guidance and Application Requirements Document. The obligations of the Licensee in relation to any

network expansion and increase to the Obligated Network Capacity arising from network expansion will be determined in accordance with the Licence.

Ongoing reconciliation of the SRAV/RAV

- 3.14 Throughout the duration of the Licence, the Shadow Regulatory Asset Value (SRAV), or Regulatory Asset Value (RAV) as applicable, will be reconciled during the Post Construction Review, Post Commissioning Review and the Periodic Review processes taking into consideration any relevant expenditure for the applicable SRAV or RAV formula. The Licensee shall provide Ofgem with such information as we may require to enable us to carry out each review and in reconciling the SRAV or RAV, we will follow the approaches set out in our separate Cost Assessment Guidance.

Decommissioning fund obligations

- 3.15 Obligations regarding funding of both onshore and offshore decommissioning, monitoring and related costs are set out in the Licence and, in relation to Offshore Infrastructure in particular, the obligations interface with obligations from other regulators such as OPRED and NSTA, under the legislative framework and guidance underpinning offshore decommissioning and post-closure monitoring.
- 3.16 Supporting guidance from Ofgem on the decommissioning fund regime will be set out in a decommissioning fund regime guidance document, which will provide guidance on the process to set the Decommissioning Building Block of the Allowed Revenue calculation and may reference the roles of other regulators involved in decommissioning. No further guidance on decommissioning funds will be set out here to avoid duplication.

Financing obligations

- 3.17 Financial resilience is the extent to which a Licensee's financial arrangements enable it to avoid, cope with and recover from disruption, whether that disruption is driven internally by or externally to the Licensee. It is vital that Licensees have access to the financial resources necessary to deliver their obligations and commitments to their Users, both now and into the future. We expect Licensees to demonstrate via their obligations under the Licence that they have adequate resources, and that they are on a sound financial footing

with robust and transparent financing arrangements clearly aligned with the interests of their Users.

- 3.18 We will proactively monitor both the financial resilience of Licensees and the obligations on Licensees which relate to credit quality. This will accompany financial reporting obligations under the Licence that require the Licensee to report information to us that helps to measure its financial resilience.
- 3.19 The Licence does not contain obligations with regard to achieving a particular credit rating during the First Regulatory Period. As the carbon dioxide transport and storage sector matures, we are likely to align the obligations on Licensees which relate to credit quality with other sectors we regulate. As set out in the Licence we may introduce further credit quality obligations following the Indicative Credit Rating Process, or we may include obligations on the Licensee to undertake reasonable endeavours to maintain certain debt gearing and / or coverage ratios in excess of defined thresholds. In the event we introduce further credit quality obligations on Licensees, we expect to have regard to the pathway Licensees can take to transition to meet these obligations.
- 3.20 Across the range of sectors subject to regulation by Ofgem, licences typically include obligations that:
- Alert us to the risk of financial distress by licensees and provide early warning signs before a licensee is at imminent risk of financial distress.
 - Reduce the likelihood and impacts of financial distress to users of networks, and the wider public.
 - Influence wider business decisions to promote financial resilience and appropriate capital structures.
- 3.21 Subject to any standard Licence modification processes that we will undertake (such as consultation), if we decide to introduce or modify Licence obligations placed on Licensees that relate to credit quality, or to reduce the impact of financial distress more generally, we expect to have regard to:
- The extant ERR at the time.
 - Our assessment of the effectiveness of the extant ERR at managing (or allowing the Licensee to manage) risks relating to poor credit quality and financial distress.
 - Relevant regulatory decisions across different regulatory regimes relating to credit quality.

- The impact on the ability of an efficient Licensee at the notional capital structure (the concept of notional capital structure is outlined from section 3.59 onwards) to finance its licensable activities.
- The impact on the Licensee's actual capital structure.
- The interaction between introducing any additional obligations on the Licensee and the existing ERR, as well as our statutory duties.
- The balance between introducing any additional administrative burden on Licensees and the relative benefits to Users.

Approach to financeability

- 3.22 As stated in section 2, one of our principal objectives is to promote the efficient and economic development and operation of T&S Networks, having regard to the need for the Licensee to be able to finance its licensable activities. This is commonly referred to as our 'financeability duty'.
- 3.23 Based on established practice within Ofgem, a financeability assessment is designed to assess whether, when all the individual components of our determination are taken together (including all elements of the Revenue Calculations, our determination of the appropriate notional capital structure and any incentive mechanisms), an efficient Licensee at the notional capital structure can secure efficient financing in relation to its licensable activities. As part of the financeability assessment, the Licensee is expected to provide its business plan, in which it will outline the credit quality it considers appropriate in order to finance its activity efficiently alongside assurance the business plan is financeable.
- 3.24 We expect to undertake a financeability assessment where necessary, such as during each Periodic Review or as a result of a re-opener, doing so on an efficient notional company basis, in line with our approach to regulating G&E Networks and consistent with our duties. As outlined in sections 3.2 to 3.5 we understand that there are similarities and differences between the risk profiles of T&S Networks compared to G&E Networks and so may diverge from our approach for G&E Networks if there are compelling reasons to do so.
- 3.25 We currently expect to take into account our assessment of:
- The credit quality of the Licensee.
 - the appropriate capital structure for Licensees.

- The approaches taken by comparable businesses operating in the market (or in similar markets) to manage financial resilience.
 - The ability of Licensees to service debt on a notional capital structure basis.
 - Any relevant evidence provided by the Licensee to support our decision-making, including information on:
 - The Licensee's own target credit rating or overall credit quality as contained in its business plan.
 - The current phase of the project (i.e. Construction Period, Commissioning Period or the Operational Period), large-scale expansions of the T&S Network including additions of new Storage Site(s), and current and forecast performance against the Project Programme.
 - Differences, and the causes of differences, between the Licensee's actual capital structure and notional capital structure.
 - Rating agency methodologies if applicable.
- 3.26 Our assessment will also include stress testing against a range of scenarios. The outputs of this testing may inform our decision-making on the balance of risks in the relevant regulatory settlement.
- 3.27 We expect to ask Licensees to provide board assurance that the Licensee is financeable on both a notional and actual capital structure basis. We may also consult on our assessment and approach to financeability (including our construction of an efficient notional capital structure for a Licensee), providing Licensees and stakeholders with the opportunity to support or provide feedback on our draft positions and to submit views on the revenues required in order to finance Licensee's licensable activities.

Re-openers

- 3.28 When assessing a potential Supervening Event Re-opener, Ongoing Devex Re-opener, Energy Costs Re-opener or an Uncertain Cost Events Re-opener (each, a 're-opener'), we will consider whether any adjustments are required to our determinations.
- 3.29 As a result of a re-opener we may adjust any part of our determination that we consider relevant to the re-opener and in accordance with the mechanisms in the Licence, taking account of whether there are material changes in risk profile (noting that a re-opener such as a Change in Scope could increase or decrease

business risk). We may adjust aspects of the calculation for Allowed Revenue, the calibration of incentives, or adjustments to the capitalisation rules that apply to the Licensee.

- 3.30 The process for assessing cost elements as a result of a re-opener is covered by our separate Cost Assessment Guidance and further guidance on the processes around re-openers are covered in the Re-opener Guidance and Application Requirements Document.

Determinations following the First Regulatory Period

- 3.31 Within this section we have set out aspects of our role which include determinations we will make only in subsequent Regulatory Periods following the First Regulatory Period.

Length of second and subsequent Regulatory Periods

- 3.32 The length of the First Regulatory Period will be determined by the Secretary of State. Ofgem will determine the length for each subsequent Regulatory Period. Our aim is to balance the trade-off between the benefits and limitations of different lengths of Regulatory Period, noting having Regulatory Periods that are consistent in length has advantages. For example, in our price controls for G&E Networks the current length of the regulatory period is five years. In making the decision on the length of the Regulatory Period, we will consider factors such as the level of uncertainty regarding network activity and our ability to reset cost allowances and performance targets. We will make any decision on the length of the next Regulatory Period sufficiently in advance of such Regulatory Period.

Weighted Average Cost of Capital

- 3.33 This section sets out the principles of Ofgem's approach in our determinations of the WACC allowance, which is used to calculate the Return on Capital, one of the building blocks of the Allowed Revenue calculation set out in the Licence.
- 3.34 Our objective in determining elements of the Allowed Revenue is to enable Licensees to earn a return that allows them to efficiently finance their licensable activities (on a notional capital structure basis) and represents good value for Users. We have extensive experience in setting an appropriate cost of capital across the sectors we currently regulate.

- 3.35 We expect our approach to determining the WACC will align with the framework, methodology and parameters we use to determine the allowed return in G&E Networks, unless justified by factors specific to the ERR as outlined in sections 3.2 to 3.5 we would also expect to take into account any further regulatory guidance where relevant and as appropriate, for example, the extant [UKRN cost of capital guidance](#).
- 3.36 The WACC for the First Regulatory Period will be determined by the Secretary of State. For each subsequent Regulatory Period, Ofgem will determine the WACC by weighting the cost of equity and cost of debt allowances, in line with our determination of an efficient notional capital structure for a Licensee

Cost of equity

- 3.37 In general, our existing approach is based on an established Capital Asset Pricing Model methodology, as outlined in the UKRN cost of capital guidance, used for G&E Network price controls. This remunerates the Licensee for systematic (or undiversifiable) risks and recognises that investors are responsible for managing their exposure to unsystematic (or diversifiable) risks.
- 3.38 As such, we expect that our overall approach will identify the risks that a Licensee is exposed to, and then subsequently determine which of those risks are systematic using benchmarking and other analytical tools.
- 3.39 We will undertake comparisons to inform an efficient cost of equity and intend to compare and contrast with businesses that contain elements of comparable risks, noting that this collection of comparators may develop over time. The relative characteristics and risk profiles of the comparators will be assessed against those of carbon dioxide transport and storage companies (T&SCos), noting that we expect to use the factors which are set out in sections 3.2 to 3.5 to inform our estimate of equity beta.
- 3.40 Where a comparative approach is unable to robustly inform an efficient cost of equity, we may also undertake further risk analysis to help us understand the appropriate level of allowed return we should provide the Licensee for the risks it is taking. A worked example of how betas have been previously assessed by Ofgem and other regulators is set out below.
- 3.41 In our determinations for the second Regulatory Period, we will also have regard to the methodology for calculating the cost of equity in the First Regulatory Period as determined by the Secretary of State, as part of our evidence base for

making a decision. In subsequent Regulatory Periods, we expect to have regard to the methodology for calculating the cost of equity for the preceding Regulatory Period.

- 3.42 In any case, for all Regulatory Periods subsequent to the First Regulatory Period, when determining the cost of equity we expect to review the relative characteristics and risk profiles of T&S Networks versus the relevant comparators, taking into account of the factors noted in sections 3.2 to 3.5 and 3.44.

Outline of an approach taken to assess beta in other sectors:

We have outlined an example of an approach taken in other regulated sectors for assessing an appropriate beta when there are limited comparable listed companies, for illustration purposes. For the carbon dioxide transport and storage sector, we expect there will initially be either no or a limited cohort of comparable companies so we may take a similar approach, adapting as appropriate for the facts and circumstances at the time. We expect our approach to adapt over time as more information becomes available.

Regulators typically rely on relevant listed comparators to estimate the beta that is appropriate for the companies subject to the specific price control being set. This process is made more difficult where there are no or limited directly comparable listed peers.

Regulators face this constraint on a regular basis. There are no 'pure play' listed G&E Networks (listed companies who only undertake activities related to regulated G&E Networks), limiting the ability of Ofgem to directly assess the beta of G&E Network companies. In the RIIO-2 price controls, Ofgem met this challenge by using a mix of listed comparators and weighting towards the most appropriate. Specifically, Ofgem noted that:

- Water companies Severn Trent plc (SVT), United Utilities plc (UU) and Pennon plc (PNN), as well as energy company National Grid plc (NG), were the best proxies of the systematic risk faced by energy networks.
- NG data captured risks for all relevant sub-sectors within the price control, notwithstanding it had exposure to US network assets.
- NG had approximately 45% of its total RAV in UK networks (with approximately the same exposure to US network assets).

- Analysis suggested that NG's relative risk has varied over time – sometimes the risks of the US business appearing higher, and sometimes the risks of the UK business appearing higher.
- SSE plc (SSE) had a higher beta because of its material retail supply operations and generation activities – both of which have higher systematic risk than G&E Networks.

Taking all of these factors into account, Ofgem based its G&E Network beta estimate on data from SVT, UU, PNN and NG, but not SSE, placing greater weight on NG data. Find further details on Ofgem's approach to the RIIO-2 price controls on our website.

- 3.43 We will monitor and consider other regulatory approaches used in other sectors, where relevant. Presently, for example, there are no listed direct comparators to the UK's air traffic control operator, NATS, which is subject to price controls by the Civil Aviation Authority (CAA). Both the CAA and the CMA (during a redetermination of the NATS RP3 price control) considered a range of potential comparators which, in aggregate, gave insight into the types and level of systematic risk faced by NATS. For example, the CMA considered a range of potential comparators including utilities, airports and airlines when assessing the beta appropriate for NATS.
- 3.44 As at the date of this guidance, there are no pure play listed comparators to T&SCos. The future approach to determining the beta is likely to include a range of comparators from listed entities that contain elements of the relevant characteristics and risk profile. In doing so, we expect to assess the T&SCo in question and its performance against the risk profile criteria set out in sections 3.2 to 3.5, informing our subsequent assessment of the T&SCos commercial characteristics, overall risk profile and systematic risk exposure. In doing so, Ofgem may consider the T&SCos relative exposure to components of systematic risk such as:
- exposure to demand volume risk;
 - exposure to demand price risk;
 - exposure to cost risk, including financing, currency, labour and input costs;
 - exposure to systematic project risk, such as risks associated with ongoing construction, large-scale expansions of the T&S Network including additions of new Storage Site(s); and
 - any offsetting mitigants to these risk exposures that limit exposure to systematic risk factors, such as protections within the regulatory framework (for example: re-openers and cost indexation), any government support

arrangements and any other contractual arrangements that could reasonably be expected to be put in place by an efficient Licensee.

- 3.45 Such an assessment would allow Ofgem to estimate the appropriate beta for the T&SCos using comparators that in aggregate, face similar types and levels of systematic risk to the T&SCos.
- 3.46 When making these assessments and calculating the appropriate return on capital for T&SCos at the future point in time, Ofgem will consider its relevant duties, including the 'financeability duty' as described in section 3.22.
- 3.47 As noted in section 3.33 onwards we currently expect the process used to assess the appropriate allowed returns to be in line with the process used when setting price controls for G&E Networks. For the avoidance of doubt, this similarity of process does not mean that the allowed returns should be similar. The risk-free rate and the total market return are market-level inputs and should not vary based on the company subject to the price control, all else being equal. Conversely, the beta input is specific to the company or sector being priced. The allowed return on equity will differ for each relevant price control so that they are calibrated to compensate for the level of systematic risks faced by investors. The specific mix of comparators used in either the energy network or T&SCo price controls will depend on Ofgem's assessment of exposure to systematic risks and the availability of relevant comparators at the time.

Cost of debt

- 3.48 While the Licensees are constructing the Approved T&S Network and possibly during the development and enhancement of the T&S Network under the Approved Project Development Plan (APDP) set at Licence Award, we recognise that the risk profile and debt drawdown requirements of the T&S Network means that arranging committed bank and institutional investor finance prior to each stage of construction is likely to represent better value for money than, for example, a programme of bond issuance typically used by G&E Networks.
- 3.49 Reflecting this, an indexation approach to setting cost of debt allowances is unlikely to be suitable during the First Regulatory Period and into the second Regulatory Period.
- 3.50 Therefore, to ensure that the initial debt financing and associated hedging is an economic and efficient form of financing that meets our principal objectives,

- Ofgem has had oversight of the process of the raising and execution of the initial debt financing and the associated hedging (the “Debt Oversight Process”).
- 3.51 Assuming Ofgem is satisfied with the Licensee’s approach to the initial debt financing and has confirmed its alignment with the Debt Oversight Process, we will calibrate debt allowances such that debt costs on a real basis are based on the outcome of the Debt Oversight Process subject to each Periodic Review.
- 3.52 At each Periodic Review, we intend to assess the degree to which we consider it continues to be value for money to fund Licensee’s previously raised debt instruments on a pass-through basis, taking into account:
- The debt costs for other licensees, including any new or additional debt raised or any debt refinancings that may have occurred between the Periodic Reviews;
 - The debt costs in the wider market, including credit spreads for other infrastructure projects; and
 - Any breakage fees or refinancing costs.
- 3.53 As part of the Periodic Review, we will take into account the views of relevant stakeholders.
- 3.54 We recognise, there may be limitations to the extent to which we can rely on data where comparable data sets are limited, and we acknowledge there may be differences between individual Licensees and recognise the different aspects of the T&S Network compared to G&E Networks as outlined in sections 3.2 to 3.5.
- 3.55 As a result of the Periodic Review, we only intend to revise the pass-through basis for existing debt allowances if we determine there is evidence of manifestly inefficient behaviour. For example, if it becomes demonstrably clear that the Licensee is forgoing persistent opportunities for efficient refinancing that result in lower costs for the Licensee and therefore the Users.
- 3.56 If the T&S Network raises a material amount of new or additional debt and associated hedging, subsequent to the initial debt financing, in order to finance expansion works it is anticipated that we will consider the new or additional debt costs, as a pass-through on a real basis, as long as the debt raise and hedging is subject to a new Debt Oversight Process and ongoing Periodic Reviews.
- 3.57 If the Licensee is required to refinance this initial debt financing or put in place new hedges or extend existing hedges due to the maturity of the initial debt financing or associated hedging it is anticipated that we will also consider these

refinanced debt and hedging costs, as a pass-through on a real basis, subject to a new Debt Oversight Process and the ongoing Periodic Reviews.

- 3.58 As the track record for T&S Networks develops over time and Licensees move towards having improved credit quality, we intend to develop the ERR in a manner which encourages Licensees to finance themselves as efficient corporate borrowers, seek an investment grade rating, and utilise a conventional corporate issuance model of raising debt financing through the bond markets.

Notional capital structure

- 3.59 We expect to make our determinations using a notional capital structure approach, in line with wider regulatory practice, reflecting our assessment of the risk profile of the Licensee compared to objective benchmarks and consistent with our duties.

- 3.60 This means the Licensee, subject to its Licence obligations and the Debt Oversight Process, is free to finance itself as it considers appropriate, and bears the risks arising from its own financing decisions, noting that Ofgem will generally calibrate price controls, weighing up our statutory duties, particularly regarding financeability, to a Licensee with an efficient notional capital structure.

- 3.61 To assign weights to the costs of equity and debt, we typically assume a notional capital structure for the relevant sector or regulated company. In determining a notional capital structure, we will take into account a broad range of considerations, which may include but not be limited to:

- Evidence on actual capital structures within T&S Networks.
- The notional capital structure for the First Regulatory Period as determined by the Secretary of State.
- The nature of the assets.
- The proposed length of the Regulatory Period.
- Other utility and infrastructure gearing levels.
- The risks which Licensees are likely to face.
- A capital structure which would support an appropriate level of financial resilience.

- 3.62 We expect that there will initially only be a small cohort of T&S Networks operating under this ERR. Reflecting this, we expect that when we determine the level of gearing within the notional capital structure, we will also take account

of, among other things, a broader assessment of issues and trends in comparator projects and similar sectors (e.g. other large construction projects, regulated networks and the businesses used in our assessment when determining an appropriate cost of capital, noting that there will be both similarities and differences in risk profile).

- 3.63 When determining a notional capital structure, we will make a decision at the time whether it is appropriate to set this at a level appropriate for all Licensees as a whole or whether it is appropriate to set the level for an individual Licensee.

Depreciation profile

- 3.64 The depreciation of the RAV forms one of the building blocks of the Allowed Revenue calculation set out in the Licence. It represents the remuneration that the Licensee receives for the previously incurred costs it was permitted to capitalise onto the RAV. To preserve intergenerational fairness between current and future Users, and to ensure appropriate incentives exist on management and investors over the duration of the regulatory regime, we remunerate capitalised expenditure over a specific time horizon.
- 3.65 The depreciation profile for the First Regulatory Period will be determined by the Secretary of State. For each subsequent Regulatory Period, Ofgem will review and determine the depreciation profile in line with our statutory duties. We do not anticipate making changes to the depreciation profile unless there are compelling reasons to do so. Where we propose to make changes, we intend to follow our approach to depreciation for G&E Networks and we will review the impact of the depreciation profile and any proposed changes surrounding depreciation, on a notional company basis. Additionally, we may take account of, among other things:
- The financeability of Licensees, including their ability to raise capital to finance subsequent capital expenditure, and our view of whether the change we are proposing is likely to enhance or degrade the Licensee's credit quality, when assessed on a notional company basis.
 - The interaction between changing the depreciation methodology and other aspects of the Licence, including any financial incentives and User and consumer interests, where impacted.
 - The ability of Licensees to service debt on a notional company basis.
 - A risk-adjusted view of the remaining asset life and the risk of early closure.

- The reasons why there are any changes to the expected asset life, taking into account the causes and any views of relevant stakeholders.
- A consideration of the impact of our proposed methodology on intergenerational fairness, broadly taking account of the costs and benefits of the T&S Network and considering the balance of these between current and future Users and consumers.

Availability Adjustment and store performance incentive

- 3.66 The availability adjustment regime for the First Regulatory Period has been determined by the Secretary of State, under which the performance of the T&S Network will be assessed against the Availability Target and the Availability Floor specified in the APDP.
- 3.67 We will review the overall incentives package for the Operational Period at the first Periodic Review and subsequently at each Periodic Review. In doing so we will consider any relevant evidence presented by the Licensees.
- 3.68 For the second and subsequent Regulatory Periods Ofgem intends to continue to include an availability adjustment to maximise the availability of the T&S Network to Users, always subject to the safe, economic, efficient and effective operation of the T&S Network, through minimising outages and to schedule planned outages in an efficient manner as outlined in the Licence.
- 3.69 Ofgem will consult on the design of a store performance incentive based on estimated store capacity, added to the mass of CO₂ actually stored, to set the financial incentive. The design and calibration of the potential store performance incentive has not been specified in the current Licence and will be developed ahead of the second Regulatory Period.
- 3.70 Licensees are best placed to own and manage the potential store risks. We expect store performance risks to be minimised by the due diligence and technical assurance processes pre-Licence Award, in line with the allocation of risks negotiated between the Secretary of State and T&SCos.
- 3.71 The availability and the store performance incentives will be designed and calibrated to reward optimum store usage. The intention is to balance the need to have an injectivity rate which supports the level of demand in the system with longer-term store capacity to exploit the total potential capacity of the store over its lifetime.

- 3.72 The target for the store performance will be the overall store capacity (MtCO₂) element of the Obligated Network Capacity as detailed in the APDP. We currently envisage that the store performance incentive will include a negative and positive adjustment element separated by a dead band.
- 3.73 Our current expectation is that the store performance incentive will be designed in a way that allocates the direct financial risk to notional equity only, and will be calibrated in line with our statutory objectives, our overarching principles described in section 3.1, and our approach to financeability described from section 3.22.
- 3.74 Across both the availability adjustment and the store performance incentive, we may utilise data from the previous Regulatory Periods in setting the incentives and developing models which support the incentives.
- 3.75 As indicated in section 3.1, when making our decisions and determinations, we will not consider issues in isolation and our overall approach to incentivisation of the whole of the Licensee's activities may include other regulatory tools and other potential changes we may make to the regulatory framework, such as reprofiling depreciation. Therefore, when setting and calibrating the availability adjustment and the store performance incentive, we will consider both the financial impact and interaction between incentives and the wider regulatory regime.