NON-SENSITIVE VERSION

BEFORE THE COMPETITION AND MARKETS AUTHORITY

IN THE MATTER OF AN APPEAL UNDER SECTION 23B OF THE GAS ACT 1986

B E T W E E N :

NATIONAL GRID GAS PLC

Appellant

and

GAS AND ELECTRICITY MARKETS AUTHORITY

Respondent

NOTICE OF APPEAL
ENERGY LICENCE MODIFICATION
RIIO-2

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SECTION 1: INTRODUCTION

A. Overview

1.1 National Grid Gas plc (**NGG** or the **Appellant**) is a subsidiary of National Grid plc and the licensed gas transmission owner (**TO**) and system operator (**SO**) which plans, constructs, owns and operates the high pressure National Transmission System (**NTS**) in Great Britain.

1.2 The Appellant holds a gas transporter licence (the **Licence**) treated as granted under section 7 of the Gas Act 1986 (**GA86**) authorising its gas transportation activities in respect of the NTS. The Appellant is therefore often referred to as National Grid Gas Transmission (**NGGT**) to denote that its activities are connected with the gas transmission system as opposed to the gas distribution network (**GDN**). NGG and NGGT are the same entity and the Appellant uses both these terms interchangeably in this Notice of Appeal (**NOA**) and supporting documents.

1.3 This appeal concerns the decision made by the Gas and Electricity Markets Authority (**GEMA** or the **Authority**)[1] on 3 February 2021 under section 23(1)(a) GA86 to modify the conditions of the Licence to give effect to the RIIO-T2 Final Determinations (**FD**)[2], which will operate from 1 April 2021 to 31 March 2026 (**RIIO-T2 Decision**).

1.4 The RIIO-T2 price control applies to electricity and gas transmission owners and replaces the existing RIIO-T1 price control which runs from 1 April 2013 to 31 March 2021. It is part of a broader suite of price controls – known collectively as the RIIO-2 price controls – which from 1 April 2021 also apply to the GDNs (**RIIO-GD2**) and the electricity system operator (**RIIO-ESO2**). References to RIIO-2 in this appeal can be read as applying to RIIO-T2.

1.5 GEMA's stated aim for RIIO-2 is to drive better services for consumers at the most efficient cost, at the same time as preparing network companies for the energy system of the future. In particular, its objective is to ensure that the price control provides sufficient funding to enable a wide range of Net Zero trajectories throughout the next decade. GEMA has acknowledged that its RIIO-2 price control is challenging for companies.[3]

B. Request for permission to appeal

1.6 The Appellant seeks permission under sections 23B(1) and (3) GA86 to bring an appeal (and, if permission is granted, to appeal) against the RIIO-T2 Decision in its capacity as a relevant licence holder.

1.7 Section 23B(2)(a) GA86 provides that a relevant licence holder (within the meaning of section 23 GA86) may bring an appeal. The Appellant is a 'relevant licence holder' as defined in section 23(10)(b) GA86 as it is the holder of a particular licence, the conditions of which are to be modified by the RIIO-T2 Decision.

1.8 Accordingly, the Appellant has standing to bring this appeal.

C. Legal framework

1.9 The Appellant recognises that the CMA has applied the relevant legal framework in previous appeals, and has therefore sought to summarise it as succinctly as possible in section 2.

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1 GEMA is supported by the Office of Gas and Electricity Markets (**Ofgem**). The Appellant refers interchangeably to GEMA, the Authority and Ofgem in this document, depending on the context.

2 In setting the RIIO-T2 price control for transmission companies, Ofgem has also made sector-specific decisions for each of electricity transmission (**ET**) (**RIIO-ET2**) and gas transmission (**GT**) (**RIIO-GT2**) where appropriate. However, the aspects of the RIIO-T2 decision that are the subject of this appeal are common to both ET and GT.

3 FD, Core Document, Chapter 1 [**NOA1/11**].

D. Scope of the appeal

1.10 In bringing this appeal, the Appellant has carefully considered the RIIO-T2 Decision and the objective of the Competition and Markets Authority (**CMA**) to dispose of appeals fairly and efficiently within the time periods prescribed by the GA86.[4]

1.11 Accordingly, the Appellant has confined its appeal to two discrete issues where the RIIO-T2 Decision is wrong. Ground 1 concerns GEMA's errors in setting the Cost of Equity (**COE**), which are explained in section 3. Ground 2 concerns GEMA's erroneous introduction of a deduction from NGG's allowed returns known as the "outperformance wedge", which is addressed in section 4. These decisions are wrong within the meaning of section 23D(4) GA86 for the reasons explained in sections 3 and 4 respectively, and as more particularly described in Annex 1 and Annex 2.

1.12 These errors are material because of their harmful impact on consumers, their financial impact on the Appellant over the period covered by RIIO-T2, the potential impact on future price controls and for reasons of regulatory and economic principle.

E. Key documents

1.13 The grounds of this appeal, reasons and supporting evidence are contained in this NOA, in Exhibit **NOA1**, and in the Witness Statements and Exhibits to those Witness Statements.[5]

1.14 The Appellant has provided written evidence for this appeal in the form of:

a) Witness Statement of Nicola Shaw, Executive Director, National Grid plc, dated 2 March 2021 (**NS1**)

b) Witness Statement of Chris Bennett, Director, UK Regulation, National Grid plc, dated 1 March 2021 (**CB1**)

c) Witness Statement of Darren Pettifer, Head of Regulatory Finance, National Grid plc, dated 2 March 2021 (**DP1**)

d) Expert Witness Statement of Mike Huggins, Director, Frontier Economics, dated 1 March 2021 (**MH1**) and exhibits:

(i) Cost of Equity for RIIO-2: An expert report prepared for National Grid dated 1 March 2021, (the '**Cost of Equity Report**') in support of Ground 1; and

(ii) The Deduction to RIIO-2 Allowed Equity Return in Anticipation of Future Outperformance: An expert report prepared for National Grid dated 1 March 2021 (the '**Wedge Report**') in support of Ground 2.

1.15 The Appellant has also included the following key documents in **NOA1**:[6]

No.	Document	Date	Exhibit Reference
Ofgem key price control documents			
1.	Open letter on the RIIO-2 Framework	12 July 2017	**NOA1/1**
2.	RIIO-2 Framework Consultation (**Framework Consultation**)	7 March 2018	**NOA1/2**
3.	RIIO-2 Framework Decision (**Framework Decision**)	30 July 2018	**NOA1/3**

[4] CMA Rules, rules 4.1 and 4.2 [**NOA1/36**].
[5] The Appellant has separately provided a master index of all documents.
[6] The Appellant has provided hyperlinks to any documents which are in the public domain in Annex 3.

No.	Document	Date	Exhibit Reference
4.	RIIO-2 Sector Specific Methodology Consultation	18 December 2018	**NOA1/4**
5.	RIIO-2 Sector Specific Methodology Consultation: Finance Annex	18 December 2018	**NOA1/5**
6.	RIIO-2 Sector Specific Methodology Decision	24 May 2019	**NOA1/6**
7.	RIIO-2 Sector Specific Methodology Decision: Finance Annex	24 May 2019	**NOA1/7**
8.	RIIO-2 Draft Determinations: Core Document	9 July 2020	**NOA1/8**
9.	RIIO-2 Draft Determinations: Finance Annex	9 July 2020	**NOA1/9**
10.	RIIO-2 Final Determinations: Overview	8 December 2020	**NOA1/10**
11.	RIIO-2 Final Determinations: Core Document – Revised	Originally published on 8 December 2020 with revised version published on 3 February 2021	**NOA1/11**
12.	RIIO-2 Final Determinations: Finance Annex – Revised	Originally published on 8 December 2020 with revised version published on 3 February 2021	**NOA1/12**
13.	RIIO-2 Final Determinations: Impact Assessment Annex	8 December 2020	**NOA1/13**
14.	RIIO-2 Statutory Licence Modification – Notice	3 February 2021	**NOA1/14**
15.	RIIO-2 Statutory Licence Modification – Reasons and effects	3 February 2021	**NOA1/15**
Other relevant documents			
16.	'Estimating the cost of capital for implementation of price controls by UK Regulators: An update on Mason, Miles and Wright (2003)' authored by Burns, Mason, Pickford and Wright (**UKRN Report**)	6 March 2018	**NOA1/16**
17.	CMA Provisional Findings, PR19 Redetermination (**PR19 PFs**)	29 September 2020	**NOA1/17**
18.	CMA Working Paper: Choosing a point estimate for the Cost of Capital, PR19 Redetermination (**Aiming Up Working Pape**r)	8 January 2021	**NOA1/18**
19.	NATS Provisional Findings (**NATS PFs**) and NATS Final Report (**NATS Final Report**), together referred to as NATS (En Route) Plc/CAA Regulatory Appeal (**NATS Appeal**)	24 March 2020 / 23 July 2020	**NOA1/19**
20.	BGT Final Determination Report – Energy licence modification appeal brought by British Gas Trading (*BGT v GEMA* [2015]) in respect of GEMA's RIIO-1 electricity distribution price control (RIIO-ED1 appeal)	29 September 2015	**NOA1/20**

No.	Document	Date	Exhibit Reference
21.	NPg Final Determination Report – Energy licence modification appeal brought by Northern Powergrid (*NPg v GEMA* [2015]) in respect of GEMA's RIIO-1 electricity distribution price control (RIIO-ED1 appeal)	29 September 2015	**NOA1/21**
22.	Bristol Water Final Determination Report – Bristol Water plc, 'A reference under section 12(3)(a) of the Water Industry Act 1991'	6 October 2015	**NOA1/22**
23.	Firmus Final Determination Report – Appeal by Firmus Energy (*Firmus Energy (Distribution) Limited v NIAUR* [2017]) under The Gas (Northern Ireland) Order 1996	26 June 2017	**NOA1/23**
24.	SONI Final Determination Report – Appeal by SONI Limited (*SONI Limited v NIAUR* [2017]) under The Electricity (Northern Ireland) Order 1992	10 November 2017	**NOA1/24**
25.	Errata List for the RIIO-2 Final Determinations	3 February 2021	**NOA1/25**
26.	NGG Special Conditions (Clean)	3 February 2021 (to take effect on 1 April 2021)	**NOA1/26**
27.	Gas Standard Special Conditions A26 and A40	N/A	**NOA1/27**
28.	GT2 Price Control Financial Model (**PCFM**)	3 February 2021 (to take effect on 1 April 2021)	**NOA1/28**
29.	GT2 Price Control Financial Handbook (**PCFH**)	3 February 2021 (to take effect on 1 April 2021)	**NOA1/29**
30.	Gas Act 1986 c. 44 (relevant extracts only)	N/A	**NOA1/30**
31.	Secretary of State draft social and environmental guidance to GEMA	February 2004	**NOA1/31**
32.	Secretary of State draft social and environmental guidance to GEMA	June 2011	**NOA1/32**
33.	Parliamentary debate leading to the amendment of the GA86 which introduced the obligation in section 4AA(5A)	March 2004	**NOA1/33**
34.	Better Regulation Task Force, Principles of Good Regulation	2003	**NOA1/34**
35.	Competition Commission, 'BAA Ltd: A report on the economic regulation of the London airports companies (Heathrow Airport Ltd and Gatwick Airport Ltd)' – presented to the Civil Aviation Authority	28 September 2007	**NOA1/35**
36.	Energy Licence Modification Appeals: Competition and Markets Authority Rules (CMA70) (**CMA Rules**)	October 2017	**NOA1/36**
37.	Energy Licence Modification Appeals: Competition and Markets Authority Guide (CMA71)) (**CMA Guide**)	October 2017	**NOA1/37**

No.	Document	Date	Exhibit Reference
38.	GEMA letter to CMA in respect of PR19 Redetermination	29 October 2020	**NOA1/38**
39.	Section 5A Utilities Act 2000	N/A	**NOA1/39**

1.16 A chronology of the key steps GEMA took in setting the price control is provided in section 5.

1.17 A glossary of terms used in this NOA is provided in section 6. Where possible this uses definitions from the RIIO-T2 Decision. In particular, the Appellant uses the following standard abbreviations:

a) Sector Specific Methodology Consultation (**SSMC**)

b) Sector Specific Methodology Decision (**SSMD**)

c) Draft Determinations (**DD**); and

d) Final Determinations (**FD**)

1.18 The Appellant has endeavoured to provide all of the facts, reasons, documentary evidence and witness statements in support of its appeal within this NOA.

1.19 It may also be necessary for the Appellant to submit further material during the course of the appeal, in particular to take into account the CMA's Final Report in the PR19 Redeterminations[7] and following receipt of GEMA's response and any disclosure.

F. Request for appeals to be heard together

1.20 National Grid Electricity Transmission plc (**NGET**) has also requested permission from the CMA to appeal GEMA's decision to modify the conditions of its licence to give effect to the RIIO-T2 price control determination.

1.21 Schedule 4A, paragraph 1(11)(c) GA86 provides that the CMA's grant of permission may be made subject to conditions requiring that the appeal should be considered together with other appeals, including appeals relating to different matters or decisions and appeals brought by different persons.

1.22 NGET's grounds of appeal are the same as for the Appellant. Witness Statement evidence for each appeal is provided by representatives from National Grid plc each of whom are directors of, or have responsibilities for, both the NGG and NGET businesses. Moreover, the Expert Witness evidence provided in support of each appeal is the same for each business.[8]

1.23 Accordingly, in the event that the CMA grants the Appellant permission to appeal and also grants permission to appeal to NGET, the Appellant requests that those appeals be heard together. The Appellant considers that hearing the appeals together is consistent with meeting the CMA's overriding objective because the appeals are so closely related.

G. Contact details

1.24 Appellant:

National Grid Gas plc[9]

[7] https://www.gov.uk/cma-cases/ofwat-price-determinations

[8] The Appellant has separately provided a consolidated index showing the overlap between the documents provided by each of NGET and NGG.

[9] A company registered in England and Wales with registration number 02006000.

1.25 Appellant's address:

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SECTION 2: LEGAL FRAMEWORK

A. Overview

2.1 In this section, the Appellant describes the legal framework governing this appeal in four parts:

a) the statutory grounds of appeal;

b) GEMA's principal objective and statutory duties;

c) the standard of review to be applied by the CMA; and

d) the CMA's powers when allowing an appeal.

B. Statutory grounds of appeal

2.2 Under section 23D(4) GA86, having granted permission, the CMA may allow an appeal only to the extent it is satisfied that the decision appealed against was 'wrong' on one or more of the following grounds:

a) that GEMA failed properly to have regard to any matter to which it must have regard in carrying out its principal objective and its duties (section 23D(4)(a) GA86);

b) that GEMA failed to give the appropriate weight to any of those matters (section 23D(4)(b) GA86);

c) that the decision was based, wholly or partly, on an error of fact (section 23D(4)(c) GA86);

d) that the modifications fail to achieve, in whole or in part, the effect stated by GEMA by virtue of section 23(7)(b) GA86 (section 23D(4)(d) GA86);

e) that the decision was wrong in law (section 23D(4)(e) GA86).

2.3 By virtue of section 23D(2) GA86, in determining appeals, the CMA must have regard, to the same extent as is required of GEMA, to the matters to which GEMA must have regard: (a) in the furthering of its principal objective under section 4AA GA86; (b) in the performance of its duties under section 4AA GA86; and (c) in the performance of its duties under sections 4AB and 4A GA86. GEMA's principal objective and statutory duties are explained in section C below.

2.4 Under section 23D(3) GA86, in determining the appeal, the CMA (a) may have regard to any matter to which GEMA was not able to have regard in relation to the decision, but (b) must not, in the exercise of that power, have regard to any matter to which GEMA would not have been entitled to have regard to in reaching the decision had it had the opportunity of doing so.

2.5 The CMA has made rules of procedure regulating the conduct and disposal of appeals (Energy Licence Modification Appeals: Competition and Markets Authority Rules (CMA70) dated October 2017) (**CMA Rules**) and issued an accompanying guide (Energy Licence Modification Appeals: Competition and Markets Authority Guide (CMA71) dated October 2017) (**CMA Guide**).

2.6 In addition to identifying its grounds of appeal based on the prescribed statutory grounds, the CMA requires appellants to identify the relief sought.[10] The CMA's consistent practice indicates that these two requirements are conceptually distinct. In other words, consideration of the appropriate relief comes after the CMA's conclusion on whether the appellant has established that GEMA's decision was wrong. The fact that parties involved in an appeal process may take a different view of the appropriate relief will not prevent the CMA finding that GEMA's decision

[10] CMA Rules, 5.2(c) [**NOA1/36**].

was wrong. Where the CMA finds GEMA's decision was wrong, the CMA will proceed to determine the appropriate relief having regard to all relevant factors.

C. GEMA's principal objective and statutory duties

2.7 Section 4AA(1) GA86 provides that the **principal objective** of GEMA in carrying out its functions is to protect the interests of existing and future consumers in relation to gas conveyed through pipes. Section 4AA(1A) GA86 goes on to explain that this means their interests taken as a whole, including: (a) their interests in the reduction of gas-supply emissions of targeted greenhouse gases; and (b) their interests in the security of the supply of gas to them.

2.8 Section 4AA GA86 then sets out a series of specific duties with which GEMA must comply in relation to its principal objective, as well as a series of considerations to which it must (or, in some cases, may) have regard in performing those duties. These are as follows:

a) First, section 4AA(1B) GA86 provides that GEMA is required to **carry out its functions in the manner which it considers is best calculated to further the principal objective, wherever appropriate by promoting effective competition** between persons engaged in, or in commercial activities connected with, the shipping, transportation or supply of gas conveyed through pipes.

b) Second, section 4AA(1C) GA86 provides that, before deciding to carry out functions in a particular manner with a view to promoting competition, GEMA must consider: (i) to what extent the interests of consumers would be protected by that manner of carrying out those functions; and (ii) whether there is **any other manner (whether or not it would promote competition)** in which GEMA could carry out those functions which would better protect those interests.

c) Third, section 4AA(2) GA86 provides that, in performing the duties described above, GEMA must have regard to:

   (i) 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**;

   (ii) the need to **secure that licence holders are able to finance their licensed activities**; and

   (iii) the need to **contribute to the achievement of sustainable development**.

d) Fourth, section 4AA(3) GA86 provides that in performing the duties described above, GEMA must have regard to the **interests of individuals who are disabled or chronically sick, individuals of pensionable age, individuals with low incomes, and individuals residing in rural areas** (but that is not to be taken as implying that regard may not be had to the interests of other descriptions of consumer).

e) Fifth, section 4AA(4) GA86 provides that GEMA may, in carrying out any function, have regard to the **interests of consumers in relation to gas conveyed through pipes**, and any interests of consumers in relation to **communications services and electronic communications apparatus** or **water or sewerage services**, which are affected by the carrying out of that function.

f) Sixth, section 4AA(5) GA86 provides that, subject to (a) and (c) above and to the duty to carry out functions in a manner best calculated to further delivery of policy outcomes under section 132(2) of the Energy Act 2013, GEMA must carry out its functions in the manner which it considers is best calculated:

   (i) to **promote efficiency and economy** on the part of persons authorised to carry on any activity, and the efficient use of gas conveyed through pipes;

(ii) to **protect the public from dangers arising** from the conveyance of gas through pipes or from the use of gas conveyed through pipes;

(iii) to **secure a diverse and viable long-term energy supply**;

and GEMA must, in carrying out those functions, **have regard to the effect on the environment** of activities connected with the conveyance of gas through pipes.

g) Seventh, section 4AA(5A) GA86 provides that, in carrying out its functions, GEMA 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 it to represent the **best regulatory practice**. We note that the principles identified in section 4AA(5A) GA86 were defined by the Better Regulation Task Force as follows:[11]

(i) **Transparent**: Regulators should be open, and keep regulations simple and user-friendly.

(ii) **Accountable**: Regulators must be able to justify decisions, and be subject to public scrutiny.

(iii) **Proportionate**: Regulators should only intervene when necessary. Remedies should be appropriate to the risk posed, and costs identified and minimised.

(iv) **Consistent**: Government rules and standards must be joined up and implemented fairly. This includes the principle that regulation should be predictable in order to give stability and certainty to those being regulated.

(v) **Targeted**: Regulation should be focused on the problem, and minimise side effects.[12]

2.9 Section 4AB GA86 provides that GEMA must, in carrying out its functions, have regard to any **guidance on social and environmental matters** issued by the Secretary of State under section 4AB(1) GA86. Such guidance has been issued[13] but is intended to be replaced by a strategy and policy statement (**SPS**) designated by the Secretary of State under section 131 of the Energy Act 2013[14]. However, as no SPS has yet been designated, the guidance on social and environmental matters remains in place.

D. Standard of review to be applied by the CMA

2.10 The Appellant considers that, having regard to previous energy licence modification appeals before the CMA[15], the CMA's approach to the standard of review can be summarised as follows:

a) The CMA is not limited to reviewing the decision under appeal on conventional judicial review grounds. The standard of review goes further than this. The key question for it to

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11 The parliamentary debates leading to the amendment of the GA86 which introduced the obligation in section 4AA(5A) explicitly references the work of the Better Regulation Task Force in developing the principles. See HL Deb 4 March 2004, vol 658, col GC203 (available online at: https://publications.parliament.uk/pa/ld200304/ldhansrd/vo040302/text/40302-14.htm) [**NOA1/33**].

12 Better Regulation Task Force, Principles of Good Regulation (2003) [**NOA1/34**].

13 The Secretary of State issued draft social and environmental guidance to GEMA in 2001, and updated and published this guidance in February 2004 [**NOA1/31**]. In June 2011, the Secretary of State issued a further draft [**NOA1/32**].

14 The Government consulted on a draft Strategy and Policy Statement (SPS) in 2014, and published responses to the consultation in March 2015 (https://www.gov.uk/government/consultations/strategy-and-policy-statement). However, no SPS has yet been designated.

15 Namely, those brought under section 11C of the Electricity Act 1989 by British Gas Trading (*BGT v GEMA* [2015]) and Northern Powergrid (*NPg v GEMA* [2015]) in respect of GEMA's RIIO-1 electricity distribution price control (together, the **RIIO-ED1 appeals**), and the subsequent appeals by Firmus Energy (*Firmus Energy (Distribution) Limited v NIAUR* [2017]) and SONI Limited (*SONI Limited v NIAUR* [2017]) under The Gas (Northern Ireland) Order 1996 and The Electricity (Northern Ireland) Order 1992 respectively, which have analogous statutory appeal provisions.

determine is whether the decision was wrong on one or more of the prescribed statutory grounds and, in order to do that, the merits of GEMA's decision must be taken into account.

b) In relation to GEMA's exercise of discretion, it is not the CMA's role to substitute its judgment simply on the basis that it would have taken a different view of the matter. The statutory test clearly admits of circumstances in which the CMA might reach a different view from GEMA, but in which it cannot be said that GEMA's decision was wrong on one of the statutory grounds.

c) The CMA must determine whether a finding of fact or inference is wrong where that is in issue. The CMA will assess evaluations of fact by GEMA in the same way as the exercise of discretion (i.e. not substituting its judgment for that of GEMA simply on the basis that it would have taken a different view, but only if it is satisfied that the conclusion lies outside the bounds within which reasonable disagreement is possible).

d) The CMA, in assessing errors of law, will evaluate whether GEMA has misdirected itself on its legal obligations in making its decision. For example, whether GEMA has failed to take proper account of relevant considerations, acted in defiance of logic, failed properly to inquire, acted disproportionately or in a discriminatory manner with no good reason, reached conclusions without adequate supporting evidence, placed reliance on evidence or assumptions which are flawed and/or made methodological errors.

e) Also in assessing errors of law, the CMA will consider whether GEMA has made any procedural errors (in line with the judicial review ground of procedural unfairness). For example, whether GEMA has conducted the consultation prior to the decision with an open mind and taken account of representations by interested parties.

f) The CMA will review GEMA's decision through the prism of the specific errors that are raised. Where no errors are pleaded, the decision to that extent will not be the subject of specific review. Where there are relevant interlinkages, the CMA would, in the first instance, expect GEMA to highlight and address them. Interlinkages will be decided on a case-by-case basis taking into account the circumstances of each case.

g) Whether an error is material must be decided on a case-by-case basis taking into account the particular circumstances of each case. Relevant factors would include the impact of the error on the overall price control, whether the cost of addressing the error would be disproportionate to the value of the error, whether the error is likely to have an effect on future price controls, and whether the error relates to a matter of economic or regulatory principle. This is not an exhaustive list.

2.11 Taking into account the above, and having regard to the CMA's overriding objective, the Appellant has limited its appeal to areas where the RIIO-T2 Decision was wrong and the errors are material.

E. The CMA's powers when allowing an appeal

2.12 By virtue of section 23E(2) GA86, if the CMA allows an appeal in relation to a price control decision within the meaning of sections 23E(7) and (8) GA86, it must do one or more of the following:

a) quash the decision (to the extent that the appeal is allowed);

b) remit the matter back to GEMA for reconsideration and determination in accordance with any directions given by the CMA;

c) substitute the CMA's decision for that of GEMA (to the extent that the appeal is allowed) and give any directions to GEMA or any other party to the appeal.

2.13 Section 23E(4) GA86 provides that a direction given by the CMA must not require a person to do anything that the person would not have power to do (apart from the direction), and section 23E(5) GA86 provides that a person to whom a direction is given must comply with it.

SECTION 3: GROUND 1 – COST OF EQUITY

A. Overview

3.1 Ground 1 concerns GEMA's decision to set the cost of equity (**COE**) for RIIO-T2 at 4.55%.[16] This is significantly below any reasonable measure of the sufficient equity return when proper account is taken of all of the available evidence and proper regard is had to the harm of setting the COE too low. For these reasons, further described in this section, GEMA's decision to set the COE at this level was wrong.

3.2 GEMA's estimation of the COE involved a three-step process. In Step 1, GEMA applied the Capital Asset Pricing Model (**CAPM**) to estimate the COE from individual parameters (the risk-free rate (**RFR**), the equity beta and the total market return (**TMR**)). In Step 2, GEMA applied certain cross-checks to its Step 1 range and used these to reduce the CAPM range. In Step 3, GEMA decided not to aim up when selecting a point estimate within its COE range[17]. Further details about GEMA's three-step process are provided in sections B - D.

3.3 The Appellant accepts that the process of estimating the COE is not an exact science and inevitably requires the regulator to choose between certain factors in determining its methodology and to form judgements based on the available evidence. However, the decision to set a point estimate for the COE must be well-justified, free from material errors, reasonable in the circumstances and consistent with the regulator's statutory duties. In setting the COE for RIIO-T2, GEMA has made erroneous methodological choices – and not given due consideration to evidence which would support higher allowed returns – and has made unbalanced judgements, leading it to set a materially lower COE than is justified on a proper account of all of the relevant evidence. The errors made at each step are described in sections B-D, as follows:

a) the CAPM Selectivity error – which concerns GEMA's failure at Step 1 to take proper account of relevant evidence when estimating the RFR, equity beta and TMR, and to have been unjustifiably selective in its interpretation and presentation of evidence (section B);

b) the Cross-Checks error – which concerns GEMA's failure at Step 2 to apply relevant cross-checks and instead applying a set of flawed and ultimately weak cross-checks which do not validate its conclusions (section C); and

c) the Aiming Up error – GEMA's failure at Step 3 to 'aim up' when setting a point estimate for the COE which was unjustified and harmful (section D).

3.4 As a result of these errors, GEMA has set the COE at an unreasonably low – and therefore insufficient – level which fails to reflect investor expectations and the risks of the sector – the **Insufficient COE Error** (section E).

3.5 Setting an insufficient COE has wide implications, and is not just a shareholder concern. GEMA's decision will have significant consequences for consumers because of its effects on short and long-term investability of the sector. Where allowed equity returns are too low, it will be more challenging to secure the necessary investment and it will also create uncertainty driving up the future cost of equity. The failure to provide a sufficient COE for RIIO-T2 will also have a more direct effect on the ability to meet the requirements of UK energy policy, by reducing the pace and scale of investment at a time when the UK needs to transition to Net Zero.

3.6 GEMA's decision was therefore wrong within the meaning of section 23D(4) GA86, (see further section F and Annex 1), because:

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[16] This is the CAPM implied COE determined by GEMA, following application of its cross-checks, at a 60% notional gearing, CPIH-real. This will adjust in the period due to GEMA introducing risk free rate indexation but for simplicity, and mimicking GEMA's approach in the FD, we focus on the underlying 4.55% figure throughout the appeal documentation. See FD, Finance Annex, page 24 [**NOA1/12**].

[17] GEMA also decided to deduct the outperformance wedge. This decision is also wrong for the reasons explained in Ground 2.

a) GEMA failed properly to have regard and/or to give the appropriate weight to its principal objective and its statutory duties because setting an insufficient COE: has effects on short and long-term investability of the sector with significant consequences for existing and future consumers, does not have proper regard and/or give the appropriate weight to securing that licence holders are able to finance their licensed activities, contributing to the achievement of sustainable development, promoting efficiency and economy and securing a diverse and viable long-term energy supply, and does not have proper regard and/or give the appropriate weight to the effect on the environment or the principles of best regulatory practice (section 23D(4)(a) GA86 and section 23D(4)(b) GA86);

b) the decision was based, wholly or partly, on errors of fact because GEMA has relied on flawed assumptions, assertions, interpretations and evidence (section 23D(4)(c) GA86);

c) the licence modifications fail to achieve, in whole or in part, the effect stated by GEMA because the insufficient COE does not give effect to the "long-horizon approach" to setting the cost of capital that GEMA sought to achieve and does not "ensure that the notional licensee will have sufficient, but not excessive [sic] revenues to finance its activities". (section 23D(4)(d) GA86); and

d) the decision was wrong in law because GEMA failed to take proper account of relevant evidence, relied on flawed evidence and assumptions, failed properly to inquire, reached conclusions without adequate supporting evidence, made methodological errors, acted in defiance of logic, and was procedurally unfair (section 23D(4)(e) GA86).

3.7 The Appellant therefore requests that the CMA quash GEMA's decision and substitute its own decision to correct the Insufficient COE Error by setting the COE for RIIO-T2 at a higher level, as explained in section G.

3.8 The key evidence that the Appellant requests the CMA reads when considering this ground are:

a) NS1, in which Nicola Shaw further explains the reasons why the Appellant is appealing GEMA's decision to set the COE for RIIO-T2 at 4.55%;

b) DP1, in which Darren Pettifer describes GEMA's price control process, the evidence that was put to GEMA during the process, the reasons why GEMA's decision to set the COE at 4.55% was wrong, and the steps required to correct this decision in the Licence; and

c) the Cost of Equity Report from Frontier Economics, which details the errors GEMA has made and sets out the basis for the Appellant's position that the COE should be set higher.

B. CAPM Selectivity error

3.9 In this section the Appellant describes the errors made by GEMA in Step 1 of its process for setting the COE, namely estimating the different parameters that underpin the CAPM (RFR, equity beta and TMR). The Appellant refers collectively to these errors as the CAPM Selectivity error. The CAPM Selectivity error means that the decisions taken by GEMA at Step 1 were wrong.

3.10 The Appellant submits that GEMA's assessment of the CAPM parameters contains numerous errors of methodology, reveals a failure properly to consider relevant factors, and relies on conclusions which are not adequately supported by evidence. GEMA has also failed to form balanced and well-reasoned judgements and to act in accordance with its statutory duties, including the duty to have regard to the principles of best regulatory practice. This is the case both in its assessment of the individual parameters (for the reasons given below) and in its overall estimation of the CAPM.

3.11 It is clear that when setting the COE for RIIO-T2 and selecting a range for each of the CAPM parameters, GEMA has selected and relied upon evidence which informed the lower end of the range and not given due consideration to evidence which would have supported a higher end of the range. This then meant that its choice of point estimate within that range was inherently biased because it was skewed downwards, with the overall effect being that the CAPM-implied

COE that GEMA reached at Step 1 was much lower than is justifiable and therefore wrong. This approach was a significant contributing factor to the **Insufficient COE Error** for the reasons set out in section E.

3.12 The legal consequences arising from the CAPM Selectivity error are summarised in section F and more particularly described in Annex 1.

3.13 The Appellant identifies the relief sought in section G.

Risk Free Rate

3.14 This section is in two parts: first, the Appellant sets out the background to GEMA's decision in setting the RFR and second, the Appellant describes the errors in GEMA's assessment.

3.15 In summary, GEMA has failed to undertake a robust assessment of the RFR that takes proper account of the evidence presented to it. GEMA unreasonably adopted an approach that excluded evidence which justified a higher RFR on the basis its approach was supposedly "*simpler, more principled, and supported by greater precedent*". However, this explanation was not properly supported and did not justify the exclusion of relevant evidence. GEMA also relied on flawed cross-checks. For these reasons, GEMA's decision on the RFR was wrong.

3.16 Specifically, GEMA's estimation of the RFR was wrong for the following reasons:

a) it failed to take account of the shortcomings of index-linked gilts as a proxy for the RFR;

b) it was wrong not to take account of AAA-rated corporate bonds as a proxy for the RFR;

c) the nominal gilt cross-check is not robust and has been misapplied;

d) it used SONIA swap rates that are not a suitable cross-check for the RFR; and

e) the problems with GEMA's proxy cannot be corrected by RFR indexation.

3.17 These errors are material as they result in an estimated RFR that is too low and, consequently, results in a cost of equity that is too low (see section E - **Insufficient COE Error**). They are also material because it is contrary to well-established regulatory and economic principles to estimate CAPM parameters based on unjustifiably selective evidence and therefore sets a harmful precedent for future price controls.

3.18 The Appellant requests that the CMA also reads section 3 of the Cost of Equity Report and section E of DP1 when considering this error.

(1) Background to GEMA's decision

3.19 In the Framework Consultation GEMA proposed to estimate the RFR by solely using spot yields on long-dated index-linked gilts (**ILGs**) as a proxy. GEMA proposed adopting the methodology outlined in the UKRN Report, with ranges developed by CEPA[18] and a recommendation in the UKRN Report.[19] At the time of the Framework Consultation, GEMA and CEPA estimated the RFR range using spot rates on 10 year ILGs. In DP1, Darren Pettifer explains the Appellant's concern that GEMA was failing to take proper account of all relevant evidence by relying solely on ILGs.

3.20 In the Framework Decision, GEMA acknowledged the difficulties in estimating the RFR, noting "*any forecast of risk-free rates has the potential to be wrong*".[20] GEMA sought to reassure stakeholders that it would review "*all available evidence, including the material received in the*

[18] Framework Consultation, page 85, paragraph 7.35 [**NOA1/2**].
[19] Framework Decision, page 56, paragraph 6.44 [**NOA1/3**].
[20] Framework Decision, page 56, paragraph 6.46 [**NOA1/3**].

consultation responses".[21] Darren Pettifer summarises the subsequent interactions with GEMA, both bilaterally and through the Energy Networks Association (**ENA**) in DP1.[22]

3.21 In the SSMC, GEMA proposed determining the RFR by using 20 year RPI-linked ILGs, rather than 10 year ILGs. This was because GEMA viewed the 20 year gilts as more stable than the five or 10 year gilts.[23] Longer-term gilts were also considered to be more appropriate due to the long-term nature of equity investment and the duration of the RAV depreciation horizon.[24] GEMA also proposed using the Office for Budget Responsibility (**OBR**) forecasts for the difference between RPI and CPI to determine a derived 20-year CPIH bond (on the assumption that RPI to CPI adjustments were equivalent to RPI to CPIH adjustments).[25] Finally, GEMA proposed an equity indexation approach to take account of adjustments to the RFR during the RIIO-2 price control period rather than estimating future rates ex ante.[26]

3.22 GEMA confirmed this approach in the SSMD, despite stakeholders raising a number of objections about distortions in the data set and concern that insufficient thought had been given to alternative approaches, including the use of nominal gilts.[27] GEMA estimated the RFR using the Bank of England March 2019 RPI spot rate for ILGs with a 20 year tenor.[28]

3.23 GEMA then maintained this approach in the DD and FD, using the spot rate from May 2020 and October 2020 respectively.

3.24 In the FD, GEMA estimated the forecast RFR averaged over the RIIO-2 period would be -1.58%.[29] In line with the approach set out in the SSMD, GEMA based its decision solely on observable ILGs, adjusted to a CPIH-real basis, using an averaging period of one month. GEMA estimated the spot RFR to be -1.74% (CPIH real) and increased it by 0.16% to reflect the forward curve uplift.[30]

3.25 In response to stakeholder submissions, GEMA noted that it had considered using alternative proxies for the RFR, such as AAA-rated corporate bonds and adjusted nominal gilts. However, GEMA dismissed the use of nominal gilts as a proxy for the RFR on the basis that greater discretion would be required in adjusting nominal gilts. In relation to AAA-rated corporate bonds, GEMA recognised that these bonds are low risk. However, it dismissed the use of AAA-rated corporate bonds on the basis that academic theory and suggested practice supported the use of ILGs.[31]

3.26 GEMA concluded that relying solely on ILGs is "*simpler, more principled, and supported by greater precedent*".[32] Additionally, GEMA noted that the CMA found in the PR19 PFs[33] that, "ILGs closely but imperfectly match the key requirements of the RFR within the CAPM model".[34] GEMA concluded from this that its use of ILGs "is not necessarily wrong".[35]

3.27 GEMA also identified two cross-checks, which it considered supported its reliance solely on ILGs. First, GEMA considered 20 year SONIA swaps, which had a yield of -1.65% (CPIH real). GEMA noted that SONIA is the Bank of England's preferred measure of RFR, and a 20 year swap rate would provide a maturity equivalent rate to those being considered by the CMA in the PR19 Redeterminations.[36]

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21 Framework Decision, page 57, paragraph 6.47 [**NOA1/3**].
22 DP1, paragraphs 54-63.
23 SSMC, Finance Annex, page 18, paragraph 3.32 [**NOA1/5**].
24 SSMC, Finance Annex, page 18, paragraph 3.33 [**NOA1/5**].
25 SSMC, Finance Annex, page 22, paragraph 3.47 [**NOA1/5**]
26 SSMC, Finance Annex, page 18, paragraph 3.30 [**NOA1/5**].
27 See Section E of DP1 for further details.
28 DP1, Section E; Cost of Equity Report, Section 4 [**MH1/1**].
29 FD, Finance Annex, Table 7 on page 26 [**NOA1/12**].
30 FD, Finance Annex, Table 11 on page 49 [**NOA1/12**].
31 FD, Finance Annex, page 28, paragraph 3.13 [**NOA1/12**].
32 FD, Finance Annex, page 31, paragraph 3.23 [**NOA1/12**].
33 CMA Provisional Findings (29 September 2020), PR19 Redeterminations [**NOA1/17**].
34 FD, Finance Annex, page 27, paragraph 3.9 [**NOA1/12**].
35 FD, Finance Annex, page 27, paragraph 3.10 [**NOA1/12**].
36 FD, Finance Annex, page 29, paragraph 3.17 [**NOA1/12**].

3.28 Second, GEMA deflated the nominal yield on 20 year nominal gilts to conclude that they had a yield of -1.20% (CPIH real). GEMA noted that the yield for nominal gilts was around 50 bps higher than the yield for its preferred comparator, ILGs. It considered that this difference is "*partly explained*" by the embedded inflation risk premium.[37]

3.29 GEMA will update its RFR assumption annually during the price control period, via the annual iteration process (**AIP**),[38] by re-running the same calculation using more recent ILG, forward curve, RPI and CPI data. GEMA considered that this would result in an RFR that is "*more responsive to market conditions*".[39] The indexation of the RFR introduces a new regulatory mechanism for the RIIO-2 period. As explained by Darren Pettifer in DP1, much of GEMA's consultation on the appropriate RFR for the RIIO-2 period is focussed on the development of this indexation basis, and not on the most appropriate proxy for the RFR. This is evident by the consistency of the source of data relied upon by GEMA in estimating the RFR during the price control process, as per Figure 1.

Figure 1: RFR ranges and sources put forward by GEMA over the course of the RIIO-T2 consultation process leading up to the FD.

Document	*RFR proposal*	*Source*
Framework Consultation	*-1.75% (RPI spot rate) to -0.60% (RPI spot rate plus forward curve)*	*Spot rate on 10 year ILGs on 29 September 2017, and 10 year forecast ILG spot rate over the ED-2 price control period*
Framework Decision	*[Range not given]*	
SSMC – Finance Annex	*-0.69% (CPIH real) [RPI spot rate: -1.68%]*	*Spot rate on 20 year ILGs on 26 October 2018*
SSMD – Finance Annex	*-0.75% (CPIH real)*	*Spot rate on 20 year ILGs on 29 March 2019 adjusted for assumed value of RPI-CPI and forward curve*
DD – Finance Annex	*-1.48% (CPIH real)*	*Spot rate on 20 year ILGs in May 2020 adjusted for assumed value of RPI-CPI and forward curve*
FD – Finance Annex, Revised	*-1.58% (CPIH real)*	*Spot rate on 20 year ILGs in October 2020 adjusted for assumed value of RPI-CPI and forward curve*

(2) Errors in estimating the RFR

3.30 The reasons why GEMA's estimation of the RFR was wrong are set out in (a) – (e) below.

(a) GEMA failed to take proper account of the shortcomings of ILGs as a proxy for the RFR

3.31 In the FD, GEMA relies on ILG yields when determining the RFR. However, GEMA erred by not taking account of evidence that ILGs are not a perfect proxy for the RFR and that the RFR is higher than the spot yield on ILGs.

[37] FD, Finance Annex, page 30, paragraph 3.19 [**NOA1/12**].
[38] The AIP is the process carried out by the Appellant and GEMA in each of the first four years of the price control to calculate an updated value for the Appellant's allowed revenue in the following year.
[39] FD, Finance Annex, page 27, paragraph 3.8 [**NOA1/12**].

3.32 From the outset of the RIIO-2 process, the Appellant (and other stakeholders) emphasised to GEMA that it was not appropriate to rely on ILGs as a sole proxy for the RFR, stating that whilst it is reasonable to consider ILGs as a proxy for the RFR, this should be "*part of the suite of evidence to inform the RFR*".[40]

3.33 The flaws in GEMA's decision to rely solely on ILGs are set out below.

3.34 First, GEMA was wrong to assume that ILG yields reflect the RFR for investors. The CAPM assumes that investors can borrow at the RFR. However, as explained in the Cost of Equity Report, non-government investors cannot access debt at the spot rate of ILGs, regardless of their credit rating. Therefore, the spot yields on ILGs must be adjusted to take account of the convenience yield attributable to ILGs and the gap between corporate and sovereign risk-free financing rates.[41]

3.35 The 'convenience' premium attached to ILGs reduces government yields relative to the RFR. The Cost of Equity Report explains the sources of the 'convenience yield', including:[42]

a) that the Bank of England and the European Central Bank (ECB) use ILGs as the primary instrument for open market purchases as part of the quantitative easing programme;

b) financial institutions are required to hold these assets for policy reasons (i.e. due to the way in which they are regulated);

c) collateral requirements faced by banks are significantly lower for Treasury securities compared to other instruments with negligible default risk;

d) ILGs have superior liquidity relative to other instruments which have similarly negligible default risk; and

e) ILGs can be used as collateral to raise finance.

3.36 As set out in DP1, the Appellant (in its capacity as a member of the ENA) instructed Oxera to consider the materiality of the underestimation of the RFR. Oxera identified that the impact of the convenience yield alone is significant and likely to range from 30 bps to 90 bps.[43]

3.37 Additionally, when estimating the RFR from ILGs, the ILG yields must be adjusted to take account of the gap between the corporate and sovereign risk-free financing rates. GEMA's approach to CAPM assumes that all investors can borrow at the same RFR. However, in practice, even non-sovereign investors with the highest credit-worthiness face higher borrowing costs than sovereigns with high credit ratings. The CMA acknowledged this in the PR19 PFs, where it concluded that "*the government can borrow at rates significantly lower than would be accessible by even the highest-rated private investor*".[44]

3.38 Oxera's report for the ENA considered the uplift that must be applied to ILGs when estimating the RFR. The report quantified the convenience yield, the spread between spot yields on ILGs and bonds with low default risk, and the difference between spot yields on 10 year ILGs and RFRs assumed by sell-side analysts. Taking account of these factors, the Oxera report demonstrates that UK government bonds are not zero-beta assets and that the true lower bound for a CAPM RFR is 50 bps to 100 bps higher than government bond yields.[45]

3.39 Second, GEMA's purported reliance on the PR19 PFs to support its approach was misconceived.

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40 NG Response to Framework Consultation, page 35 [**DP1/3**].
41 Cost of Equity Report, Section 3.3 [**MH1/1**].
42 Cost of Equity Report, page 21, paragraph 3.3.2 [**MH1/1**].
43 DP1, paragraph 78(a).
44 PR19 PFs (29 September 2020), page 520, paragraph 9.76 [**NOA1/17**].
45 DP1, paragraph 79.

3.40 In the FD, GEMA quotes the CMA as saying that "*ILGs closely but imperfectly match the key requirements of the RFR within the CAPM model*".[46] However, in concluding that its use of ILGs "*is not necessarily wrong, in the CMA's view*" GEMA fails to acknowledge that in the same paragraph the CMA also said that:

> *…the yield on ILGs is likely to sit below the 'true' estimate of the theoretical RFR, if the RFR is expressed as the yield on a 'zero beta' asset. Given this, we use the 20-year maturity ILG as a lower bound for our estimate of the RFR, but we expect that the returns on low beta assets are likely to be higher than implied by a CAPM model which uses this rate as the RFR.*

3.41 GEMA's characterisation of the CMA's position – which omits this point – was therefore misleading. It is indicative of GEMA's propensity to take a selective approach to evidence towards a downward bias when estimating the CAPM parameters.[47]

3.42 In failing to take account of the key considerations and relying on unadjusted ILGs, GEMA determined an RFR that is unsupported by the evidence and materially below any reasonable assessment of the RFR. This in turn contributes to the overall COE being too low.

3.43 Third, whilst the Appellant supports the principle of the RFR being indexed to reflect future changes to the RFR, GEMA's approach to updating ILG values annually risks locking in one-off, atypical events affecting the yields of ILGs into the RFR.

3.44 GEMA calculates spot ILG yields based on the average yield for the month of October. It will take the same approach to calculating updated spot yields annually. It sets out the process for annual updates to the RFR in the Price Control Financial Handbook.[48]

3.45 All transmission owners indicated that GEMA should consider at least six months of historical data. However, GEMA ultimately opted to use one-month average over October each year, citing "*there is no clear agreement from networks on whether 6-month or 12-month averages is preferred*".[49]

3.46 GEMA justified its use of just one month's data on the basis that "*[t]he difference is typically very small between these approaches*",[50] that it might "*delay any rate rises being reflected in price control allowances*"[51] and that in some circumstances it might "*invalidate our view that the cost of equity is, by definition, an expectation*".[52]

3.47 As further explained in DP1, these are not adequate reasons to dismiss use of a longer average. A 6- to 12-month average to October would be appropriate as this would lead to a less volatile measure of RFR that would reflect a longer run of market data.

(b) It was wrong for GEMA not to take account of AAA-rated corporate bonds as a proxy for the RFR

3.48 The Appellant accepts that the RFR cannot be directly determined from market data and must therefore be inferred from observing proxies. It is noted that all potential proxies for the RFR will have some shortcomings to varying degrees. However, in the FD, GEMA determined the RFR based on a single proxy: 20 year ILGs. Given the availability of other proxies, this decision was unreasonable. GEMA's decision to rely on a single proxy and therefore to exclude evidence relating to AAA-rated corporate bonds, was wrong for the following reasons.

3.49 GEMA's failure to take account of AAA-rated corporate bond yields results in a material underestimation of the RFR and, as a result, the COE. The CMA noted in the PR19 PFs that the

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46 FD, Finance Annex, page 27, paragraph 3.9 [**NOA1/12**], referring to the PR19 PFs (29 September 2020), page 533, paragraph 9.135 [**NOA1/17**].
47 DP1, paragraphs 47-48.
48 GT2 Price Control Financial Handbook section 4 paras 4.17 to 4.30.
49 SSMD, Finance Annex, paragraph 3.32 [**NOA1/7**].
50 DD, Finance Annex, paragraph 3.7 [**NOA1/9**].
51 SSMD, Finance Annex, paragraph 3.34 [**NOA1/7**].
52 SSMD, Finance Annex, paragraph 3.32 [**NOA1/7**].

180-day trailing average yield on ILGs provides a lower limit of -1.40% CPIH-real, whereas the average of the 180-day trailing average yields on the IHS iBoxx Non-Gilt AAA 10+ and 10-15 indices (i.e. the highly-rated non-government/corporate bond yields) provides an upper limit of -0.81%.[53] This demonstrates the significant difference in yields between ILGs and AAA-rated bonds.

3.50 GEMA's decision in the FD not to take account of yields from AAA-rated corporate bonds was flawed for the following reasons.

3.51 First, GEMA's decision to rely on a single proxy - and therefore to exclude AAA-rated corporate bonds – was based on flawed reasons. GEMA explained its decision in the FD on the following basis:[54]

> *Relying on ILGs alone is simpler, more principled, and supported by greater precedent, than other methods or combinations of methods.*

3.52 This is an overly simplistic and unjustified approach to estimating the RFR and a clear methodological error. The exclusion of a relevant proxy on the basis that it is "*simpler*" to rely solely on ILGs is not an adequate justification. Using a combination of proxies to develop an RFR range would not have been unduly burdensome or disproportionate. The assertion that GEMA's approach is "*more principled*" is not further explained by GEMA and therefore cannot be given credence – simplicity by itself does not make a method 'more principled'. GEMA's reliance on "*greater precedent*" is not a sufficient justification. Notably, GEMA fails to acknowledge the CMA's approach in the PR19 PFs, which provide recent precedent for considering AAA-rated corporate bonds to be a relevant proxy for the RFR. The CMA PR19 PFs were published on 29 September 2020 (a full ten weeks before the RIIO-2 FDs were published) and GEMA has been actively engaged in the process as a third party. There was therefore no justification for GEMA failing to take proper account of the CMA's approach.

3.53 GEMA's approach of considering ILGs to be the sole proxy for the RFR, to the exclusion of other evidence, appears to follow on from the UKRN Report as, in the Framework Decision, GEMA stated that it had "*accepted the recommendations from the UKRN study in respect of the estimation of risk-free rates and total market returns"*.[55]

3.54 The Appellant (and other stakeholders) emphasised to GEMA that it was not appropriate to rely on ILGs as a sole proxy for the RFR. GEMA should have taken account of evidence from all relevant proxies, and to have done so in a way that recognised their relative strengths and shortcomings (i.e. by determining the relative weight to be afforded to each proxy and making adjustments to reflect any shortcomings).

3.55 Second, GEMA failed to acknowledge that AAA-rated corporate bonds closely approximate the requirements of an RFR benchmark. As explained in DP1,[56] the Appellant, through the ENA, submitted evidence developed by Oxera[57] to GEMA setting out why AAA-rated corporate bonds were a suitable proxy for the RFR. GEMA acknowledged this evidence in the FD, noting that it had received it as part of the PR19 Redeterminations process and directly in the context of RIIO-2.[58]

3.56 Oxera's paper cited a recommendation from the Stanford professors, Jonathan Berk and Peter DeMarzo, in the context of estimating the RFR that:[59]

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53 Cost of Equity Report, page 26, paragraph 3.6.6 [**MH1/1**].
54 FD, Finance Annex, page 31, paragraph 3.23 [**NOA1/12**].
55 RIIO-2 Framework Decision, page 56, paragraph 6.44 [**NOA1/3**].
56 DP1, paragraph 88 onwards.
57 Oxera, 20 May 2020, Are sovereign yields the risk free rate for the CAPM? [**DP1/6**].
58 FD, Finance Annex, pages 27 to 28, paragraph 3.11 [**NOA1/12**].
59 Oxera, 20 May 2020, Are sovereign yields the risk free rate for the CAPM?, page 13 [**DP1/6**].

> *Most investors, however, must pay a substantially higher rate to borrow funds [than the US Treasury] … As a result, practitioners sometimes use rates from the highest quality corporate bonds in place of Treasury rates.*

3.57 Oxera acknowledged that the RFR is likely to lie somewhere in a range between the ILG-derived RFR and AAA-rated corporate bonds. It proposed that a downward adjustment of 26 bps would be sufficient for these bonds to be used as a reasonable proxy for the RFR.[60]

3.58 In the FD, GEMA noted that Oxera's paper preceded the DD and therefore did not consider the specific approach developed in the DD.[61] This does not justify disregarding the evidence presented by Oxera. GEMA's position in the DD does not explain why AAA-rated corporate bonds should not be used as a proxy for the RFR. There was no rational basis for GEMA to dismiss this evidence, other than inherent downwards bias.

3.59 GEMA's decision not to use AAA-rated corporate bonds as a proxy for the RFR also runs directly counter to the CMA's approach in the PR19 PFs. Here, the CMA found that AAA-rated corporate bonds closely approximate the requirements of an RFR benchmark instrument, "*as they are sufficiently risk-free*" and "*return yields that are closer to the rate that is available to all market participants*", making the yield on AAA-rated corporate bonds a "*suitable upper bound*" for the RFR estimation.[62] As such, the CMA presented a clear view that AAA-rated corporate bond yields form an appropriate proxy for the upper bound on a RFR range.[63] For the reasons explained above, GEMA had ample time to consider the PR19 PFs and reflect the CMA's approach in the FD but refused to do so.

3.60 Third, GEMA's reasons for not using AAA-rated corporate bonds as a proxy for the RFR are flawed. In the FD, GEMA declined to consider them when estimating the RFR on the basis that (i) "*academic theory*" and "*suggested practice*" support the use of ILGs, and (ii) it "*risks introducing errors*".[64] This cursory dismissal of a proxy that the CMA considered to be relevant is inadequate and without merit.

3.61 With regards to point (i) on academic theory and suggested practice: GEMA's reliance on academic theory and suggested practice for not using AAA-rated corporate bonds is not supported in the FD. As set out in the Cost of Equity Report, GEMA's references to academic theory do not provide any justification as to why AAA-rated corporate bonds should not also be used as a proxy for the RFR. GEMA lists four corporate finance textbooks in support of the use of ILGs as a proxy to estimate the RFR. However, these texts do not discuss the potential bias that the UK ILG exhibits, alternatives to mitigate that bias or whether alternative proxies should be used.[65] As such, they do not provide any justification for disregarding AAA-rated corporate bonds and render GEMA's decision on this point irrational.

3.62 In its correspondence with the CMA in respect of its PR19 Redeterminations, GEMA also disputed the relevance of the Brennan CAPM model that the CMA has relied on to inform its PR19 PFs.[66] The Appellant notes that GEMA did not rely on this argument to justify its decision not to use AAA-rated corporate bonds in its FD. As set out in the Cost of Equity Report, arguments relied on by GEMA fail provide a valid reason to not consider AAA-rated corporate bonds

3.63 Similarly, the FD does not explain how regulatory precedent justifies excluding AAA-rated corporate bonds. In fact, the contrary is true. First, regulatory precedent does not support the exclusion of AAA-rated corporate bonds. The CAA sought to exclude AAA-rated corporate bonds in its most recent price determination for NATS and Ofwat sought to do so in PR19. However, both of these determinations were subsequently referred to the CMA for redetermination. Second, even if heavy reliance on ILGs had been supported in the past, that does not address or detract from the concerns raised by the Appellant and the need to also consider other proxies.

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60 Oxera, 4 December 2020, Further analysis of the CMA PR19 Provisional Findings on risk-free rate, page 16 [**DP1/10**].
61 FD, Finance Annex, Appendix 3, page 151 [**NOA1/12**].
62 Cost of Equity Report, page 25, paragraph 3.6.4(c) [**MH1/1**]; PR19 PFs (29 September 2020), page 524, paragraph 9.93 [**NOA1/17**].
63 PR19 PFs (29 September 2020), page 533, paragraph 9.137 [**NOA1/17**].
64 FD, Finance Annex, page 28 and 29, paragraphs 3.13 and 3.16 [**NOA1/12**].
65 Cost of Equity Report, page 29, paragraph 3.7.17 [**MH1/1**].
66 GEMA PR19 PFs Response, 29 October 2020, paragraph 20 [**DP1/11**].

As Frontier Economics explains in the Cost of Equity Report, "*Ofgem has a duty as a regulator to consider and answer directly to the concerns and evidence raised by stakeholders*" but Ofgem does not appear to have done so.[67]

3.64 The narrow approach of only relying on a single proxy is inconsistent with how finance practitioners estimate the RFR and regulatory precedent. For example, during the PR19 Redeterminations, the CMA considered other important points of reference in estimating the RFR, including (but not limited to) AAA-rated corporate bonds, nominal UK government bonds, non-UK government bonds and estimates of the long-run equilibrium rate of interest.[68] This detailed review of the evidence was undertaken within a tight administrative timetable because of the constraints of the statutory regime. In RIIO-2 (where GEMA was not subject to the same pressures) it was incumbent on GEMA to take the time to take proper account of and to weigh up all of the relevant evidence when estimating the RFR. It is evident from the FD that GEMA failed to do so.

3.65 With regards to point (ii) on the risk of introducing errors: GEMA does not set out what errors it considered would be introduced by using AAA-rated corporate bonds as a proxy. GEMA also failed to quantify such errors, consider whether they could be mitigated and consider whether they would outweigh the errors that ensue from failing to use AAA-rated corporate bonds as a proxy for the RFR.

(c) GEMA's nominal gilt cross-check was not robust and has been misapplied

3.66 In its FD, GEMA wrongly concluded that evidence from 20 year nominal gilts supported its decision to rely on ILGs to determine to RFR. GEMA's assessment was therefore flawed.

3.67 GEMA estimated the CPI (real) RFR based on 20 year nominal gilts as -1.20%.[69] This is over 50 bps higher than GEMA's RFR estimate based on ILGs (spot).[70] Nominal gilts cannot be used to support an RFR based on ILGs where there is such a material difference between the nominal gilt spot rates and ILG spot rates. Frontier Economics state in the Cost of Equity Report that they see no reason to believe that the nominal gilt cross-check supports the ILG-derived RFR.[71]

3.68 In the FD, GEMA failed to properly consider why there was this difference between the nominal gilt and ILG rates. Rather, GEMA simply asserted that the difference between ILGs and the -1.20% derived from nominal gilts could be "*partly explained by the embedded inflation risk premium*".[72]

3.69 GEMA provided no analysis to show how a downward adjustment to reflect the embedded inflation risk premium would adequately reconcile these figures. In doing so, GEMA has failed to set out its reasoning for why nominal gilts support the use of ILGs as a proxy for RFR and, moreover, was wrong to conclude that nominal gilts provide such support.

3.70 Further, GEMA failed to recognise that nominal gilts are likely to be subject to some of the same distortions as ILGs.[73]

3.71 GEMA's reliance on the application of this cross-check to support the RFR was therefore unjustified because its conclusions were based on a flawed methodology, which failed to acknowledge the shortcomings of the data.

(d) GEMA incorrectly relied on SONIA swap rates as a cross-check for the RFR

3.72 GEMA's use of SONIA swap rates as an appropriate proxy to the RFR was unjustified and wrong, for the following reasons.

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67 Cost of Equity Report, page 31, paragraphs 3.7.20-3.7.21 [**MH1/1**].
68 Cost of Equity Report, page 25, paragraph 3.6.1 onwards [**MH1/1**].
69 FD, Finance Annex, Table 8, page 30, paragraph 3.19 [**NOA1/12**].
70 FD, Finance Annex, Table 7, page, 26, paragraph 3.6 [**NOA1/12**].
71 Cost of Equity Report, page 23, paragraph 3.4.6 [**MH1/1**].
72 FD, Finance Annex, page 30, paragraph 3.19 [**NOA1/12**].
73 Cost of Equity Report, page 23, paragraph 3.4.4 [**MH1/1**].

3.73 First, the SONIA swap cross-check undertaken by GEMA has limited relevance because swap rates over five years in contract length are known to be unreliable due to the lack of liquidity in that segment of the derivatives market.[74]

3.74 Second, even if the data were reliable the SONIA cross-check would still be of limited relevance. SONIA is an interbank overnight rate at which banks lend to each other and other financial institutions. As such, the SONIA swap rate will largely reflect short-term expectations of money market products, loans and other banking credit products.[75] GEMA identified a '20-year SONIA swap', seemingly to reflect the long-term view taken in regulatory cost of capital estimations. However, as set out in the Cost of Equity Report, there is no guarantee that rates derived from a swap product will be comparable to those from a 20-year riskless bond typically used by regulators in CAPM estimations.[76] SONIA swaps are derivative instruments that involve two counterparties swapping a fixed leg of interest payment (the swap rate) with a floating leg payment (**SONIA**). As such, they have fundamentally different characteristics to fixed-income instruments and it is highly questionable if they can be employed as a proxy for the risk-free rate within CAPM.

3.75 Third, considering derivative instruments in the context of the CAPM is not common practice. Regulators, practitioners and academics typically prefer long-term bond yields a proxy for the RFR.[77] The London Interbank Offered Rate or LIBOR, the predecessor of SONIA, has never been seriously considered a proxy for the risk-free rate by any UK regulators. Therefore, it was wrong for GEMA to introduce a new approach in the FD without consultation. GEMA's approach was contrary to regulatory best practice which requires that regulators act in a manner which is transparent and consistent.

3.76 Fourth, GEMA incorrectly relies on a paper by the Financial Stability Board to support its use of the SONIA swap as a relevant cross check. This single paper mentioned in the FD only refers to interbank rates in CAPM setting in passing and does not refer to the SONIA swap rates specifically. GEMA was wrong to place the weight of evidence it did on this paper.[78]

3.77 Fifth, GEMA incorrectly interprets the Bank of England's preference for SONIA as an interbank overnight rate as supporting the use of a 20-year SONIA swap as a proxy for the RFR. The Bank of England has expressed no such preference; instead it has expressed that it considers the reliability of SONIA swap rates to deteriorate after five years.[79]

3.78 GEMA's reliance on SONIA swap rate as a means to cross-check the RFR was therefore unjustified because its conclusions were based on a flawed methodology, it made erroneous assumptions about the comparability of the yields, and it placed undue weight on the yields.

(e) GEMA was wrong to conclude that RFR indexation would correct the problems with its proxy

3.79 GEMA will mechanistically update its RFR assumption annually during the price control period, via the AIP. The process for performing these updates is set out in the RIIO-GT2 Price Control Handbook.[80] As described in DP1, much of GEMA's consultation on the appropriate RFR for the RIIO-2 period is focussed on the development of this indexation basis.

3.80 The Appellant supports the principle of the RFR being indexed to reflect future changes to the RFR. However, GEMA wrongly suggests that the shortcomings of ILGs as a proxy for the RFR are temporary and that indexing the RFR via the AIP will correct for them. GEMA states that its approach "*reduc[es] uncertainty and the need to 'aim up'*".[81] This is incorrect. Whereas the quantum of the errors arising from using ILGs as a proxy for the RFR may vary slightly over time, the underlying shortcomings will continue to exist and cannot be 'worked' out of the calculations over the course of time.

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74 Cost of Equity Report, page 24, paragraph 3.5.2 [**MH1/1**].
75 Cost of Equity Report, page 24, paragraph 3.5.3(b) [**MH1/1**].
76 Cost of Equity Report, page 24, paragraph 3.5.3(c) **[MH1/1**].
77 Cost of Equity Report, page 24, paragraph 3.5.3(a) [**MH1/1**].
78 Cost of Equity Report, page 24, paragraph 3.5.3(d) [**MH1/1**].
79 Cost of Equity Report, page 24, paragraph 3.5.2 [**MH1/1**].
80 RIIO-GT2 Price Control Handbook [**NOA1/29**].
81 FD, Finance Annex, page 30, paragraph 3.21 [**NOA1/12**].

3.81 GEMA appears to have conflated two important issues

a) first, uncertainty regarding the future RFR; and

b) second, the risk of relying on an imperfect proxy to the RFR.

3.82 Indexation of the RFR should allow changes to the RFR to be reflected in future prices in a way that provides protection to both licensees and customers. However, that does not negate the need for GEMA to identify an appropriate basis on which the RFR should be determined annually. GEMA's failure to consider this results in its decision indexing an incorrect proxy for the RFR.

3.83 The CMA recognised this in its estimation of RFR in the PR19 PFs concluding that a failure to make upward adjustments to market rates "*may have removed an inadvertent mitigation to problems associated with the standard regulatory approach of sole reliance on the potentially imperfect RFR proxy of government bond yields.*" [82]

3.84 Given the CMA's clear view in this area, GEMA should have explored whether its indexation approach would actually address the issues raised by stakeholders. Had it undertaken this analysis, it would have concluded that the issues raised would not be resolved by indexation and that they needed to be addressed.

3.85 It is entirely possible to develop the necessary processes to index a more appropriate basis for determining the RFR.[83]

3.86 In conclusion, GEMA made multiple errors in its estimation of the RFR and its decision was therefore plainly wrong. Given the fact that this parameter is largely unobservable and therefore uncertain, it was incumbent upon GEMA to take proper account of all relevant evidence to inform its decision. For the reasons given in (a) – (e) above, GEMA has failed to do so. GEMA has made erroneous methodological choices – not giving due consideration to evidence which would support a higher RFR – and has made unbalanced judgements when selecting and applying cross-checks to inform its decision.

3.87 GEMA's unjustified selectivity in estimating the RFR is one of a number of factors which has led it to set a materially lower COE than is justified on a proper account of all of the relevant evidence and when balanced judgements are applied (see section E, **Insufficient COE Error**).

Equity beta

3.88 This section is in two parts: first, the Appellant sets out the background to GEMA's decision in setting the equity beta and second, the Appellant describes the errors in GEMA's assessment.

3.89 In summary, GEMA has failed to undertake a robust assessment of the equity beta that correctly balances the evidence underpinning its decision. This is a further example of the unjustifiably selective approach GEMA has adopted in its CAPM estimation.

3.90 Specifically, GEMA's estimation of the equity beta was wrong for the following reasons:

a) GEMA failed to place adequate weight on National Grid's beta as compared to other comparators;

b) GEMA failed to take proper account of quantitative evidence relating to relevant comparators; and

c) GEMA failed to take proper account of qualitative evidence on the relative risk of energy networks and the water sector.

[82] PR19 PFs (29 September 2020), page 523, paragraph 9.87 [**NOA1/17**].
[83] DP1, Annex 1.

3.91 These errors are material as they result in an estimated equity beta that is too low and, consequently, results in a COE that is too low (see section E – **Insufficient COE Error**). They are also material because it is contrary to well-established regulatory and economic principles to estimate CAPM parameters based on unjustifiably selective evidence and therefore sets a harmful precedent for future price controls.

3.92 The Appellant requests that the CMA also reads section 4 of the Cost of Equity Report and section F of DP1 when considering this error.

(1) Background to GEMA's decision

3.93 In the Framework Consultation, GEMA referenced work by its consultants CEPA which suggested that – assuming gearing between 65% and 50% – the equity beta value implied by RIIO-1 (of c.0.9) may be too high for RIIO-2. CEPA's report recommended an indicative range of 0.7 to 0.8 based on beta analysis using Ordinary Least Squares (**OLS**) regression.[84] GEMA also referred to the UKRN report and methods for filtering out some of the 'noise' from daily share price movements to produce more robust estimates of equity betas.[85] GEMA's starting point was that the equity beta for network companies should be lower than the market average:[86]

> *Regardless of the analysis technique to derive equity beta, there are a number of reasons to expect network company (non-diversifiable) risk to be significantly lower than the market-average (where equity beta = 1).*

3.94 In the Framework Decision, GEMA noted that it had received "*multiple consultancy studies*"[87] which commented on its approach to setting the equity beta. The submissions made by the Appellant are described in section F of DP1[88]. GEMA proposed to investigate further issues involved in the estimation of beta based on issues highlighted in the UKRN Report and also to look deeper at the relationship between gearing and beta risk.[89]

3.95 In the SSMC, GEMA noted that it had held bilateral meetings and workshops with stakeholders and shared the outputs of consulting work including submissions by NERA and Oxera. GEMA summarised the arguments raised by network companies[90], which are further described in section F of DP1. A particular concern was that GEMA's relevant proxy sample placed too much weight on water company betas (i.e. United Utilities and Severn Trent). GEMA set out its views on the evidence provided by network companies before concluding:[91]

> *To summarise, we are not at this stage convinced that the arguments from NERA or Oxera materially influence our methodology on estimating equity beta.*

3.96 In the SSMD, GEMA noted that it had revisited its approach to gearing in light of concerns raised by network companies. On the issue concerning the relevant proxy sample GEMA confirmed that it would consider at the DD stage the weight to be attached to each company.[92] GEMA proposed a range of 0.66 – 0.85 for the notional equity beta.[93]

3.97 In the DD, GEMA presented work it had commissioned from CEPA to assess various sources of evidence including analysis submitted by the ENA and its advisors on European energy network comparators and the decomposition of National Grid and SSE's group betas.[94] This informed

84 RIIO-2 Framework Consultation, page 87, paragraph 7.45 [**NOA1/2**].
85 RIIO-2 Framework Consultation, page 88, paragraph 7.46 [**NOA1/2**].
86 RIIO-2 Framework Consultation, page 89, paragraph 7.49 [**NOA1/2**].
87 RIIO-2 Framework Decision, page 55, paragraph 6.37 [**NOA1/3**].
88 DP1, paragraph 138 onwards.
89 RIIO-2 Framework Decision, page 56, paragraph 6.41 [**NOA1/3**].
90 SSMC, Finance Annex, page 32, paragraph 3.93 [**NOA1/5**].
91 SSMC, Finance Annex, page 38, paragraph 3.107 [**NOA1/5**].
92 SSMD, Finance Annex, page 56, paragraph 3.176 [**NOA1/7**].
93 SSMD, Finance Annex, page 58, Table 9 [**NOA1/7**].
94 DD, Finance Annex, page 46, paragraphs 3.48 to 3.53 [**NOA1/9**].

GEMA's judgement that "*pure-play energy networks hold similar systematic risk to pure-play water networks*".[95] GEMA proposed that the notional equity beta range was 0.66 – 0.79.[96]

3.98 In response to the DD, the Appellant submitted a report from Frontier Economics which explained that, by limiting itself to only considering a small subset of data, GEMA had failed properly to take into account all of the available information that should inform a rounded regulatory decision on beta.[97] As a consequence, the Appellant argued that GEMA's proposed beta range was set far too low, in particular the upper end of the proposed range.

3.99 In the FD, GEMA acknowledged that "*licensees generally disagree that energy networks will hold similar systematic risk during RIIO-2 as water networks would hold during PR19.*"[98] GEMA accepted the evidence put forward by the Appellant and others that greater weight should be placed on National Grid's beta:[99]

> *To reflect network company submissions and market evidence, we see merit in placing greater weight on National Grid's (NG) observed beta. Whilst the NG beta may be an imperfect proxy for a pure-play GB energy network, given for example its US operations, it has the benefit of capturing systematic risk levels across all sectors, GD, GT and ET, particularly when we consider larger samples of data. We weighted this against the fundamental similarities with GB water companies, which we maintain are good proxies. By contrast, the only other UK listed energy company, SSE, is more difficult to interpret in pure-play energy network terms.*

3.100 Further details as to the changes in methodology made by GEMA in the FD are contained in section 4.2 of the Cost of Equity Report. Having made these changes, GEMA estimated a range of 0.694 – 0.819 for the re-levered equity beta at 60% notional gearing.[100]

(2) Errors in estimating the equity beta

3.101 The reasons why GEMA's estimation of the equity beta was wrong are set out in (a) – (c) below.

(a) GEMA failed to place adequate weight on National Grid's beta as compared to other comparators

3.102 In the FD, GEMA relied on a peer group of four companies to support its decision on unlevered beta: National Grid, Severn Trent, United Utilities and Pennon. GEMA's decision about how much weight to place on the evidence was wrong for the following reasons.

3.103 First, GEMA has wrongfully placed too much reliance on evidence from the water sector in determining the beta.

3.104 GEMA has not demonstrated in the FD or earlier documents in the RIIO-2 process that there were reasonable grounds to consider the betas of three water companies as suitable proxies of the beta of energy network companies. Three of the four peer group companies used by GEMA operate in the water sector. GEMA stated that there are "*fundamental similarities*"[101] between energy networks and water companies that would make water companies suitable proxies but it failed to substantiate this assertion.

3.105 As set out in DP1, a comparison between energy networks and water companies is not evident in the PR19 Redeterminations. In those redeterminations, neither the CMA nor Ofwat or any referring water companies proposed using National Grid's beta as a proxy for water companies.

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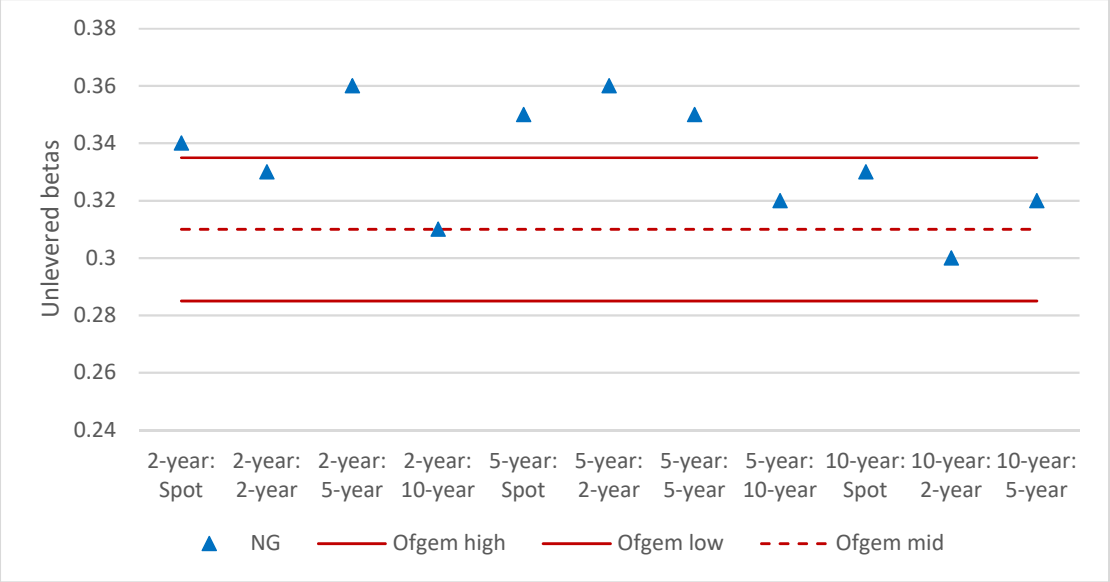
95 DD, Finance Annex, page 48, paragraph 3.54 [**NOA1/9**].
96 DD, Finance Annex, page 48, Table 16 [**NOA1/9**].
97 Frontier Economics, 4 September 2020, Estimating Beta for RIIO-2 A report prepared for National Grid, page 12 onwards [**DP1/22**] and Section F of DP1 for more details.
98 FD, Finance Annex, page 31, paragraph 3.26 [**NOA1/12**].
99 FD, Finance Annex, page 41, paragraph 3.69 [**NOA1/12**].
100 FD, Finance Annex, page 40, Table 9 [**NOA1/12**].
101 FD, Finance Annex, page 42, paragraph 3.69 [**NOA1/12**].

3.106 Figure 2, below, shows a comparison of National Grid's unlevered beta for each of the estimation windows and averaging periods presented by GEMA in the FD as against GEMA's beta range, which is based on the betas of National Grid and the three water companies. It is evident from this figure that National Grid's unlevered beta is typically higher than GEMA's range with five of the eleven points being above the top of GEMA's range.

Figure 2: National Grid's unlevered asset beta for all estimation windows and averaging periods as presented in the FD



3.107 This comparison, which is set out in section F of DP1 shows that National Grid's beta is 11% higher than the average of the three water companies' betas. Moreover, 45% of the 11 observations of National Grid's beta are above GEMA's range and only one is below GEMA's beta point estimate.[102] This shows that the water companies' betas are lower than National Gird's and deriving a beta for energy networks that places too much weight on water companies will lead to a beta range, and point estimate, that is too low.

3.108 Second, as explained in section 4.3 of the Cost of Equity Report, it is unclear how GEMA derived an unlevered beta range of 0.285 to 0.335 and a point estimate of 0.311. GEMA's explanation as to how it has applied its judgement in estimating the equity beta is very limited and so does not support its conclusions.

3.109 GEMA's decision therefore relied on a flawed methodology because of the undue weight placed on water companies' betas. Moreover, it was not adequately justified and lacked transparency which is a requirement of best regulatory practice.

(b) GEMA failed to take proper account of quantitative evidence relating to relevant comparators

3.110 GEMA's decision on unlevered beta in the FD failed to take proper account of quantitative evidence which supports a higher beta point estimate.

3.111 First, GEMA should have taken into account the fact that the observed beta for National Grid understates the beta of National Grid's UK business. This is because evidence shows that US energy company betas are lower than UK equivalents, and therefore once the National Grid beta is decomposed into UK and US constituent parts, the beta for the UK business is likely to be higher than the beta for National Grid overall.

3.112 In the DD Response, the Appellant submitted that GEMA should take account of decomposition analysis of National Grid's observed beta, and provided a supporting report from Frontier

[102] DP1, paragraph 170.

Economics which found a significant likelihood that the beta of National Grid's UK business was above GEMA's DD range.[103]

3.113 However, in the FD GEMA considered Frontier Economics' evidence on decomposition of National Grid's beta was flawed due to a spike in the inferred GB energy networks betas around the COVID-19 outbreak that GEMA incorrectly asserted was only reflected in SSE's beta in the Frontier Economics data. This was not an adequate reason for GEMA not taking account of Frontier Economics' evidence.[104] It is wrong to reject a large body of analysis of different beta estimates over many estimation windows and averaging periods because of the challenges to estimation created by the effect of COVID-19 on capital markets. This is not least because the findings derived regarding National Grid's beta were also supported by further analysis, including analysis prepared by GEMA's own consultant CEPA.

3.114 Similarly, GEMA rejected evidence submitted by NERA on behalf of Scottish Power Transmission (**SPT**) supporting a decompensation analysis on the basis that the risk profile of National Grid's US and UK businesses was *"not stable over time"*.[105] Given the evidence generally shows National Grid's UK beta is higher than the overall National Grid beta estimates over the last ten years, GEMA was wrong not to take this relevant evidence into account.

3.115 Second, GEMA's decision on beta in the FD placed no weight at all on the observed beta for SSE plc, despite this being a relevant comparator for other energy networks. GEMA has not justified why it placed no weight at all on SSE in its beta sample.

3.116 Although SSE's business included elements which may not closely reflect the beta of GB regulated network networks, as the only other UK-listed energy network company it was wrong for GEMA to place no weight at all on this evidence. Taking it properly into account would help offset the downward bias which results from the 75% weighting to water companies in GEMA's FD sample. Alternatively, GEMA could have used a decomposition approach to exclude SSE's non-regulated energy networks businesses, as proposed by Frontier Economics,[106] but GEMA appears to have failed to consider this in the FD. GEMA did not set out its reasons for why it considered SSE not to be an appropriate comparator other than to note that Oxera had not included SSE's beta in a sample of UK energy companies.[107]

3.117 Third, GEMA's FD decision failed to take account of observed betas for European energy comparators, which indicate that GEMA's FD beta point estimate is too low.

3.118 The Frontier Economics report which the Appellant submitted together with its DD Response presented beta evidence for a sample of nine European comparators, which supported a higher beta point estimate than that chosen by GEMA in the FD.[108] GEMA dismissed this evidence on the basis that it was influenced by an outlier. However, that Frontier Economics report makes clear that a weighted average of Frontier Economics' sample supports a higher figure than GEMA's beta point estimate, regardless of this potential outlier.[109] GEMA therefore should have taken account of this relevant evidence.

3.119 Each of these additional sources of quantitative evidence indicate that GEMA's beta point estimate was too low for the UK energy sector. GEMA's decision to place no weight at all on this evidence is an example of its unjustified selectivity, which has led it to fail to reach a balanced judgement informed by relevant evidence.

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103 Frontier Economics, 4 September 2020, Estimating Beta for RIIO-2 A report prepared for National Grid [**DP1/22**].
104 FD, Finance Annex, page 159 [**NOA1/12**].
105 FD, Finance Annex, page 166 [**NOA1/12**].
106 Frontier Economics, 4 September 2020, Estimating Beta for RIIO-2 A report prepared for National Grid [**DP1/22**].
107 FD, Finance Annex, page 160 [**NOA1/12**].
108 Frontier Economics, 4 September 2020, Estimating Beta for RIIO-2 A report prepared for National Grid, section 4 [**DP1/22**].
109 Cost of Equity Report, page 39, paragraph 4.3.11 [**MH1/1**].

(c) GEMA failed to take proper account of qualitative evidence on the relative risk of energy networks and the water sector

3.120 GEMA's consultants, CEPA, recognised in a report prepared for GEMA that:[110]

> *depending on the weight placed on different components of risk we recognise that GB energy networks may be judged riskier than water networks.*

3.121 GEMA has, however, failed to take proper account of the qualitative evidence demonstrating that the energy sector is higher risk than the water sector. As set out in DP1, the key risks that are higher for energy networks than water companies are:[111]

a) investment scale risk as investment activity is inherently risky. There are risks relating to the delivery of investment plans and the success of those plans which mean investors are not assured that expenditure will be profitable. Higher scale investments increase systematic risk and, therefore, beta;

b) construction risk resulting from the nature of capex works, which is different in energy to water. Energy network companies have a greater proportion of spend on large, complex, one-off projects that require the deployment of new and sometimes unproven technologies;

c) capex uncertainty due to the scale of totex that could be delivered through uncertainty mechanisms. These mechanisms provide little or no opportunity for outperformance but do carry the risk that costs incurred will not be approved. This uncertainty means that energy companies must build flexibility into their workforce and operations, in addition to the costs of writing off projects;

d) stranding risks, which result from the rapid technological change in the energy sector, which creates a RAV stranding risk if current technologies become redundant;

e) risk of political intervention, as energy networks are central to the delivery of Government policy to achieve Net Zero;

f) regulatory funding risk, as there is a lack of clear and direct benchmarks for transmission;

g) asset risk due to the higher operability risks faced by energy networks compared to water companies; and

h) other risks, such as greater cyber risks and the development of competition in the delivery of new, high value transmission assets.

3.122 In failing to take proper account of these differences in risk between the water sector and energy networks, GEMA has failed to take proper account of qualitative evidence which should have informed its estimation of the equity beta. This flaw in methodology is further evidence of GEMA's unjustified selectivity, which has led it to fail to reach balanced judgements informed by relevant evidence.

3.123 In conclusion, GEMA made errors in its estimation of the equity beta and its decision was therefore wrong. In estimating the equity beta it was incumbent upon GEMA to take proper account of all relevant evidence to inform its decision and to place appropriate weight on the evidence. For the reasons given in (a) – (c) above, GEMA has failed to do so. GEMA has made erroneous methodological choices – failing to take proper account of evidence which would support a higher equity beta – and has made unbalanced judgements in reaching its decision.

110 CEPA, 9 July 2020, RIIO-2: Beta estimation issues, page 5 [**DP1/21**].
111 DP1, paragraph 175 onwards.

3.124 GEMA's unjustified selectivity in estimating the equity beta is one of many factors which has led it to set a materially lower COE than is justified on a proper account of all of the relevant evidence and when balanced judgements are applied (see section E, **Insufficient COE Error**).

Total Market Return

3.125 This section is in two parts: first, the Appellant sets out the background to GEMA's decision in setting TMR and second, the Appellant describes the errors in GEMA's assessment.

3.126 In summary, GEMA adopted the historical long-run average approach to estimating TMR, as set out in the UKRN Report.[112] GEMA settled on a working assumption of the TMR range of 6.25% to 6.75% (CPIH) in the SSMC and did not vary it through the RIIO-2 process. GEMA asserts that its decision is in line with an approach "*that most estimation methods continue to support*".[113] However, this is not the case. Whilst GEMA did adopt a widely accepted approach of estimating TMR from averaging historical stock-market returns over a long-period (the historic ex post method), GEMA's application of this approach departed from precedent and only took account of a narrow range of evidence.

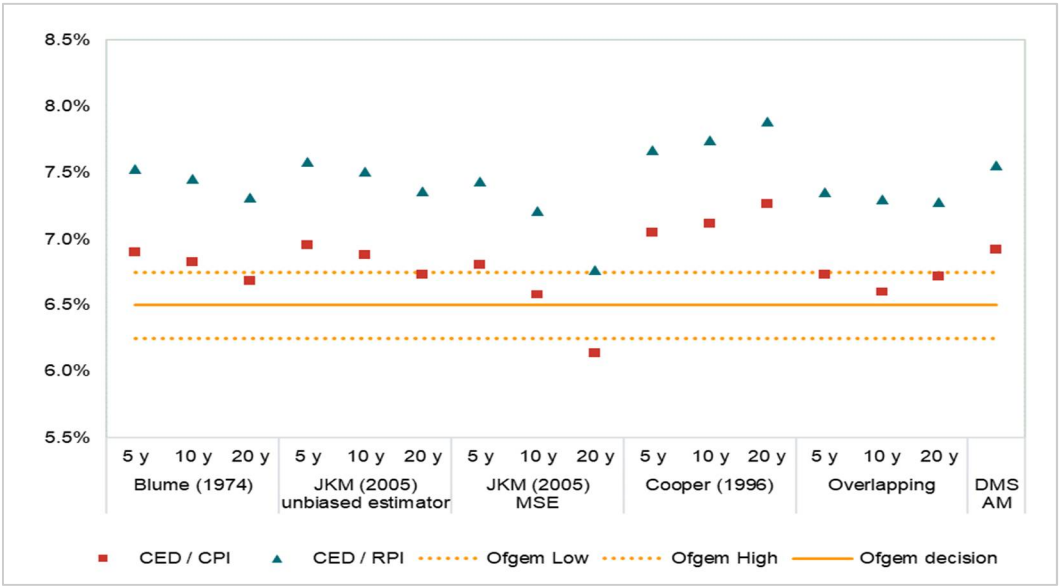
3.127 In order to estimate TMR using a historical ex-post approach, it is necessary to deflate long-run nominal returns into real-term equivalents. This requires GEMA to make decisions in relation to both the historical inflation series used and the approach to constructing an average from that data series, which involve setting a method for averaging and the length of the assumed holding period.

3.128 GEMA used an experimental data series for historical inflation, based on CPI back cast data rather than RPI, and increased the weight on the geometric average historical return (rather than the arithmetic average). These two methodological changes led to a material reduction in GEMA's TMR estimation as compared to GEMA's approach in RIIO-1. This is incompatible with the principle that TMR is broadly stable over time[114] and GEMA's commitment that moving from CPI indexation would be NPV neutral.[115]

3.129 This sharp downward adjustment to TMR as determined by GEMA is the result of GEMA failing to take into account alternative data series and averaging approaches that would provide a more balanced estimate of TMR. Figure 3 sets out the wider range of estimates of TMR that GEMA should have considered in determining its TMR range. As noted in the Cost of Equity Report, GEMA's point estimate of 6.5% is "*not supported by a wide range of evidence and it is not consistent with standing regulatory precedent*" and does not reflect a balanced assessment of the evidence that was available to GEMA.[116]

112 UKRN Report [**NOA1/16**].
113 FD, Finance Annex, page 49, paragraph 3.98 [**NOA1/12**].
114 Cost of Equity Report, page 43, paragraph 5.1.3 [**MH1/1**].
115 DP1, section G.
116 Cost of Equity Report, page 55, paragraphs 5.3.46 [**MH1/1**].

Figure 3: TMR ranges expressed CPI (real), including further evidence for the CMA's consideration



Source: FE analysis

3.130 GEMA's approach to TMR estimation therefore artificially lowered the upper end of the range, resulting in an erroneously low COE. This was the result of:

a) GEMA wrongly relying on a CED/CPI historical inflation series without giving due weight to the CED/RPI series;

b) GEMA failing to consider relevant evidence in relation to the averaging methodology;

c) GEMA's nominal return source data being biased downwards;

d) TMR cross-checks being wrongly applied; and

e) GEMA's failure to take proper account of the evidence available in relation to the estimation of TMR.

3.131 These errors are material as they result in an estimated TMR that is too low and, consequently, results in a COE that is too low (see **Section E – Insufficient COE Error**). They are also material because it is contrary to well-established regulatory and economic principles to estimate CAPM parameters based on unjustifiably selective evidence and therefore sets a harmful precedent for future price controls.

3.132 The Appellant requests that the CMA also reads section 5 of the Cost of Equity Report and section G of DP1 when considering this error.

(1) Background to GEMA's decision

3.133 In the Framework Consultation, GEMA suggested that TMR is usually approximated by the 'historical ex post approach', i.e. measuring the historical realised returns from investing in the stock market as a whole. GEMA acknowledged that "*alternative approaches are also feasible*",[117] which include 'historical ex ante approaches' which seek to separate out one-off factors from the historical data and 'forward looking approaches' which seek to infer investor expectations from current stock market prices and prospects for dividend growth. GEMA reported that its consultants, CEPA, had considered a range of approaches (including the Competition

[117] RIIO-2 Framework Consultation, page 87, paragraph 7.40 [**NOA1/2**].

Commission's findings in NIE (2014) as well as forward-looking approaches indicated by other regulators such as Ofwat and CAA) before recommending a TMR range of 5 to 6.5% (RPI).[118]

3.134 In the Framework Decision, GEMA confirmed that it would estimate TMR by using the historical long-run average of market returns but it would also take full account of forward-looking approaches.[119] GEMA rejected concerns from stakeholders (including the Appellant[120]) that the implied values for estimating TMR were materially higher than the values referred to by CEPA noting that 6.5% (RPI) was "*probably at the top end of reasonable estimates*"[121] and that it had "*accepted the recommendations from the UKRN study*".[122] However, as explained in section G of DP1, GEMA only accepted certain of the recommendations and ignored others. GEMA also stated "*we will aim to be consistent with (and take full account of) recent determinations from competition authorities and other regulators*".[123] This objective was subsequently set aside in favour of arriving at a lower estimate.

3.135 In the SSMC, GEMA summarised some of the main issues raised by stakeholders, including the unjustified gap in GEMA's proposed TMR estimate relative to previous price control decisions, the use of unreliable inflation values in the UKRN Report (resulting in a lower real return), and errors in the conversion of geometric returns to arithmetic returns. Details of the discussions held by GEMA with the ENA and with the Appellant and the evidence put to GEMA by Network companies are provided in section G of DP1.

3.136 GEMA changed its view on the proposed TMR range in the SSMC. Whereas in the Framework Consultation and Framework Decision, GEMA considered that on the basis of regulatory precedent the top end of the TMR range would be 6.5% (RPI),[124] in the SSMC GEMA proposed a TMR range of 6.25% to 6.75% (CPI). There were two steps to GEMA's adjustment of the TMR range.

3.137 First, GEMA reduced the top end of the range from 7.5% (CPI)[125] to 7% (CPI). This revised range was based on the recommendation of the UKRN Report. That report recommended a TMR of 6% to 7%, which GEMA interpreted as being expressed in CPI terms based on the view of Professor Stephen Wright, one of the four authors of the UKRN Report. In the SSMC, GEMA attributed the 50 bps reduction in the top end of its TMR range to lower Dimson Marsh Staunton (**DMS**) returns, higher Bank of England inflation and a lower arithmetic uplift.[126]

3.138 Second, in contrast to its previous position that consistency with previous price controls was desirable, GEMA now considered that an estimate of TMR "*lower than previous price controls was appropriate*".[127] GEMA therefore adopted a working assumption that the TMR range was 6.25% to 6.75% (CPIH).[128]

3.139 GEMA explained that these changes were the result of methodological changes in its approach. GEMA proposed using Bank of England inflation data, based on a Consumption Expenditure Deflator (**CED**) and CPI data as it was "*not at this stage persuaded*" by arguments advocating the use of DMS inflation data.[129] GEMA also proposed placing more weight on historical long run averages as opposed to forward-looking approaches, such as dividend discount models (**DDM**) and expert opinions. GEMA's use of inflation data is further discussed in section G of DP1.

3.140 In the SSMC, GEMA also proposed using a number of cross-checks for TMR. These included:

118 RIIO-2 Framework Consultation, page 88 paragraph 7.44 [**NOA1/2**].
119 RIIO-2 Framework Decision, page 56, paragraph 6.41 [**NOA1/3**].
120 DP1, section G.
121 RIIO-2 Framework Decision, page 54, paragraph 6.31 [**NOA1/3**].
122 RIIO-2 Framework Decision, page 56, paragraph 6.44 [**NOA1/3**].
123 RIIO-2 Framework Decision, page 56, paragraph 6.44 [**NOA1/3**].
124 RIIO-2 Framework Consultation, page 84, paragraph 7.33.4 [**NOA1/2**]; Framework Decision, page 54, paragraph 6.31 [**NOA1/3**].
125 This was expressed as 6.5% (RPI) in the Framework Decision, which is c. 7.5% in CPI terms.
126 SSMC, Finance Annex, page 27, Figure 8, and pages 89 to 90 [**NOA1/5**].
127 SSMC, page 104, paragraph 10.42 [**NOA1/4**].
128 SSMC, Finance Annex, page 31, paragraph 3.85 [**NOA1/5**].
129 SSMC, Finance Annex, page 31, paragraph 3.82 [**NOA1/5**].

a) cross-checking the TMR range with long-run outturn averages measured in US dollar ($) terms;[130]

b) using a DDM, to estimate investors' forward-looking expectations;[131] and

c) using estimates of medium-term and long-term nominal UK TMR from asset managers and financial organisations.[132]

3.141 In the SSMD, GEMA confirmed that stakeholders continued to raise concerns about the limits in its proposed methodology for estimating TMR:[133]

> *Responses confirm that there are differences in opinion regarding the optimal methodology and the most appropriate way to interpret outturn data.*

3.142 GEMA acknowledged that the concerns raised related not only to the range of evidence relied upon but also to the manner in which GEMA had sought to interpret the data:[134]

> *[N]etwork companies…continued to disagree with how we have interpreted available data, while raising concerns about which data we should focus on.*

3.143 GEMA dismissed these concerns as explained in section G of DP1. Instead, GEMA endorsed the approach proposed in the UKRN Report to estimating the TMR range.[135] However, GEMA also observed that while the UKRN Report provided a "*robust recommendation*" that TMR is between 6% and 7% (CPI) its cross-checks pointed to a lower figure, being 6% CPI from the DDM cross-check and 5.5% CPI from the expert forecasts.[136] GEMA considered that these cross-checks supported a reduced range of 6.25% to 6.75% (CPI).

3.144 As noted in section 5.2 of the Cost of Equity Report, GEMA carried its working assumptions from the SSMD through to the DD and FD without conducting any fresh analysis. This is demonstrated by the fact that the TMR ranges put forward by GEMA in its RIIO-T2 Decision document remained unaltered from the SSMC as shown in Figure 4.

Figure 4: Development of TMR range from Framework Consultation to FD

Document	*TMR range*
Framework Consultation	*5% to 6.5% (RPI)*
Framework Decision	*5% to 6.5% (RPI)*
SSMC – Finance Annex	*6.25% to 6.75% (CPIH real)*
SSMD – Finance Annex	*6.25% to 6.75% (CPIH real)*
DD – Finance Annex	*6.25% to 6.75% (CPIH real)*
FD – Finance Annex, Revised	*6.25% to 6.75% (CPIH real)*

3.145 In the DD, GEMA noted that a number of companies had submitted estimates of TMR that were higher than GEMA's. GEMA was, however, unpersuaded by the arguments made to support

130 SSMC, Finance Annex, pages 27 to 28, paragraphs 3.67 to 3.70 [**NOA1/5**].
131 SSMC, Finance Annex, pages 28 to 29, paragraphs 3.71 to 3.76 [**NOA1/5**].
132 SSMC, Finance Annex, pages 29 to 30, paragraphs 3.77 to 3.78 [**NOA1/5**].
133 SSMC, Finance Annex, pages 24 to 28, paragraphs 3.51 to 3.71 [**NOA1/5**].
134 SSMC, Finance Annex, page 24, paragraph 3.51 [**NOA1/5**].
135 SSMD, Finance Annex, page 31, paragraph 3.83 [**NOA1/5**].
136 SSMD, Finance Annex, pages 41 to 42, paragraph 3.103 [**NOA1/7**]. Note that GEMA refers to CPIH in this SSMD but considers this to be a proxy for CPI (SSMD, Finance Annex, page 7, paragraph 1.10 [**NOA1/7**]).

higher estimates. In particular, it did not accept submissions by Oxera which were influenced by its DDM, the Appellant's paper on inflation, which focused on historical RPI returns, and Oxera and the Appellant's reliance on arithmetic averaging, based on the Cooper methodology.[137]

3.146 In the FD, GEMA maintained the approach to estimating TMR that it had proposed in the SSMC and decided in the SSMD. In the FD, GEMA maintained that its approach to historical returns data avoided "*an over-reliance on any one measure, such as RPI*".[138] It also maintained its approach of starting from geometric average returns and adding an upward adjustment.[139]

3.147 GEMA rejected arguments that it had used an inappropriately long time horizon for estimating the holding period of a typical investor. It noted that it had taken a long-term view of other parameters in the price control.[140]

3.148 GEMA also stated that the consistency of UK returns measured in US dollars provided it with comfort on its decision on TMR.[141] GEMA's view was that marginal investors can move capital internationally and US dollars are an appropriate way to measure real returns as US CPI was a more accurate estimate of inflation than UK inflation indices and the 'purchasing power parity' theorem holds, in which case the exchange rate reflects the difference in inflation between two currencies.

3.149 In the FD, GEMA also set out its views on the CMA's PR19 PFs and the NATS Appeal. GEMA noted that its views were similar to those in the CMA's NATS PFs.[142] It stated that it believed that this view better reflected the available evidence and the conclusions of the UKRN Report than the CMA's PR19 PFs.[143]

3.150 In the FD GEMA concluded that a TMR of 6.5% (CPIH) is "*comfortably at the top end of investors' current expectations*".[144]

(2) Errors in estimating TMR

3.151 The reasons why GEMA's estimation of TMR was wrong are set out in (a) – (e) below.

(a) It was wrong to rely on a CED/CPI historical inflation series without giving due weight to the CED/RPI series

3.152 TMR is largely unobservable as it is concerned with investors' ex ante expectations of returns.[145] As such, there is no universally accepted method for deriving TMR. GEMA decided in the SSMD to use a historical ex-post approach to determining TMR, in line with the recommendation in the UKRN Report.[146] This approach required GEMA to deflate long-run nominal returns into real-term equivalents so that it could estimate investors' current expectations from historical realised returns.

3.153 As set out in the Cost of Equity Report, in order to convert the nominal returns to real returns, ideally a regulator would wish to rely on a consistent and authoritative source of inflation data for the relevant period. However, such a series does not exist.[147] There are, however, a range of data sources available for inflation data. GEMA decided to assess inflation from the period 1900 onwards solely using the CPI series of the Bank of England's "Millennium" dataset,[148] pursuant to a recommendation in the UKRN Report.[149]

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137 DD, Finance Annex, page 34, paragraphs 3.11 to 3.15 [**NOA1/9**]. Also see DP1 for further details.
138 FD, Finance Annex, page 46, paragraph 3.87 [**NOA1/12**].
139 FD, Finance Annex, page 46, paragraph 3.87 [**NOA1/12**].
140 FD, Finance Annex, page 47, paragraphs 3.89 [**NOA1/12**].
141 FD, Finance Annex, page 47, paragraphs 3.90 [**NOA1/12**].
142 FD, Finance Annex, page 48, paragraph 3.93 [**NOA1/12**].
143 FD, Finance Annex, Revised, page 48, paragraph 3.97 [**NOA1/12**].
144 FD, Finance Annex, Revised, page 48, paragraph 3.96 [**NOA1/12**].
145 PR19 PFs (29 September 2020), page 535, paragraph 9.143 [**NOA1/17**].
146 SSMD, Finance Annex, page 42, paragraph 3.104 [**NOA1/7**].
147 Cost of Equity Report, page 48, paragraph 5.3.14 [**MH1/1**].
148 SSMD, Finance Annex, page 35, paragraph 3.75 [**NOA1/7**].
149 UKRN Report, page 31 [**NOA1/16**].

3.154 GEMA's approach to the inflation index was flawed because: (i) GEMA wrongly considered that the CPI back-cast historical inflation series was sufficiently robust to be the sole inflation index relied upon; and (ii) GEMA wrongly disregarded the RPI historical inflation series. These points are addressed in turn below.

(i) GEMA failed to recognise that its CPI-deflated TMR is likely to result in its TMR range being materially understated

3.155 GEMA decided early in the RIIO-2 process that it would move away from RPI measures of inflation to CPI or CPIH for indexation of RAV and revenues. In the Framework Consultation, GEMA stated:[150]

> *We propose to move away from RPI to either CPI or CPIH and seek views on how we should do this. Ofwat propose a phased transition, but, we are not convinced phasing is necessary.*

3.156 GEMA also proposed early in the process that it would use a TMR range of 6.25% to 6.75% (CPIH real).[151]

3.157 GEMA conflated these two decisions to justify a significant methodological change in its approach to determining TMR. As set out in DP1,[152] the Appellant is not concerned with GEMA's decision to index future price controls by CPIH. However, GEMA's approach to determining a TMR range that can be indexed by CPI was flawed. GEMA relied on the Bank of England "Millennium" dataset, which includes observed CPI data for the period from 1996 onwards, and a mix of data sources for the preceding 97 years, from 1900 to 1996 (the CED/CPI data series).

3.158 GEMA's CPI inflation index comprises the following data series:[153]

Period	**Data source underpinning 'CPI' data series used by GEMA**
1900 – 1914	Consumption Expenditure Deflator (CED) or Cost of living estimates for working class only
1914 - 1947	CED
1947 - 1949	Interim Index of Retail Prices
1949 – 1988	Opaquely modelled back-cast based on a series of modelling assumptions
1988 – 1996	Retrospective recalculations of CPI based on imperfect data
1996 onwards	Contemporaneously calculated and published CPI data

3.159 As set out below, these data series have material flaws that GEMA has failed to take into account.

3.160 **For the period 1900 to 1914**: the Bank of England's Millennium databook contains two 'CPI' series: one of these uses CED and the other uses cost of living estimates for working class only. It is not clear which GEMA has used.[154]

3.161 The 'cost of living estimates for working class only' series was calculated in 1991. It had relatively limited coverage in terms of population and therefore could suggest inflation values that are very different from that of the population as a whole.[155]

150 RIIO-2 Framework Consultation, page 99, paragraph 7.98 [**NOA1/2**].
151 SSMC, Finance Annex, page 31, paragraph 3.84 [**NOA1/5**].
152 DP1, paragraph 190.
153 DP1, paragraph 240, Table 4.
154 DP1, paragraph 241.
155 National Grid TMR Report, pages 17 to 18 [**DP1/26**].

3.162 **For the period 1900 (or 1914) to 1947**: the data series used by GEMA relies on CED values for this period that were attributed to a paper written in 2004 and were calculated from data that was originally compiled and published in 1972. CEDs constructed on a basis that is consistent with that used for the period prior to 1947 show greater alignment to RPI inflation than CPI inflation for the period during which analysis is available.[156] Analysis also demonstrates that the average differential between CED values on this basis and RPI is relatively small for the full period that both data sets are available. It is therefore likely that the CED series has been constructed using a methodology that is more comparable to RPI and thus includes an element of the "formula effect", which contributes to an overestimation of inflation.[157] The Office for National Statistics (**ONS**) confirmed its agreement with this interpretation.[158] The use of CED in a 'CPI' series therefore overstates CPI for the years 1900 to 1947 (as a result of the formula effect) as compared to subsequent years. This artificially reduces estimated CPI real returns.

3.163 The CMA also recognised in its PR19 PFs that the consumer deflator gives an inflation estimate between RPI and CPI. As such, sole use of a CED/CPI deflated index is likely to increase inflation and therefore artificially reduce TMR. The CMA noted that "*CED cannot be said to be more like RPI or more like CPI but that it is reasonable to combine CED data with both CPI and RPI*".[159] The CMA's conclusion that CED lies between CPI and RPI means that the inclusion of the CED series within a CPI series artificially increases the CPI inflation assumption and therefore artificially decreases the bottom of the CMA's TMR range.[160] As such, based on the CMA's reasoning, GEMA's CED/CPI-deflated TMR calculations are artificially reduced.

3.164 **For the period between 1947 and 1949**: the values in the CPI series are identical to those for the RPI series in these years, and use the values of the interim Index of Retail Prices. The values in the CPI series from 1947 to 1949 are therefore an RPI measure and are unlikely to be an accurate measure of CPI.

3.165 **For the period between 1949 and 1988**: the data series used by GEMA relies on back cast CPI data. CPI was not recorded for the period prior to 1988. The CPI data included in the Bank of England "Millennium" dataset between 1950 and 1998 were developed as part of a one-off project undertaken by ONS statisticians, applying an [opaque] ARIMA[161] methodology, aspects of which cannot be recreated.[162] This back cast series is unreliable and the CMA noted in its PR19 PFs that, "*it is impossible to know how accurate the figures are*".[163] Similarly, the authors of the ONS report that initially published the data noted that "*caution should be exercised when using these series*" and emphasised that CPI estimates were not national statistics.[164] Lastly, the ONS identified an error in its approach to back-casting the CPI data series but has still not published the corrected data for the period between 1950 and 1988.[165]

3.166 **For the period between 1988 and 1996**: GEMA used retrospective calculations of CPI for this period.[166] CPI was not recorded until 1997. For the period between 1989 and 1997, GEMA's data series uses ONS estimates of CPI that used adjusted RPI indices (as opposed to being based on individual price quotes aggregated using the Jevons formula). As such, they embed a degree of the RPI formula effect, which contributes to an overstatement of inflation.

3.167 GEMA has wrongly concluded that the Bank of England's CED/CPI dataset is reliable.[167] Taking the above into account, it is clear that the CED/CPI dataset is flawed and was not intended to be

156 National Grid TMR Report, page 11 [**DP1/26**].
157 Cost of Equity Report, page 50, paragraph 5.3.20 [**MH1/1**].
158 DP1, paragraph 245.
159 PR19 PFs, page 544, paragraph 9.168 [**NOA1/17**].
160 As noted paragraph 202(a)(ii) of DP1, there is an error in the CMA's calculations using CEDs, but the principles set out above still apply.
161 Auto Regressive Integrated Moving Average (**ARIMA**).
162 Cost of Equity Report, page 50, paragraph 5.3.19 [**MH1/1**].
163 PR19 PFs, pages 540 to 541, paragraph 9.160 [**NOA1/17**].
164 O'Neill, R. and Ralph, J., Modelling a Back Series for the Consumer Price Index (2013), Office for National Statistics, page 7 [**NOA1/40**].
165 Oxera, 15 April 2020, Response to the CMA on estimating RPI-adjusted equity market returns 15 April 2020, page 2 [**DP1/35**].
166 Cost of Equity Report, page 48, paragraph 5.3.15 [**MH1/1**].
167 DD, Finance Annex, Appendix 3, page 195 [**NOA1/9**].

used for such a purpose. As such, GEMA was wrong to rely solely on this dataset for the purposes of determining TMR.

3.168 GEMA sought to justify its reliance on the CED/CPI dataset by reference to the NATS PFs which considered that "*the CED/CPI approach is likely to be more reliable than the CED/RPI*".[168] However, GEMA did not update its analysis in the FD to reflect the CMA's subsequent PR19 PFs, where the CMA undertook a more detailed assessment of the evidence than in the NATS Appeal. This was despite having adequate time to do so. In its PR19 PFs, the CMA noted that:[169]

> *As a result of these reservations about the CPI data available to us over the historic period, and taking into account the fact that actual RPI inflation data has been collected and an inflation series produced on this basis over the whole post-1950 period, we believe it is appropriate to take into account both CPI- and RPI-deflated estimates of the TMR.*

3.169 Therefore, GEMA's reliance on the CED/CPI dataset as its sole source of inflation data for the ex-post historic method of determining TMR was flawed. GEMA failed to take proper account of relevant evidence which would have led to a higher estimate of TMR. GEMA's approach was unjustifiably selective and its estimation of TMR was wrong as a result.

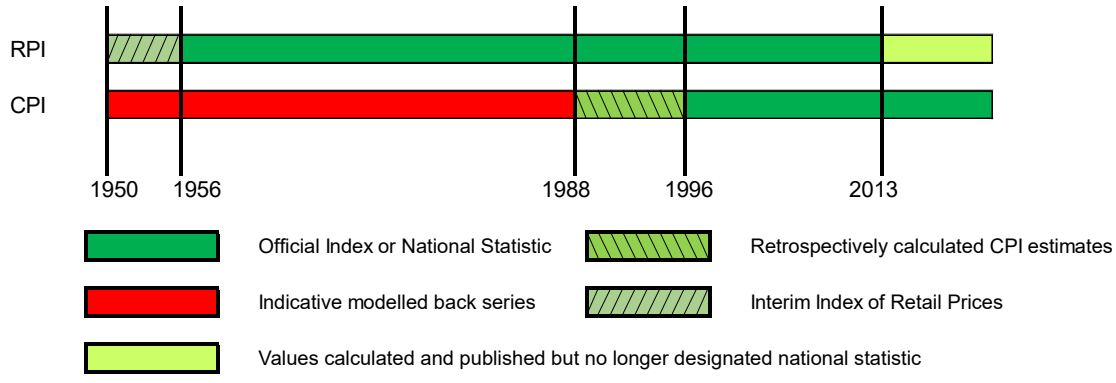
(ii) GEMA has wrongly disregarded the RPI historical inflation series

3.170 In relying solely on the CED/CPI data series, GEMA has failed to recognise the key strengths of the RPI data series over CPI as a historic inflation measure. As such, GEMA has failed to take proper account of relevant evidence in determining TMR for RIIO-2.

3.171 First, the RPI data series is based on contemporaneously produced data that has been widely published, used and scrutinised by Government, academics and statisticians. The Government Actuary's Department recognised that for many years RPI was the headline measure of price inflation.[170] Whereas CPI was only recorded fully from 1997, RPI has been contemporaneously recorded since 1947. As such, RPI is a better recognised and more proven measure than CPI back cast, which is recently modelled and has not had the same level of scrutiny.[171]

3.172 Figure 5 shows that the CPI data series relied upon by GEMA is materially inferior to the RPI data series, which was recorded contemporaneously.

Figure 5: Comparison between data series



Source: National Grid

3.173 Second, RPI remains the preferred inflation metric for backward looking purposes. GEMA justified its decision not to use the CED/RPI dataset in the SSMD on the basis of "*evidence from*

168 DD, Finance Annex, Appendix 3, page 195 [**NOA1/9**].
169 PR19 PFs, page 543, paragraph 9.166 [**NOA1/17**].
170 Cost of Equity Report, page 48, paragraph 5.3.15 [**MH1/1**].
171 Cost of Equity Report, page 50, paragraph 5.3.19 [**MH1/1**].

investors and issues highlighted since 2010 on the use of RPI as an inflation statistic".[172] This conflates concerns with the use of RPI going forward and the use of RPI as a measure of historic inflation. The ONS has questioned the use of RPI as a forward-looking index, and this is not in contention. The ONS has not, however, questioned the use of RPI for backward looking purposes, as would be the case when determining TMR for RIIO-2. The Bank of England has also supported the use of the RPI series in evaluating historical inflation and it has been used by the ONS when comparing the purchasing power of the pound since 1947.[173]

3.174 Third, GEMA has failed to take a balanced assessment of the available evidence. In the DD, GEMA noted that it, "*avoid[ed] an over-reliance on any one measure, such as RPI, in line with CMA's approach and then-provisional rationale in the NATS Appeal*".[174] However, there is no evidence that GEMA took any account of the CED/RPI series in its inflation estimates. As such, GEMA has over-relied on a single dataset, being CED/CPI.

3.175 For these reasons, GEMA's decision to rely solely on the CED/CPI data series was based on an incorrect understanding of the relative benefits of the CED/RPI data series and, as such, was flawed. Whilst the CED/RPI data series has some shortcomings, these can be addressed through small adjustments to the series. Oxera has demonstrated that under some specifications of the structural break tests, the net effect of all the changes was zero, implying that no adjustment should be made to the long-run average of RPI inflation. In other words, the long-run average of RPI inflation could be used to deflate the long-run average equity return.

3.176 In opting to disregard RPI-deflated estimates of TMR entirely, GEMA also failed to take account of the CMA's approach in its PR19 PFs, where the CMA balanced RPI deflated estimates with CPI deflated estimates to take account of the available evidence. The CMA noted that:[175]

> *we have estimated historic returns using both the RPI and the CPI (actual plus 'backcast') inflation series… both these data series have relevant strengths and weaknesses in the context of estimating real historic returns.*

3.177 The CMA's use of various datasets is described further in the Cost of Equity Report.[176]

3.178 As set out in the Cost of Equity Report, GEMA should have estimated long run average for real TMR using CED/CPI and CED/RPI datasets,[177] rather than disregarding a significant body of relevant and established evidence. GEMA's approach was unjustifiably selective and its estimation of TMR was too low as a result.

(b) GEMA's averaging methodology for determining TMR was flawed

3.179 When averaging historic returns, regulators must consider the averaging methodology used and the holding periods assumed (together with other inputs).[178] As set out below, GEMA failed to take proper account of a range of relevant evidence relating to both of these factors when estimating TMR.

(i) GEMA used a downwards biased averaging methodology

3.180 One of the key methodological considerations when considering historic evidence on returns is the appropriate averaging method. GEMA had to consider how to estimate historic returns from source data, taking account of different averaging approaches and assumptions (e.g. investors' holding period). Rather than using an arithmetic averaging approach, GEMA used the geometric average of historical equity returns and then adjusted it upwards. GEMA's failure to consider use of alternative methodologies and the application of a low uplift to the geometric average is wrong.

172 SSMD, Finance Annex, page 35, paragraph 3.75 [**NOA1/7**].
173 National Grid TMR Report, page 8 [**DP1/26**].
174 DD, Finance Annex, page 59, paragraph 3.87 [**NOA1/9**].
175 PR19 PFs (29 September 2020), pages 540 to 541, paragraph 9.160 [**NOA1/17**].
176 Cost of Equity Report, page 49, paragraph 5.3.18 [**MH1/1**].
177 Cost of Equity Report, page 50, paragraph 5.3.20 [**MH1/1**].
178 Cost of Equity Report, page 47, paragraph 5.3.10 [**MH1/1**].

3.181 The arithmetic average is generally adopted for estimating TMR.[179] However, in the FD, GEMA decided to use a geometric average of historical equity returns and then adjust this number upwards. This is an indirect approach to estimating the arithmetic average and GEMA's use of a low uplift results in a downwards-biased approach. It is a methodological error that resulted in GEMA underestimating TMR.[180]

3.182 GEMA failed to consider alternative, well-established averaging approaches proposed by the Appellant during the RIIO-2 price control process. These methods take account of other sources of bias in calculating averages for different purposes. Different estimation methods are relevant in different circumstances, depending on the source data set and on the purpose for which the average will be used.

3.183 As set out in the Cost of Equity Report, it is common for investors and regulators to use a range of methodologies to estimate the TMR range, for the purpose of calculating the cost of equity.[181] Investors will use the allowed cost of equity for a range of purposes including capital budgeting. It is therefore relevant that a range of estimating methodologies is considered in determining the TMR range.

3.184 Various averaging methods that may be taken into account by GEMA include:

a) the Blume unbiased estimator;

b) the JKM unbiased estimator;

c) the JKM (MSE);

d) overlapping averages;

e) non-overlapping averages;

f) the DMS adjusted arithmetic method; and

g) the Cooper averaging method.

3.185 The CMA has relied on methods (a) to (e) in previous redeterminations, including Bristol Water in 2010, NIE in 2014 and PR19 in 2021.[182] As such, it is well established that regulators should take a balanced approach using a range of averaging methodologies.

3.186 Figure 3 shows the impact on TMR of considering these alternative methodologies. It is evident from this that GEMA's methodology results in an artificially low TMR that either arbitrarily or deliberately excludes approaches that would demonstrate that TMR should be higher. GEMA has failed to give these different methodologies due weight and, as a result underestimated TMR.

3.187 In the DD, GEMA acknowledged Oxera and the Appellant's view that the use of arithmetic averages was superior based on research by Cooper. However, GEMA stated that it was unconvinced that arithmetic averaging, particularly if unadjusted, is more reliable than adjusting the geometric mean upwards. This view appears to be based on Blume's demonstration that "*if the holding period is longer than one year, the arithmetic mean of one-year returns is an upwards biased measure of the true-expected return*".[183]

3.188 As set out in section G of DP1, GEMA was wrong to exclude the Cooper averaging method.[184] Oxera and Professor Schaefer submitted evidence to GEMA, based on the work of Cooper, that showed that the average that is required to give an unbiased estimate of the discount factor for use in capital budgeting will be at least as high as the arithmetic average of historical returns. As

179 Cost of Equity Report, page 51, paragraph 5.3.25 [**MH1/1**].
180 DP1, paragraph 258 onwards.
181 Cost of Equity Report, page 51, paragraph 5.3.26 [**MH1/1**].
182 Cost of Equity Report, page 51, paragraphs 5.3.26-5.3.27 [**MH1/1**].
183 DD, Finance Annex, page 35, paragraph 3.15 [**NOA1/9**].
184 DP1, paragraphs 267-268.

the horizon for investment appraisal extends, TMR must be further increased above the arithmetic average using the Cooper estimator.[185]

3.189 In relying on a downwards biased estimator, without also including the Cooper estimator in its approach, GEMA erred and determined a materially low TMR range.

3.190 The Cost of Equity Report also proposes the DMS adjusted arithmetic method as an appropriate addition to the set of averaging methods.[186] This method is based on DMS's argument that the arithmetic average is the most appropriate estimate for the expected equity return. Specifically, DMS propose estimating the arithmetic average return by taking the geometric return and adding half of the variance of the observed equity market return.

(ii) It was wrong to use a holding period assumption of solely 10 years or more

3.191 GEMA is not clear about its holding period assumption when determining TMR, i.e. the length of period that investors will hold an investment. In the UKRN Report, the UKRN recommended using a "*relatively long holding period*" and noted 10 years as an example.[187] It can be inferred, therefore, that GEMA has used a holding period of 10 years or more. Similarly, it appears from GEMA's dismissal of proposals by NERA, that it has not used a 5 year holding period.[188] GEMA's approach is wholly unsupported and is a flawed assumption in its approach to determining TMR.

3.192 Many of the estimating approaches available to GEMA rely on an assumption of the relevant holding period. Averaging methodologies generally assume that the extent of any adjustment away from the arithmetic mean increases when longer holding periods are assumed.

3.193 As TMR is a market parameter, the relevant holding period needs to be based on market parameters. As set out in the Cost of Equity Report[189], UK energy holding periods are approximately 4.4 years on average and, as such, tend to be shorter than the holding periods which GEMA appears to have used. Frontier Economics has demonstrated the effect of different holding periods by estimating TMR based on 5, 10 and 20 year holding periods (see Figure 3 above). This clearly shows that GEMA's approach results in a very low TMR that is not sustainable on any balanced view.

3.194 Furthermore, as set out in the Cost of Equity Report, an analysis of London Stock Exchange data supports TMR values that are close to the arithmetic average. This data, which reflects the broader market, shows that the average holding period is around 1 – 2.5 years. Given that TMR is a market wide parameter, there is strong support for using a TMR that reflects this shorter averaging holding period, i.e. a TMR that is close to the arithmetic average.

3.195 As noted in the Cost of Equity Report, best practice is to consider a range of holding periods.[190] In the PR19 Redeterminations, the CMA considered 10 year holding periods, as well as 20 years as this reflected the relatively long holding periods of investors in UK water companies.[191] Similarly, in PR19, Ofwat considered 5 year and 10 year holding periods.[192] However, GEMA has failed to follow this best practice and to take proper account of a range of evidence. GEMA's approach was therefore inconsistent with best regulatory practice.

3.196 GEMA's failure to take a balanced view in calculating averages used to estimate TMR results in the top of its TMR range being materially downwards biased. GEMA's approach was unjustifiably selective and its estimation of TMR was too low as a result.

185 Professor Schaefer, 15 April 2020, Comments on CMA views on Estimating Expected Returns [**DP1/37**].
186 Cost of Equity Report, page 52, paragraph 5.3.32 [**MH1/1**].
187 UKRN Report, page 7 [**NOA1/16**].
188 FD, Finance Annex, Appendix 3, page 165 [**NOA1/12**].
189 Cost of Equity Report, page 53, paragraph 5.3.40 [**MH1/1**].
190 Cost of Equity Report, page 53, paragraph 5.3.39 [**MH1/1**].
191 Cost of Equity Report, page 53, paragraph 5.3.39 [**MH1/1**].
192 Ofwat, December 2019, PR19 Final Determinations, Allowed return on capital technical appendix, page 41 [**MH1/3.1.65**].

(c) GEMA's nominal return source data is biased downwards

3.197 In determining TMR, GEMA had to rely on source data on long-run averages to calculate nominal returns. The source data used by GEMA is downwards biased for no good reason and led to it under-stating TMR. GEMA failed to take proper account of evidence submitted by the Appellant that would have redressed this imbalance.

(i) GEMA's source data is downwards biased due to the start date of 1900

3.198 GEMA used annual return values from the Credit Suisse Global Investment Returns Yearbook authored by Dimson, Marsh and Staunton based on a start date of 1900. This start date results in an artificially low TMR as 1900 is the start point that gives the lowest – or close to the lowest – long-run average returns. As set out in the Appellant's response to the SSMC, it is wrong to use a start date of 1900 to calculate long-run averages when using either earlier or later start dates would result in a higher TMR. The Appellant subsequently submitted updated analysis to GEMA in January 2020 which provided further evidence that 1900 was an arbitrary start date that resulted in an artificially low TMR and proposed using different outturn periods to address this distortion.[193]

3.199 In the SSMD, GEMA dismissed the Appellant's suggestion on the basis that using older data (i.e. data from 1825 to 1900) would be less reliable and that using a later start date to exclude the two World Wars and the Great Depression would be "*unduly biased*".[194]

3.200 GEMA's response was overly simplistic and did not adequately consider the Appellant's proposed approach. The Appellant did not propose that GEMA solely considers returns data from 1950 but, rather, that GEMA address the distortion of having a starting date of 1900 by using different outturn periods to determine TMR. The Appellant further clarified its concerns and proposed solution in its response to the DD but GEMA did not vary its position in the FD.

3.201 As set out in section G of DP1, GEMA's approach of using 1900 as a start date is arbitrary and does not present a balanced view. Using a start date of 1898, 1899, 1901 or 1902, for example, would result in a higher TMR than using 1900. Moreover, there is no fundamental reason to place weight on returns data from the early years of the 20th century but not the later years of the 19th century, as GEMA did. Given that different start dates gives different long-run averages and there is no financial or economic basis for relying on any single start date, it is expected that a regulator would take account of a reasonable range of evidence, and this should include different outturn periods.

(ii) GEMA's source data is downwards biased due to its reliance on the top 100 companies

3.202 The returns dataset relied upon by GEMA is likely to understate TMR as it is based on the returns of the 100 largest companies only from 1900 to 1954. As set out in section G of DP1, the total returns on these largest companies would have been expected, on average, to be lower than those on smaller companies. This widely recognised difference is known as the 'size effect' and results in TMR being understated.[195]

3.203 The Appellant raised these concerns with GEMA's approach. The Appellant's submission to GEMA provided references for the 'size effect' and evidence that it was not immaterial.[196]

3.204 GEMA did not vary its reliance on this data and did not adjust its approach. In the DD, it stated:[197]

> *We have based our assessment on available evidence and are not aware of any source of downward bias in the available data as argued by NG.*

193 National Grid, TMR Report, page 55, paragraph A3 [**DP1/26**].
194 DP1, paragraph 282.
195 DP1, paragraph 290 onwards.
196 National Grid, TMR Report, page 56 [**DP1/26**].
197 DD, Finance Annex, page 193 [**NOA1/9**].

3.205 GEMA's response did not engage in any way with the detailed description of the downwards bias set out in the Appellant's submission.

3.206 GEMA's unjustified reliance on downwards biased source data led to it under-stating TMR. GEMA failed to take proper account of evidence submitted by the Appellant that would have redressed this imbalance. GEMA's approach was unjustifiably selective and its estimation of TMR was too low as a result.

(d) GEMA's TMR cross-check was irrelevant and wrongly applied

3.207 In the FD, GEMA stated that the consistency of UK returns measured in US dollars provides it with comfort that it should rely on CPI-deflated TMR estimates.[198] It states that the US CPI over the period was a more accurate estimate of inflation than the UK inflation indices and that exchange rates reflect the difference in inflation between the UK and US. This is wholly misconceived and cannot provide GEMA with comfort regarding its TMR determination.

3.208 As set out in the Cost of Equity Report, equity returns can in principle be checked using international evidence but GEMA's approach was flawed and, as a result, an irrelevant consideration when estimating TMR.

3.209 GEMA has considered UK equity returns, measured in US dollars and deflated by the US inflation rate. This reflects the equity return that would be achieved by a US investor investing in the UK equity market. Those investors are subject to US income and consumption and subject to US inflation. This proxy is wholly irrelevant to investors outside of the US. GEMA's approach recognises that investors may move capital from one jurisdiction to another. However, its reliance on US inflation is closer to assuming that an investor has moved house internationally.

3.210 Further, GEMA's approach failed to consider the practice of the discount rate and cashflows being denominated in the same currency.

3.211 GEMA's application of an irrelevant cross-check and its flawed methodology means its estimation of TMR was unjustifiably low.

(e) GEMA was wrong not to take proper account of the evidence presented to it in relation to TMR

3.212 As set out above, GEMA has not taken proper account of the evidence presented to it in relation to the inflation series, averaging methodology, holding period, or nominal return source data. In particular, GEMA:

a) wrongly relied on one inflation dataset (CED/CPI) rather than balancing that data set with the CED/RPI dataset;

b) did not consider a range of averaging methodologies, thereby departing from regulatory precedent;

c) appears to have only considered holding periods of 10 years or longer rather than considering shorter, more appropriate holding periods, or at least a range of data; and

d) failed to consider a range of equity return data with different starting periods for the returns dataset, and the downwards biased nature of its source data.

3.213 It is apparent, therefore, that GEMA was unjustifiably selective in its estimation of TMR because it failed to take proper account of all available data. GEMA's conclusions on TMR – identifying a range of 6.25% to 6.75% – show that GEMA did not depart at all from its working assumptions in the SSMC and only departed from its initial assumptions in the Framework Consultation by reducing the range from 6% to 7.5% (CPI equivalent). GEMA was wrong not to take into account

[198] FD, Finance Annex, page 47, paragraph 3.91 [**NOA1/12**].

evidence provided by the Appellant (including via the ENA) throughout the period leading up to the FD.

3.214 In particular, GEMA's reliance on the recommendation in the UKRN Report to inform its estimation of TMR was flawed for two reasons.

3.215 First, GEMA placed too much reliance on the UKRN Report, choosing to rely on the approach set out in that report rather than determining TMR based on the available evidence. As explained by Darren Pettifer in DP1[199], GEMA has continually relied on the recommendations of the UKRN Report to justify its decisions in circumstances where taking into account a wider evidence base supports higher CAPM values. This is yet further evidence of GEMA's selective approach and the propensity to refrain from making upwards adjustments to the CAPM parameters.

3.216 Second, the UKRN recommendation itself is unclear. Although the UKRN Report does recommend that regulators set a TMR of 6% to 7%,[200] the report is unclear as to whether this is on an RPI or CPI basis.

3.217 GEMA sought to clarify this with one of the authors, Professor Wright, who considered that this recommendation was on a CPI basis. However, GEMA did not take account of evidence provided by two of the four authors of the UKRN Report who questioned this view.[201]

3.218 One of the four authors, Phil Burns, noted that the proposed range of 6% to 7% was intended to be a "*modest downward adjustment*"[202] and, as such, had understood the recommendation to refer to real versus RPI (rather than CPI).

3.219 A second of the four authors, Derry Pickford, prepared a paper that was submitted to the Appellant that showed evidence for a TMR of around 6.5% on a real geometric basis, which results in a real TMR range of between 7.2% and 8.2% once the uplift to geometric returns that UKRN and Ofgem used is applied.[203]

3.220 As such, there was no sound basis for GEMA's initial working assumption on TMR, nor for its conclusions on TMR in the FD.

3.221 In conclusion, GEMA made multiple errors in its estimation of TMR and its decision was therefore wrong. Given the fact that this parameter is largely unobservable and therefore uncertain, it was incumbent upon GEMA to take proper account of all relevant evidence to inform its decision. For the reasons given in (a) – (e) above, GEMA has failed to do so. GEMA has made erroneous methodological choices – ignoring evidence which would support a higher TMR – and has made unbalanced judgements when selecting and applying cross-checks to inform its decision.

3.222 GEMA's unjustified selectivity in estimating TMR is one of many factors which has led it to set a materially lower COE than is justified on a proper account of all of the relevant evidence and when balanced judgements are applied (see section E, **Insufficient COE Error**).

GEMA's conclusions at Step 1

3.223 GEMA summarised the conclusions it had reached in Step 1 in Table 11 of the FD, where it drew a comparison with its DD proposals.[204] This is reproduced below for ease of reference.

199 DP1, paragraph 220 onwards.
200 UKRN Report, section 4.4.7 [**NOA1/16**].
201 DP1, paragraph 252(d).
202 UKRN Report, page 48 [**NOA1/16**].
203 DP1, paragraph 231.
204 FD, Finance Annex, page 49, Table 11 [**NOA1/12**].

Table 11: Step-1, CAPM-implied cost of equity at 60% notional gearing

Component	Mid July	Low Dec	Mid Dec	High Dec	Ref	Source
Notional equity beta	0.725	0.694	0.759	0.819	A	July 2020 & Table 9
Total Market Return	6.5%	6.25%	6.5%	6.75%	B	July 2020 & 3.86
Spot risk-free rate	-1.58%	-1.74%	-1.74%	-1.74%	C	July 2020 & Table 7
Forward curve uplift	+0.10%	+0.16%	+0.16%	+0.16%	D	July 2020 & Table 7
Risk Free Rate	-1.48%	-1.58%	-1.58%	-1.58%	E	= C + D
Cost of equity (step 1)	4.3%	3.85%	4.55%	5.24%	F	= E + A * (B - E)

Source: Ofgem analysis

3.224 The Appellant submits that GEMA's CAPM-implied COE at Step 1 was wrong in accordance with section 23D(4) GA86 for the reasons described above and as more particularly described in section F and Annex 1.

3.225 The impact of the CAPM Selectivity error is described in section E, **Insufficient COE Error**.

C. Cross-checks error

3.226 In Step 2 of its process to set the COE, GEMA developed and applied a set of cross-checks to its Step 1 range and used these to reduce the CAPM range.

3.227 This section is divided into two parts: first, the Appellant sets out the background to GEMA's decision in developing and applying these cross-checks and second, the Appellant describes the errors made by GEMA.

3.228 In summary, GEMA's decision on cross-checks was wrong because it is based on an unjustifiably selective approach to the evidence, in which it has repeatedly: (i) placed weight on cross-checks which stakeholders have shown to be flawed; and (ii) failed to give due consideration to the valid alternative cross-checks which stakeholders proposed. GEMA also wrongly elevated cross-checks to the status of "primary evidence" in using them to determine its COE range, which is contrary to well-established regulatory practice. Overall, GEMA has applied a set of flawed and ultimately weak cross-checks which do not validate its conclusions

3.229 In particular, GEMA's application of cross-checks at Step 2 of its process of assessing the COE for RIIO-T2 was wrong for the following six reasons:

a) GEMA was wrong in principle to use the Modigliani-Miller cross-check to inform the Step 2 range;

b) GEMA was wrong in principle to use the Infrastructure funds cross-check to inform the Step 2 range;

c) GEMA should have included additional cross-checks which support a higher end to the plausible COE range;

d) GEMA's use of other cross-checks incorporates market valuations which are noisy (in that they can reflect movements unrelated to the fundamental value of the asset), volatile, and unreliable;

e) GEMA's use of other cross-checks introduces short-term data into its decision on the COE, which is contrary to established regulatory practice and GEMA's own stated policy of using the CAPM based on long-term data; and

f) GEMA's use of cross-checks as primary evidence to establish the COE range was wrong because it contravenes long-standing regulatory practice that the COE should be set based on long-run evidence via the CAPM.

3.230 These errors are material because GEMA has determined that its cross-checks support a COE no higher than 5% (CPIH real), meaning that 'Step 2' acts as a significant constraint on GEMA's overall assessment of the COE for RIIO-T2. A proper consideration of the evidence supports a COE higher than this level for the reasons given in section E - **Insufficient COE Error**. They are also material because it is contrary to well-established regulatory and economic principles to apply flawed cross-checks and not to give due consideration to relevant cross-checks and therefore sets a harmful precedent for future price controls.

3.231 GEMA's decision was therefore wrong within the meaning of section 23D(4) GA86, as explained in section F and described in more detail in Annex 1.

3.232 The Appellant requests that the CMA also reads section 7 of the Cost of Equity Report and section H of DP1 when considering this error.

(1) Background to GEMA's decision

3.233 In the Framework Consultation, GEMA outlined its plans to "*sense-check*"[205] the results of its CAPM estimation by using cross-checks.

3.234 GEMA initially proposed to apply two cross-checks:

a) Market-to-asset ratios (**MARs cross-check**), which GEMA used to infer that "investor expectations of returns are lower – and perhaps substantially lower – than the allowances previously set by Ofgem for RIIO-1 and Ofwat for PR14."[206] and

b) Returns bid by investors in competitions run by GEMA for Offshore Transmission Owner (**OFTO**) assets (**OFTOs cross-check**), which GEMA noted *"corroborates results from the CAPM model"* but cautioned that "*[t]here is not in general a direct read-across from OFTO assets*" due to various factors. In particular, GEMA noted that, in comparison with price controlled utilities, OFTOs have higher levels of gearing, longer-term fixed price contracts, and are not subject to any construction risk.[207]

3.235 In the Framework Decision, GEMA confirmed that it would use these two cross-checks,[208] although it noted that "*Only a minority [of stakeholders] supported cross-referencing the implied costs of equity from competitive tenders for electricity assets (e.g. OFTO tenders)*".[209]

3.236 In the SSMC, GEMA developed four Step 2 cross-checks[210] as follows:

a) **MARs cross-check**: GEMA expanded on its position from the Framework Decision, by stating that a MAR greater than 1 implies that investors are paying a premium to own network assets, which reflects investors' expectations that the return from network ownership is greater than their COE. Having assessed MARs of three publicly-listed water companies (Pennon, Severn Trent and United Utilities), and a range of network company corporate transactions, GEMA concluded that premia over the RAV suggested that "*investors are expecting to earn returns well in excess of their costs of capital*".[211] GEMA accepted that there were grounds for caution when interpreting MARs. First, because information relating to listed share prices could be influenced by wider market "noise" and second, because, in the UKRN Report, Burns suggested that a premium on corporate transactions could, at least in part, reflect a control premium (whereby investors are willing to pay a premium to acquire a majority stake in a business) or a winner's curse (whereby in a private auction sale, the winner of the bid may have overvalued the asset and end up with a loss when the true value of the asset is revealed).

205 Framework Consultation, page 85, paragraph 7.33.6 [**NOA1/2**].
206 Framework Consultation, page 90, paragraph 7.56 [**NOA1/2**].
207 Framework Consultation, page 92, paragraph 7.58 [[**NOA1/2**].
208 Framework Decision, page 56, paragraph 6.42 [**NOA1/3**].
209 Framework Decision, page 55, paragraph 6.35 [**NOA1/3**].
210 SSMC, Finance Annex, page 43, paragraphs 3.118 to 3.149 [**NOA1/5**].
211 SSMC, Finance Annex, page 44, paragraph 3.128 [**NOA1/5**].

b) **OFTOs cross-check**: GEMA noted that the sixth round of tenders for OFTO assets could "*arguably provide additional information that supports the MARs"*.[212] GEMA therefore assessed the weighted average nominal post-tax equity Internal Rate of Return (**IRR**) for multiple winning bidders for OFTO assets and concluded that this supported a COE of around 7% nominal, equivalent to 4% RPI-real, which was in line with the nominal value implied by the CAPM of 6-7%.

c) Professional forecasts from investment managers and advisors (**Investment managers cross-check**): GEMA proposed applying this additional cross-check because it was a forward-looking measure and therefore avoided over-reliance on outturn MARs (which can only be observed in arrears). GEMA acknowledged that the forecasts were most relevant to its TMR estimation rather than a cross-check on the CAPM evidence. GEMA concluded that this cross-check supported the view that the high point of the CAPM-implied range for the COE was potentially too high.

d) Infrastructure fund discount rates (**Infrastructure funds cross-check**): GEMA also proposed to include this cross-check which assessed the average nominal discount rate (cost of equity) used by six London listed closed end funds which invest in private finance initiatives, infrastructure and private utility assets such as OFTOs. GEMA concluded that these discount rates were broadly supportive of its CAPM-implied COE, noting that it took comfort from the fact that the rates had reduced in recent years.

3.237 GEMA explained that the four cross-checks provided "*general support"* for the CAPM implied cost of equity when "*taken in the round*".[213] GEMA acknowledged that there were weaknesses in its approach of applying cross-checks as a means to provide assurance of the CAPM estimates:[214]

> *There is no perfect cross-check to the CAPM, and we reiterate that the CAPM remains a primary tool for estimating the cost of equity. The cross-checks listed above each have benefits and drawbacks. For example, some of these cross-checks will involve assets that are exposed to different risk profiles or gearing levels.*

3.238 The conclusion of GEMA's cross-checks in the SSMC was to narrow the CPIH CAPM implied range:[215]

> *On the basis of these cross-checks, we consider that the conclusion of step 2 is to narrow the CPIH CAPM implied range, from the values presented in Table 13 (3.87 – 5.08%), to 4.0 – 5.0% in CPIH terms. We give weight to the forward-looking UK equity market returns when increasing the lower end to 4% real CPIH, and to the infrastructure fund and OFTO data for the 5% real CPIH upper end.*

3.239 In the SSMD, GEMA suggested that stakeholders supported the concept of cross-checking the CAPM values but had concerns about the proposed methodology:[216]

> *…network companies raised issues with how we have interpreted the data, arguing that different inputs give different results and that some cross-checks are either not relevant or are not appropriate for RIIO-2 (mainly due to risk differences).*

3.240 GEMA largely restated its position from the SSMC as to how the evidence on the four cross-checks should be interpreted.[217] In response to concerns that there is a potential double count if investment manager forecasts were used in both TMR and in narrowing the CAPM-implied range, GEMA developed a new 'cross-check hybrid', called 'CAPM with investment managers' value for

212 SSMC, Finance Annex, page 46, paragraph 3.134 [**NOA1/5**].
213 SSMC, Finance Annex, page 46, paragraph 3.146 [**NOA1/5**].
214 SSMC, Finance Annex, page 49, paragraph 3.145 [**NOA1/5**].
215 SSMC, Finance Annex, page 49, paragraph 3.147 [**NOA1/5**].
216 SSMD, Finance Annex, page 59, paragraph 3.190 [**NOA1/7**].
217 SSMD, Finance Annex, page 58, paragraph 3.186 [**NOA1/7**].

TMR' in addition to the existing four cross-checks.[218] GEMA noted that it was "*open-minded*" about including other cross-checks.[219]

3.241 GEMA concluded that the cross-checks supported the revised CAPM, *"particularly around the 5% CPIH real level"*, noting:[220]

> *It is our view that there is similar pressure on the CAPM implied range to that we noted in December, with the low-end best supported around 4.00% CPIH real and the high-end best supported by 5.60%. A mid-point of 4.8% is, in our view, appropriate.*

3.242 In the DD, GEMA retained the five cross-checks which it had employed in the SSMD, and added a sixth cross-check based on the Modigliani-Miller cost of equity inference.

a) Modigliani-Miller cost of equity inference (**Modigliani-Miller cross-check**): GEMA noted that a cost of capital which strictly increases with gearing (which was the result of its combined assumptions for RFR and TMR, its approach to re-gearing asset betas, and its use of a cost of debt concept which includes allowances for embedded debt and transaction costs) was not consistent with finance theory or with how actual financing models work.[221] GEMA introduced an additional cross-check by assuming a cost of debt of 1.74% (which was GEMA's proposed allowed return on debt), combined with the market based COE and actual gearing to produce an inferred WACC at observed gearing levels, and then re-gearing to 60% assuming that the WACC is invariant to gearing.[222] This produced a COE range of 3.2% - 4.1% (CPIH-real).[223]

b) MARs cross-check: GEMA provided analysis of share prices for Severn Trent, United Utilities and Pennon following Ofwat's Final Determinations in the PR19 price controls in December 2019, arguing that this showed the allowed returns of 4.19% (CPIH-real) to exceed the COE.[224] GEMA referred to work by CEPA which concluded that there was a "joint hypothesis problem" in that observed MAR premia would reflect both outperformance and the difference between the COE and Ofwat's baseline allowed return on equity. GEMA published a stylised model to calculate a "*true cost of equity*" for a given MAR and expected out(under)performance (and vice versa), and used this model to infer that an allowed return on equity of 4.2% represents an upper limit for the water sector and that the same would apply to the energy networks sector, based on its view that the two sectors represent "approximately equal risk".

c) Investment managers cross-check: GEMA updated its SSMD analysis, which resulted in a mean TMR of 7.10% nominal (5.0% CPIH-real) (down from 7.65% nominal in the SSMD).[225]

d) CAPM with investment managers' TMR: GEMA updated its assessment using the average investment managers' TMR of 5.0% (CPIH-real) to produce a COE estimate of 4.3% (CPIH-real).

e) OFTOs cross-check: GEMA updated its SSMD analysis to indicate a COE of 4.9% (CPIH-real).[226]

f) Infrastructure funds cross-check: GEMA updated its SSMD analysis to include 14 infrastructure funds, up from the original six, together with some methodological adjustments to produce an IRR. This produced an average of 4.2% (CPIH-real).[227]

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218 SSMD, Finance Annex, page 65, Table 10 [**NOA1/7**].
219 SSMD, Finance Annex, page 65, paragraph 3.230 [**NOA1/7**].
220 SSMD, Finance Annex, page 66, paragraph 3.233 [**NOA1/7**].
221 DD, Finance Annex, page 54, paragraphs 3.70 to 3.71 [**NOA1/9**].
222 DD, Finance Annex, pages 54 to 55, paragraphs 3.73 to 3.74 [**NOA1/9**].
223 DD, Finance Annex, page 64, Table 24 [**NOA1/9**].
224 DD, Finance Annex, pages 56 to 57, paragraphs 3.78 to 3.83 [**NOA1/9**].
225 DD, Finance Annex, page 62, Table 23 [**NOA1/9**].
226 DD, Finance Annex, page 64, Table 24 [**NOA1/9**].
227 DD, Finance Annex, page 64, Table 24 [**NOA1/9**].

3.243 GEMA concluded that its Step 2 cross-checks produced a COE range of 3.60% to 4.80% (CPIH-real), lower than its Step 1 (CAPM) COE range of 3.64% to 5.00% (CPIH-real). GEMA therefore used its Step 2 cross-checks to reduce its estimate of the COE downwards from 4.3% to 4.2%, based on the mid-point of the respective ranges.[228]

3.244 In the FD, GEMA presented new evidence only in relation to the MARs cross-check, where it included a graph showing the share price reaction for two listed energy companies, National Grid and SSE, following publication of the CMA's PR19 PFs. GEMA argued that *"this indicates that investors in SSE and NG interpreted CMA's PFs as a positive, and unexpected, signal for higher returns."*[229]

3.245 GEMA referred to five of the six cross-checks it had undertaken at DD, but did not refer to the CAPM with investment managers' TMR cross-check. The Appellant therefore infers that this cross-check did not inform GEMA's Step 2 assessment in the FD.

3.246 GEMA concluded that its Step 2 cross-checks produced a COE range of 3.8% - 5.0% (CPIH-real).[230] This was a reduction from the Step 1 (CAPM) range of 3.85% - 5.24%.

3.247 GEMA noted that it had used *"more discretion to adjust the high end than the low end"* (a reduction of 0.05% at the low end, but 0.24% at the high end). GEMA stated that its cross-checks produced a mid-point of 4.4%, lower than the Step 1 (CAPM) mid-point of 4.55%, and therefore potentially supported a lower COE. However, GEMA decided not to adjust the Step 1 mid-point downwards, in view of stakeholder representations that its cross-checks were not as strong as it believed, and that a downwards adjustment would not be a justified use of regulatory discretion.[231]

3.248 The Appellant's position on cross-checks during the RIIO-2 consultation process is described in further detail in section H of DP1. In summary, the Appellant agreed with the principle of sense-checking the COE produced by the CAPM, but consistently pointed out flaws with the cross-checks GEMA proposed to apply, and put forward better-justified alternatives:

a) In response to the Framework Consultation, the Appellant noted weaknesses with the MARs and OFTOs cross-checks which GEMA proposed to use, and suggested that "*estimates of cost of equity based on the independent and published DGM for listed utilities"* would be a more "direct" cross-check.[232]

b) In response to the SSMC, the Appellant highlighted flaws with GEMA's proposed cross-checks (MARs, OFTOs, investment managers and infrastructure funds), which meant that *"none of [them]…provide meaningful cross-checks of the required cost of equity for energy networks"*.[233] The Appellant proposed instead that GEMA should give weight to: (i) DGM estimates for individual listed utilities; (ii) the Asset Risk Premium to Debt Risk Premium differential, and (iii) regulatory precedent.

c) In the business plan, the Appellant reiterated its support for the three alternative cross-checks it had proposed in response to the SSMC, and provided updated analysis from Oxera on Dividend Growth Model (**DGM**) estimates for individual listed utilities and the Asset Risk Premium to Debt Risk Premium differential.[234]

3.249 In response to the DD, the Appellant provided detailed commentary on each of GEMA's proposed cross-checks, and concluded that *"all of the cross-checks either contain errors in their application or are of limited or no relevance."*[235] The Appellant provided additional evidence in support of its

228 DD, Finance Annex, page 64, Table 24 [**NOA1/9**].
229 FD, Finance Annex, page 53, paragraph 3.118 [**NOA1/12**].
230 FD, Finance Annex, page 55, paragraph 3.121 [**NOA1/12**].
231 FD, Finance Annex, page 55, paragraph 3.121 [**NOA1/12**].
232 NG Response to Framework Consultation, 2 May 2018, page 36 [**DP1/3**].
233 NG Response to SSMC, Finance Annex, March 2019, page 59 [**DP1/4**].
234 NGG Business Plan Submission, A22.01 Finance Annex, December 2019, page 45 [**DP1/2**].
235 NGG Response to GEMA's Draft Determination – Finance Annex, page 61 [**DP1/5**].

proposed ARP vs DRP differential cross-check, including new analysis by Oxera for the ENA which addressed concerns with this proposed cross-check raised by GEMA at SSMD stage.[236]

3.250 A summary of the development of GEMA's cross-checks during the RIIO-2 process is set out in Figure 6 below.

Figure 6: Evolution of GEMA's cross-checks during the RIIO-2 process[237]

	FWC Mar 2018	FWD Jul 2018	SSMC Dec 2018	SSMD May 2019	DD Jul 2020	FD Dec 2020
Step 2 range	**N/A**	**N/A**	**4.0%-5.0%**	**4.0%-5.6%**	**3.6%-4.8%**	**3.8%-5.0%**
MARs	✓	✓	✓	✓	≤4.2%	Linked to bottom end of CAPM-range
OFTOs	✓ (and Thames Tideway Tunnel)	✓	✓	5.1%	4.9%	Used to infer high end of 5.0%
Investment managers' TMR forecasts			✓	5.5%	5.0%	Used to infer high end of 5.0%
CAPM with investment managers' TMR				4.0%	4.3%	Does not appear to be used at FD
Infrastructure fund discount rates			✓	5.4%	4.2%	Linked to bottom end of CAPM-range
Modigliani-Miller inference					3.2%-4.1%	Linked to bottom end of CAPM-range

Source: Frontier Economics – Cost of Equity Report, Figure 12

3.251 Throughout the price control process GEMA failed to have proper regard to the views of stakeholders, including the Appellant, on the use of cross-checks when setting the COE for RIIO-2. Further details are provided in section H of DP1.

(2) Errors in cross-checks

3.252 The reasons why GEMA's Step 2 cross-checks were wrong are set out in (a) – (f) below.

(a) GEMA was wrong in principle to use the Modigliani-Miller cross-check to inform the Step 2 range

3.253 GEMA calculates the WACC at the observed actual gearing level of the GB listed utilities. Then, in reliance on the premise established by the Modigliani-Miller theory that the WACC should be independent of the gearing level, GEMA changes the gearing level to 60%, solving for the COE while holding the cost of debt constant.

236 NGG Response to GEMA's Draft Determination – Finance Annex, pages 62 to 64 [**DP1/5**].

237 Figures are presented in CPIH-real terms. Check marks indicate that a cross-check was proposed but an estimate was not provided. The methodology used to estimate some cross-checks evolves between documents.

3.254 GEMA's application of the Modigliani-Miller cross-check is wrong in principle.[238] This is because the Modigliani-Miller theory is also wrong because it has used the regulatory concept of the "allowed cost of debt". This regulatory measure of debt cost includes allowances for embedded debt and transaction costs. Using the allowed cost of debt is the approximate equivalent of having a default premium of 2.6%, which is inconsistent with the Modigliani-Miller theory assumption that the default premium and transaction costs are both zero. Under these circumstances, the Modigliani-Miller theory will not hold, and the result is a strong increase in WACC as gearing increases.

3.255 As a result, it is clear that the Modigliani-Miller gearing irrelevance proposition will not apply in respect of GEMA's proposed COE. GEMA's attempt to force the Modigliani-Miller gearing irrelevance proposition to apply delivers meaningless results.

3.256 Consequently, the Modigliani-Miller cost of equity inference cross-check was wrong in that it wrongly purports to lend support to the lower end of GEMA's CAPM range. GEMA was therefore wrong to have used this as a cross-check of the CAPM estimate of the COE.

(b) GEMA was wrong in principle to use the Infrastructure funds cross-check to inform the Step 2 range

3.257 GEMA should not have used the Infrastructure funds cross-check to inform the Step 2 range because this involves deploying non-comparable and unreliable data. This error is then compounded by GEMA applying conceptually wrong manipulations to the data.

3.258 First, the discount rates for the 14 funds on which GEMA based its analysis could in each case represent one of three distinct concepts:

a) the discount rate that fund managers use to discount cash flow in order to inform the valuation of the assets in their portfolio;

b) the discount rate that fund managers use as a benchmark to judge the performance of the assets in the portfolio; or

c) the discount rate that the fund states that it expects to achieve for clients investing in the fund.

3.259 As explained in section 7.3.21 of the Cost of Equity Report, only the first of these three concepts can have any relevance as a cross-check for the COE of energy networks, and even then, only if the discount rate in question is that used by funds to value the equity of regulated utilities with similar risk profiles to energy networks in the fund.

3.260 The second and third concepts are irrelevant as they provide insights on the cost of capital of the fund owner, not the underlying assets.

3.261 Importantly, GEMA did not provide verifiable sources for the discount rates it used, and it is not clear that all of the underlying data relates to the first concept. There must therefore be considerable doubt that the COE estimate produced is reliable.

3.262 Second, the Cost of Equity Report reveals that: (i) descriptions in public accounts indicate that the funds on which GEMA's analysis is based hold a mixture of equity and debt instruments; and (ii) these funds do not exclusively hold regulated utilities.

3.263 Consequently, there is no reason to believe that the risk profile of these funds' portfolios will be in line with the risk profile of energy networks, and indeed it is likely to be lower.[239]

3.264 Third, GEMA's further downward adjustment of the infrastructure fund discount rate into IRRs that incorporate the expected outperformance is flawed. This is because GEMA has assumed that

[238] See Cost of Equity Report, Section 7.1 [**MH1/1**].
[239] Cost of Equity Report, paragraphs 7.3.26 to 7.3.27 [**MH1/1**].

fund managers would consider expected outperformance of assets as a reduction to the discount rate in the valuation calculations, but this is contrary to standard corporate finance practice. In fact, any perceived "outperformance" should be accounted for in valuation as extra cashflows rather than a reduction to the discount rate.[240]

3.265 For all of these reasons, the infrastructure fund discount rates cross-check was fundamentally flawed and unreliable, and wrongly purports to lend support to the lower end of GEMA's CAPM range. GEMA was therefore wrong to use this as a cross-check of the CAPM estimate of the COE.

(c) GEMA should have included additional cross-checks which would have supported a higher end to the plausible COE range

3.266 During the course of consultation at RIIO-2, the Appellant and other stakeholders proposed a range of additional cross-checks which GEMA should take into account, as described in section H of DP1.

3.267 GEMA failed to take proper account of these other cross-checks without offering any sound justification for excluding them. The cross-checks proposed support a markedly higher upper bound for the COE than the other cross-checks which GEMA selected (and are comfortably above the upper bound from GEMA's Step 1 assessment in the FD of 5.24%).

3.268 By failing to take proper account of the full set of relevant cross-checks, GEMA was left with a censored subset of the possible cross-checks that leads to a downward biased assessment of the plausible range. This was a clear error in GEMA's Step 2 methodology for estimating the COE.

3.269 First, GEMA should have had regard to and applied a DGM cross-check. Although stakeholders (including the Appellant) repeatedly proposed the use of DGM as a cross-check for the COE during the RIIO-2 consultation process, GEMA's only substantive engagement was its comment at the SSMD stage that the use of analyst forecasts may introduce bias.[241] GEMA did not engage with stakeholders' proposals that the DGM should be used as a cross-check at the DD or FD stages.

3.270 DGM is a well-established short-term, forward-looking, market-implied COE estimation methodology, which can be directly applied on individual shares in the asset beta sample adopted in Step 1. This is a much more robust version of the short-term market-implied forward looking estimate than any others on GEMA's list and is a suitable cross-check because:[242]

a) The DGM provides similar evidence to the MARs cross-check and uses the same share price information, but does not require explicit assumptions to be made on outperformance.

b) The DGM provides a similar perspective to the OFTO cross-check, but with much better alignment of underlying assets, removing concerns over differential risk.

c) The DGM provides a forward-looking COE estimate, but is derived from actual share prices so does not suffer from the issues associated with survey evidence and subjectivity of views (unlike the investment managers' TMR forecasts).

3.271 The Cost of Equity Report presents a DGM analysis on the five companies considered in GEMA's asset beta analysis for three dividend scenarios (a base case, a low dividend scenario, and a high dividend scenario). The estimates of the COE are higher than GEMA's point estimate of 4.55% across all scenarios.

3.272 This means that the DGM analysis supports a much higher range than GEMA's Step 2 COE range of 3.8%-5.0%, with a top end of the range in the base case scenario of 7.3% (CPIH-real).[243] GEMA's failure to apply this cross-check is further evidence of it being unduly selective in its

240 Cost of Equity Report, paragraphs 7.3.28 to 7.3.30 [**MH1/1**].
241 SSMD, Finance Annex, paragraphs 3.224 and 3.87 [**NOA1/7**].
242 Cost of Equity Report, paragraph 7.5.7 onwards [**MH1/1**].
243 Cost of Equity Report, paragraphs 7.5.13 to 7.5.15 [**MH1/1**].

approach to estimating the COE and omitting to consider relevant evidence which supports a higher range.

3.273 Second, GEMA should have had regard to and applied evidence on the long-term profitability of benchmarks.

3.274 The primary method and cross-checks which GEMA has used to estimate the COE focus on shareholder returns, but accounting information on companies' profitability also provides useful evidence as a cross-check for the reasons given in paragraphs 7.5.18 – 7.5.26 of the Cost of Equity Report. Essentially, this is because the allowed return on equity set by the regulator is the key determinant of the profitability of regulated utilities, so it makes sense to cross-check the proposed COE against the trend in achieved profitability levels of companies in the equity market in general. Return on equity (**ROE**) is also a well-established and well-understood financial metric, which measures a return for a company on an annual basis. It is widely published for all publicly listed companies, with a set of standard accounting rules on how this can be calculated.

3.275 Frontier Economics assessed the historic return on equity for the FTSE All Share and the S&P 500 indices over the period 2002-2020, and concludes in the Cost of Equity Report that the 20-year average ROE in the UK market has been higher than 8% (CPIH-real), and this number has not decreased in the past ten years, despite the RFR falling over the same period (with similar findings in respect of the US).[244] The level of allowed ROE is the biggest driver of profit for regulated entities. Frontier Economics' analysis suggests that a significant change, as made by GEMA in the FD, may be out of step with the wider equity market.

3.276 This cross-check supports a much higher range than GEMA's Step 2 COE range of 3.8%-5.0%. GEMA's failure to apply this cross-check is consistent with it being unduly selective in its approach to estimating the COE.

3.277 Third, GEMA should have had regard to and applied an Asset Risk Premium – Debt Risk Premium comparison (**ARP-DRP**) cross-check. The objections which GEMA raised against use of the ARP-DRP cross-check are explained and addressed in section H of DP1. In essence, GEMA's principal concern seems to have been that the ARP-DRP analysis relies on regulatory precedent from previous price controls, and that subsequent market changes undermine the value of past precedent as comparators. However, this overlooks the key feature of the ARP-DRP cross-check, which is that it relies mainly on observed market parameters.

3.278 As explained in paragraphs 7.5.27 – 7.5.32 of the Cost of Equity Report, this cross-check involves comparing the difference between the asset risk premium (ARP, the expected excess return from holding risky assets compared to riskless assets) and the debt risk premium (DRP, the expected excess return from holding risky debt relative to riskless assets) implied by GEMA's RIIO-2 FD with ARP-DRP differentials derived from a combination of regulatory precedent and market evidence.

3.279 Analysis undertaken by Oxera estimated that the ARP-DRP differential implied by GEMA's DD (1.84%) was low compared to the ARP-DRP differentials implied by UK energy bonds derived from a combination of market evidence and regulatory precedent in the six months prior to the DD.[245]

3.280 In paragraph 7.532 of the Cost of Equity Report, Frontier Economics concludes that the ARP-DRP differential indicated by GEMA's proposed COE is out of line with market evidence. Frontier Economics also finds that although GEMA's FD contained a higher estimate of the COE than the DD, this does not adversely affect the conclusion that the ARP-DRP differential suggests GEMA's point estimate of 4.55% for the COE was too low.[246]

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244 Cost of Equity Report, paragraphs 7.5.21 to 7.5.24 [**MH1/1**].

245 See Oxera, 4 September 2020, Asset risk premium relative to debt risk premium – prepared for the Energy Networks Association [**DP1/42**]; and Oxera, 25 March 2019, Risk premium on assets relative to debt: Benchmarking the CAPM-implied equity returns – prepared for the Energy Networks Association [**DP1/41**].

246 Cost of Equity Report, paragraph 7.5.14 [**MH1/1**].

3.281 When a broader set of relevant cross-checks is applied, this supports a higher range for the COE than that assessed by GEMA. The analysis demonstrates that GEMA's methodology was unduly selective and that GEMA failed to take proper account of the range of relevant evidence at Step 2, and to properly inquire into the relevant issues.

(d) GEMA's use of other cross-checks incorporate market valuations which are noisy (in that they can reflect movements unrelated to the fundamental value of the asset), volatile, and unreliable

3.282 GEMA's cross-checks rely on short-term, forward-looking market-implied COE, which in the current economic environment is prone to be lower than the longer-term estimate produced by the CAPM in Step 1.

3.283 While these cross-checks should not necessarily be excluded, in the current capital market environment with high liquidity and high valuation, they should be considered only to inform the lower end of the plausible COE range, and even then only imperfectly.

3.284 First, in respect of the MARs cross-check, in the FD GEMA considers that this cross-check informs the plausible bottom end of the COE range, because it implies CPIH-real returns at or below 4.2%. However, GEMA is wrong to infer that a MAR > 1 implies that the allowed return on equity is higher than the true COE, for the reasons set out in the UKRN report.[247] Moreover, for the reasons given in paragraphs 7.4.4 – 7.4.14 of the Cost of Equity Report:

a) Market valuations incorporate a lot of noise (in that they can reflect movements unrelated to the fundamental value of the asset) and elements that are not enduring and/or not explainable, and may simply reflect short-term changes in market sentiment, general market momentum and liquidity conditions. Estimating an implied COE by assuming short-term share prices accurately reflect the long-term fundamental value of an asset can be risky and is therefore unlikely to be suitable for regulatory price-setting processes.[248]

b) The reliability of MARs as a cross-check is further questioned by the need to value non-regulated businesses and/or regulated businesses in other jurisdictions that may be owned by the listed entities. In order to value the relevant comparator, one must first value and remove these irrelevant elements, which requires careful analysis and will be sensitive to assumptions.[249]

c) In its recent cost of capital consultation for the PR19 Redeterminations, the CMA "*remain[ed] cautious about using market prices to determine the point estimate for the cost of capital*", noting that the MARs from quoted water companies were "*not sufficient evidence of the WACC estimate's appropriateness for the entire water sector*".[250] By the same token, there is even more reason to question the use of MARs for a small subset of water companies in informing on allowed returns for energy networks that are not subject to the same regulatory regime or business risks.[251]

d) GEMA's MAR analysis also makes assumptions about the extent of outperformance being anticipated by investors, and the implied COE in this cross-check is directly dependent on how much outperformance GEMA assumes. It is highly speculative for GEMA to suggest that an implied COE can be calculated by assuming MAR = 1 while assuming certain levels of outperformance.[252]

3.285 Second, as regards the OFTOs cross-check, in the FD GEMA has relied on the OFTO-implied equity IRR cross-check undertaken at DD as one of two cross-checks (along with investment managers' TMR forecasts) which imply an upper bound on equity returns of 5%. As a bid return,

247 UKRN Report, Section 6 [**NOA1/16**].
248 Cost of Equity Report, paragraph 7.4.8 [**MH1/1**].
249 Cost of Equity Report, paragraph 7.4.10 [**MH1/1**].
250 PR19 Aiming Up Working Paper, paragraph 91 [**NOA1/18**].
251 Cost of Equity Report, paragraph 7.4.11 [**MH1/1**].
252 Cost of Equity Report, paragraph 7.4.9 [**MH1/1**].

this estimate could include elements of the bidder's valuation which are unrelated to the COE, and there is no way to untangle these.[253] Moreover:

a) GEMA recognises that OFTO gearing levels are higher than RIIO-2 notional gearing levels, and that the risk profile of OFTOs is lower than regulated utilities. GEMA assumes these will roughly cancel each other out, but does not substantiate this assumption.

b) No information is in the public domain to validate or otherwise analyse these returns.

3.286 As the Cost of Equity Report concludes, an OFTO-implied equity IRR has limited value for the reasons listed above.[254] Given the unverifiable nature of the data and the lack of direct comparability to energy networks, this cross-check should not be used to constrain the estimates derived from using longer-term methodology and data at Step 1, and GEMA should not have used it to infer the upper bound of its COE range of 5.0%.

3.287 Third, as regards the Investment managers cross-check, in the FD, GEMA appears to rely on its DD conclusion that this cross-check implied a COE of 5.0% as support for the upper bound of its range. Conceptually, this is a cross-check only of TMR, and not of the appropriate COE for energy networks. Given that GEMA appears to have excluded this cross-check when producing its CAPM TMR estimate in Step 1, it is not logical for GEMA to employ it instead as a cross-check for the COE.

3.288 In addition, there are several conceptual weaknesses which limit the usefulness of investment managers' TMR forecasts as a cross-check for TMR as explained in section 7.4.25 of the Cost of Equity Report, namely:[255]

a) The evidence which GEMA relies on is subjective stated preference, rather than revealed preference, so is prone to various biases. It should be regarded as no more accurate than survey evidence, about which regulators have traditionally been (rightly) sceptical.

b) The evidence is likely to be downwards-biased given the basis on which it is generated. These estimates are used by investment managers to provide prudent estimates of future returns to existing or prospective clients, and they therefore reflect the regulatory framework and the danger of overpromising on future returns / mis-selling.

3.289 Furthermore, GEMA's dataset was incomplete and downwards-biased.[256] GEMA's dataset cuts off at December 2019, but a number of investment managers included in GEMA's dataset have published more recent forecasts which point towards higher values.[257]

3.290 For the reasons above, the Investment managers cross-check was not a robust cross-check for the COE. GEMA was therefore wrong to use this cross-check to infer the upper bound of its COE range of 5.0%.

(e) GEMA's use of other cross-checks introduces short-term data into its decision on the COE, which is contrary to established regulatory practice and GEMA's own stated policy of using the CAPM based on long-term data

3.291 Several of the cross-checks which GEMA employed at FD result in short-term evidence being relied on to estimate the COE range, despite GEMA expressly stating that it would follow the UKRN Report's recommendation of using the CAPM based on long-term data to set the COE.[258] In particular:

253 Cost of Equity Report, paragraphs 7.4.17 [**MH1/1**].
254 Cost of Equity Report, paragraph 7.4.21 [**MH1/1**].
255 Cost of Equity Report, paragraphs 7.4.25 [**MH1/1**].
256 Cost of Equity Report, paragraphs 7.4.27 [**MH1/1**].
257 See for example the NGG Response to GEMA's Draft Determinations, Finance Annex, pages 140-142 [**DP1/5**]; and Oxera, 4 September 2020, The cost of equity for RIIO-2 Q3 2020 update, Section A2.4 [**DP1/8**].
258 Framework Consultation, paragraph 7.32 [**NOA1/2**].

a) The MARs cross-check involves a short-term market-implied approach to estimating the forward-looking COE, and the data is liable to be volatile and cyclical. If there is value in using a cross-check which takes account of current market conditions and forward-looking implied discount rates then the DGM provides more robust evidence, as outlined above;

b) The OFTOs cross-check is similarly short-term, with IRRs available only for the period since 2011 when GEMA began managing the competitive tender process through which offshore electricity transmission licences are granted;

c) Investment managers' TMR forecasts are also likely to reflect short-run market sentiment, which is likely to underestimate the COE in the current market environment and give more volatile results from one price control to the next.

3.292 In allowing cross-checks based on short-term data to influence its chosen range for the COE, GEMA was contravening without justification the UKRN Report's recommendation to estimate the COE using the CAPM, and based on long-term data.[259] This is inconsistent with GEMA's consistently-stated position that it was seeking to take a "long-horizon approach" to setting the cost of capital.[260]

(f) GEMA's use of cross-checks as primary evidence to establish the COE range was wrong because it contravenes long-standing regulatory practice that the COE should be set based on long-run evidence via the CAPM

3.293 In the FD, GEMA concluded that its COE range should be set at 3.80% to 5.00%, which was the range produced by its Step 2 cross-checks, rather than the range produced by the CAPM at Step 1. GEMA also stated that "equity returns above 5% are not supported by any of the six cross-checks we presented at DDs."[261]

3.294 As the Cost of Equity Report notes, GEMA promoted its Step 2 cross-checks to the status of primary evidence, by using them "*to determine (not just check) allowed equity returns (i.e. the Step 2 range over-riding the Step 1 range to represent Ofgem's preferred cost of equity range)*."[262]

3.295 GEMA's use of cross-checks as primary evidence is wrong in principle, because no cross-check is as robust or reliable a source of evidence as a proper CAPM estimation of the cost of equity.

3.296 Furthermore, using cross-checks as primary evidence will have several negative consequences, which are discussed further in the Cost of Equity Report,[263] but in summary:

a) GEMA's cross-checks rely on short-term, forward-looking, market-implied COE which, in the current low risk-free rate part of the economic cycle, is prone to be lower than the estimate derived in Step 1 based on longer term data. Use of short run measures would wash a combination of "market sentiment" and "noise" (in that the data can reflect movements unrelated to the fundamental value of the asset) into the regulatory determinations, weakening stability and predictability and harming investor confidence. It is longstanding regulatory practice in the UK not to rely on such evidence as a primary source of evidence, and GEMA's approach departed from regulatory precedent without justification.

b) Including volatile and potentially contradictory cross-checks as primary evidence will introduce an additional layer of regulatory discretion in the calculation of the COE, which will further undermine investor confidence.

259 UKRN Report, recommendations 1 and 2 [**NOA1/16**].
260 See for example SSMD, Finance Annex, paragraph 3.40 [**NOA1/7**].
261 FD, Finance Annex, paragraph 3.113 [**NOA1/12**].
262 Cost of Equity Report, paragraphs 7.7.8 [**MH1/1**].
263 Cost of Equity Report, Section 7.7 [**MH1/1**].

3.297 These reasons support the well-established regulatory consensus that the CAPM should be used to set the COE, and GEMA's decision on cross-checks was wrong in departing from that consensus without justification.

3.298 In conclusion, GEMA has made multiple errors in its Step 2 cross-checks and its decision was therefore wrong. Given the fact that 'Step 2' acts as a significant constraint on GEMA's overall assessment of the COE for RIIO-T2 it was incumbent upon GEMA to take proper account of all of the evidence when developing cross-checks and to apply relevant cross-checks. For the reasons given in (a) – (f) above, GEMA has failed to do so. Instead, GEMA has applied a set of flawed and ultimately weak cross-checks which do not validate its conclusions.

3.299 GEMA's errors in developing and applying cross-checks is one of many factors which has led it to set a materially lower COE than is justified (see section E, **Insufficient COE Error**).

D. Aiming up error

3.300 "Aiming up" is the well-established practice of choosing a point estimate for the COE which is above the mid-point of the best estimate for the COE range.

3.301 GEMA decided not to aim up when selecting its point estimate for RIIO-2 so did not make an aiming up adjustment at Step 3. In effect, this meant GEMA "aimed straight" within its Step 1 COE range.

3.302 This section is divided into two parts: first, the Appellant sets out the background to GEMA's decision not to aim up and second, the Appellant describes the errors in GEMA's decision.

3.303 In summary, GEMA's decision on aiming up was wrong because it was unjustified and harmful.

3.304 GEMA's decision not to aim up was **unjustified** because:

a) it was wrong not to have due regard to the weight of regulatory precedent which supports aiming up;

b) it was wrong to characterise aiming up as a matter of regulatory discretion and not to take proper account of the evidence which supports aiming up;

c) the decision not to aim up was poorly reasoned and relied on flawed evidence; and

d) it was wrong to assume that the conditions under which aiming up is needed to prevent consumer harm from underinvestment are not present in RIIO-2.

3.305 GEMA's decision not to aim up was **harmful** because it will undermine companies' incentives to invest, it will undermine investor confidence and will therefore materially harm existing and future consumers.

3.306 The consequences of GEMA's failure to aim up are material because this is a significant contributing factor to GEMA setting the COE for RIIO-2 which is erroneously low and therefore insufficient (see also section E - **Insufficient COE Error**). Moreover, the failure to aim up was an unjustified departure from established regulatory and economic principles and sets a harmful precedent for future price controls. In doing so, GEMA has failed to give proper consideration to the harmful effects that aiming up is intended to address to avoid the COE being set too low, in particular the adverse effects on investment and resulting harm to consumers. This would be an error in any price control but is particularly problematic for RIIO-2 given the scale and complexity of investment required to put the UK on a pathway to delivering Net Zero.

3.307 GEMA's decision was therefore wrong within the meaning of section 23D(4) GA86, as explained in section F and described in more detail in Annex 1.

3.308 The Appellant therefore seeks the relief identified in section G.

3.309 The Appellant requests that the CMA reads section 8 of the Cost of Equity Report, NS1 and section I of DP1 when considering this error.

(1) Background to the decision

3.310 From a very early stage in the price control process, GEMA maintained that it would not aim up when setting the COE for RIIO-T2. This was despite the widely recognised regulatory precedent that aiming up is a "*simple and compelling*"[264] way of dealing with the risk of estimation or forecasting errors in setting the CAPM parameters, and the risk of setting the COE too low. As Frontier Economics explain in the Cost of Equity Report, the COE for a future price control period *"cannot be known with certainty; it can only be estimated with an (often significant) margin of error*".[265] This is why it is important for regulators to aim up.

3.311 In the Framework Consultation, GEMA acknowledged an element of this risk but did not discuss the broader reasons for aiming up. It proposed not to aim up when setting the COE for RIIO-T2:[266]

> *We propose to incorporate market rates within our CAPM estimation and to avoid 'aiming up' on the risk-free rate, or other individual CAPM parameters as a means of dealing with estimation or forecasting error.*

3.312 The choice not to aim up was in contrast to its approach for other recommendations included in the UKRN report, which GEMA adopted in the Framework Consultation. GEMA provided no explicit reasoning on the justification or the merits of this approach at this stage. However, the implication was that its purported reliance on 'market' evidence would remove the need to aim up.

3.313 Having made clear its intent not to aim up in the Framework Consultation, GEMA was immovable on this point throughout the price control process (although its justifications changed as the process went on). GEMA's approach to the issue was consistent with that described in sections B and C above in that it was focused on setting a low COE for RIIO-2. This conclusion is supported by GEMA's reference in the Framework Consultation to how its approach would "avoid" aiming up.

3.314 GEMA made no specific references to aiming up in setting the overall point estimate for the COE in its Framework Decision or in the SSMC. In response to the SSMC, the ENA (on behalf of the Appellant and its other members) submitted a 2019 report from Frontier Economics (**FE 2019 Report**) which provided a detailed explanation of the rationale for aiming up and the risks of not doing so.[267] This highlighted evidence from a number of previous reports and academic papers that concluded that aiming up was the optimal response when setting a point estimate for the COE. Frontier Economics summarise this evidence in the Cost of Equity Report, identifying that:[268]

a) Wright, Mason and Miles (2003) emphasised that not only was aiming up above the mid-point of the range optimal but it was also optimal to aim high due to the high societal cost of a lack of investment;

b) a paper by Dobbs (2011) found that where the allowed WACC applies to new and sunk investments (which it does for energy networks) substantial aiming up above the 75th percentile was optimal and that, as demand becomes more inelastic, it is optimal to aim higher still (which, as Frontier Economics explain, is the case for energy networks because a change in prices leads to only a small change in demand); and

264 Cost of Equity Report, page 95, Section 8.3 [**MH1/1**].
265 Cost of Equity Report, page 95, Section 8.3.2 [**MH1/1**].
266 Framework Consultation, page 126, Appendix 2 [**NOA1/2**].
267 A copy of this report is exhibited to the Cost of Equity Report at [**MH1/3.1.31**].
268 Cost of Equity Report, page 95, Section 8.3 [**MH1/1**].

c) the UKRN Report found that regulators should aim up to the 90th percentile for new investments but should not aim up for sunk investments.

3.315 The FE 2019 Report concluded that the evidence supported the need to aim up for RIIO-2.

3.316 This conclusion was supported by all network companies which emphasised that GEMA was departing from "*a well-understood and longstanding practice of aiming up"* and that to do so would be wrong given that:[269]

> *…the consequences of setting the allowance too low are very severe, but the consequences of setting the allowance too high are nowhere near as severe. It is therefore appropriate to err on the high side.*

3.317 In the SSMD, GEMA acknowledged these arguments but stated that, in its view, the CMA precedents merely *"showed a range of decisions"* and the CMA had *"explained its decision for its chosen WACC percentile, based on the relevant circumstances"*.[270] On this basis, GEMA considered that choosing a point estimate was a decision that was "*subject to regulatory discretion*".[271]

3.318 GEMA also noted that the argument to aim up rests upon a number of "*subjective assumptions*", which included:

> *First, the range itself must be relatively accurate at both the high and low ends. Second, the cost of underinvestment and over-remuneration need to each be estimated accurately….Third, our proposal to cross-check CAPM against four other investor return benchmarks may in fact better capture investors true expectations. To aim-up after considering these cross-checks may lead to a double-count.*

3.319 In the DD, GEMA maintained its view that aiming up was unnecessary. GEMA sought to diminish the relevance of the UKRN Report, because the UKRN Report had concluded that the case for aiming up might be limited and aiming up might only need to be small. GEMA also implied that the CMA's NATS PFs were not relevant because they were sector specific:[272]

> *The UKRN Study found that there is a legitimate, albeit limited, case for aiming up, hence justifying one reason why the allowed return could differ from the cost of equity. In the SSMD, we considered stakeholder arguments on this, noting that we were not convinced. The CMA, in its provisional findings for NERL, also considered arguments for departing from the mid-point of its cost of capital range, including the case for aiming up, and potential asymmetries in the broader price control settlement. In its provisional findings for NERL, the CMA did not take a view with regards to the appropriate approaches in other sectors. However, we note that the CMA's view aligns with the UKRN Study: that aiming up might only need to be small to be effective given that it would apply to assets already in place as well as promoting new investments.*

3.320 GEMA also stated its view that, conceptually, there was a "*major flaw*" in the aiming up argument that "*doing so will lead to more investment*".[273] In the DD, GEMA did not further explain the basis for the view that there was a major flaw in the argument, but only noted "*we are not convinced this is necessarily the case*".[274]

3.321 Nonetheless, GEMA set out its view that it saw no reason – as a matter of principle – to aim up unless there were clear concerns with the accuracy of the range:[275]

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269 SSMD, Finance Annex, page 69, paragraph 3.252 [**NOA1/7**].
270 SSMD Finance Annex, page 72, 3.276 [**NOA1/7**].
271 SSMD Finance Annex, page 72, paragraphs 3.275 to 276 [**NOA1/7**].
272 DD, Finance Annex, page 80, paragraph 3.145 [**NOA 1/9**].
273 DD, Finance Annex, page 80, paragraph 3.146 [**NOA 1/9**].
274 DD, Finance Annex, page 80, paragraph 3.146 [**NOA 1/9**].
275 DD, Finance Annex, page 199 [**NOA1/9**].

It is not clear to us why it would be appropriate to aim to the top half of a given range, unless we could clearly identify issues that are not captured within the range or that it was somehow biased.

3.322 In its response to the DD, the Appellant stated its disagreement with GEMA's decision not to aim up in its allowed COE estimate and pointed to an updated report prepared by Frontier Economics for the ENA in September 2020. This concluded that GEMA's proposed approach was *"a departure from well-established regulatory and CMA precedent"* which would risk material harm arising from under-investment.[276]

3.323 In the FD, GEMA listed seven reasons to support its decision not to aim up. These are described in section 8.2 of the Cost of Equity Report and summarised below.[277]

3.324 Five of these reasons seek to justify GEMA's decision based on the CMA's previous practice and statements:

a) First, GEMA pointed to the CMA's NATS PFs as evidence that the decision to aim up is "*case specific*" and concludes that "*therefore, to set allowed returns at some other level for RIIO-2 is not necessarily wrong*".[278]

b) Second, GEMA sought to distinguish the CMA's PR19 PFs on the basis that they *"appear to place significant weight on an assumption that there is asymmetric downside risk within the PR19 framework*,"[279] such that a material adjustment to allowed returns would not be justified on this basis in the RIIO-2 energy context.

c) Third, GEMA rejected the CMA's position in the PR19 PFs that *"[t]here are well-established arguments that underinvestment caused by a cost of capital being set too low damages the overall welfare of consumers (and potentially the wider economy) materially more than the welfare lost through bills that may be slightly too high*".[280] GEMA stated "*we do not believe that there are 'well-established' arguments or evidence for aiming up in the context of the energy sector*".[281]

d) Fourth, in addressing the CMA's statement in the PR19 PFs that "*we note that the most common decision has been that some 'aiming up' has been merited in order to promote investment in the sector, and that there may be benefits to consistency*",[282] GEMA stated that the CMA's NATS PFs and the CMA's Redetermination for Bristol Water (2015) were examples where *"an 'aim straight' approach has been taken"*.[283]

e) Fifth, GEMA stated that its decision that there is no need to aim up on equity financeability grounds was in line with the Competition Commission's decision in the 2007 airport price control review.[284]

3.325 GEMA also cited two reasons for not aiming up which arise specifically in the context of RIIO-2:

a) First, that "[t]he design of the RIIO-2 price control includes several features, such as UMs, to protect network companies and consumers from uncertainty regarding investment during the RIIO-2 period to deliver, for example, net zero. This flexibility weakens the argument that allowed returns should materially exceed the cost of capital."[285]

276 Frontier Economics, September 2020, Further analysis of Ofgem's proposal to adjust baseline allowed returns, prepared for the Energy Networks Association [**MH1/2/3.2.4**].
277 Cost of Equity Report, page 93, Section 8.2 [**MH1/1**].
278 FD, Finance Annex, page 66, paragraph 3.177 [**NOA1/12**].
279 FD, Finance Annex, page 66, paragraph 3.179 [**NOA1/12**].
280 FD, Finance Annex, page 67, paragraph 3.181 [**NOA1/12**].
281 FD, Finance Annex, page 67, paragraph 3.181 [**NOA1/12**].
282 FD, Finance Annex, page 67, paragraph 3,182 [**NOA1/12**].
283 FD, Finance Annex, page 67, paragraph 3,182 [**NOA1/12**].
284 FD, Finance Annex, page 68, paragraph 3.1.85 [**NOA1/12**].
285 FD, Finance Annex, page 68, paragraph 3.183 [**NOA1/12**].

b) Second, that, despite it aiming up in RIIO-1, companies underspent their allowances.[286]

3.326 In DP1, Darren Pettifer describes the "Investor Live Event" on the FD which GEMA hosted on 8 December 2020. He explains that during the presentation, GEMA also cited a number of additional reasons for not aiming up, which were that: [287]

a) indexation of the risk-free rate means the COE number moves in line with financial market circumstances;

b) indexation of real price effects protects licensees against changes in input prices;

c) UMs can provide for additional allowances if additional investment is required; and

d) quality of service targets and licence obligations protect consumers from harmful underinvestment.

3.327 Whilst the reliance on the use of UMs was mentioned in the FD, the other reasons set out in the Investor Live Event were not, and appeared to be new justifications provided only after GEMA published the FD.

3.328 In the Investor Live Event, GEMA also distinguished its methodology for estimating the COE for RIIO-2 from that adopted by the CMA in the PR19 PFs noting "*we don't think it is necessary to aim up within the range for the cost of equity to attract the investment that is required for RIIO-2*".[288]

3.329 As can be seen from the development of GEMA's decision not to aim up, GEMA started from what appears to be a pre-determined position that it would not aim up when setting the COE, even though this was contrary to the position it had adopted in previous price controls.

(2) Error in decision

3.330 GEMA's decision not to aim up was unjustified and harmful, and therefore wrong, for the reasons set out below.

(a) GEMA's decision not to aim up was unjustified

3.331 GEMA's decision not to aim up was unjustified for the following four reasons.

(i) GEMA was wrong not to have due regard to the weight of regulatory precedent which supports aiming up

3.332 The vast majority of UK regulators, together with the CMA and its predecessor, the Competition Commission, have routinely aimed up in their determinations. When they have done so, they have referred to the accepted logic underpinning aiming up. The UKRN Report notes that aiming up "*has been regulatory practice in a number of different countries for a number of years*".[289]

3.333 GEMA was wrong to depart from this well-established approach without sufficient justification. As explained in subsection (iii) below, GEMA had no compelling reasons for departing from the established practice of aiming up. In doing so, GEMA failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice.

3.334 The reason that regulators aim up is that there is uncertainty inherent in setting the COE and the costs of under-estimating the COE are substantial. If allowed returns are set too low then this

286 FD, Finance Annex, page 68, paragraph 3.184 [**NOA1/12**].
287 DP1, paragraph 375 onwards.
288 Ofgem RIIO-2 Investor Relations Live Event Transcript, 8 December 2020 [**DP1/43**].
289 UKRN Report, Section 8.2, page 70 [**NOA1/16**].

undermines the case for investment. In the Cost of Equity Report, Frontier Economics explain that failing to aim up:[290]

> *…creates a heightened risk that companies are put in an untenable position of having to decide whether to (a) cause consumer harm by holding back investments that could deliver important societal benefits; or (b) commit to investments that lead to economic losses.*

3.335 Moreover, as the CMA acknowledged in its Aiming Up Working Paper published recently in the context of the PR19 Redeterminations, there are longer term risks associated with choosing a point estimate that is too low. These include creating an environment that encourages companies to hold back in business planning, deterring new investment and risking an exit of capital over time from the sector, all of which is clearly harmful for existing and future consumers.[291]

3.336 These risks are all the higher at a time when the energy sector is expected to deliver greater levels of investment, and Ofgem's modelling suggests around £5bn of new notional company equity is required in the next five years. For GEMA to depart from an important element of regulatory precedent in this context is therefore particularly concerning, and its justification would need to be especially robust. Absent a clear and compelling justification, its decision not to aim up cannot be consistent with GEMA's statutory duties, in particular the principal objective to protect the interests of existing and future consumers.

3.337 The Cost of Equity Report provides a summary of regulatory decisions taken by UK regulators (GEMA, Ofwat, and the CAA) and the CMA/Competition Commission since 2007, which shows that the vast majority involved aiming up in choosing a point estimate for the COE.

3.338 Two particular examples from the CMA and Competition Commission show that the logic supporting aiming up is clear, well-understood, and long-standing:

a) In its 2007 review of price controls relating to Heathrow and Gatwick airports, the Competition Commission explained: "Given the uncertainties in cost of capital estimates, we considered the cost of setting an allowed WACC that was too high or too low. If the WACC is set too high then the airports' shareholders will be over-rewarded and customers will pay more than they should. However, we consider it a necessary cost to airport users of ensuring that there are sufficient incentives to invest, because if the WACC is set too low, there may be underinvestment from BAA or potentially costly financial distress…Given the significance to customers of timely investment at Heathrow and Gatwick, we have given particular weight to the cost of setting the allowed WACC too low. Most importantly, we note that it is difficult for a regulator to reduce the risks of underinvestment within a regulatory period."[292]

b) More recently, in its PR19 PFs, the CMA noted that: "there are well established arguments that underinvestment caused by a cost of capital being set too low damages the overall welfare of consumers (and potentially the wider economy) materially more than welfare lost through bills that may be slightly too high."[293] The CMA also noted that "the most common decision [in the history of regulatory decisions] has been that some 'aiming up' has been merited in order to promote investment in the sector."[294]

3.339 GEMA failed to take proper account of these relevant considerations; it should have given more weight to the CMA's PR19 PFs as this was the most current CMA engagement on the issue of aiming up prior to GEMA's FD.

3.340 More recently, the CMA has published the Aiming Up Working Paper as part of the PR19 Redeterminations, which restates the rationale for aiming up and the relevant factors that would

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290 Cost of Equity Report, page 92, paragraph 8.1.4 [**MH1/1**].
291 PR19 PFs (29 September 2020), page 16, paragraph 48 [**NOA1/17**].
292 Competition Commission, BAA Ltd: A report on the economic regulation of the London airports companies (Heathrow Airport Ltd and Gatwick Airport Ltd), presented to the Civil Aviation Authority (28 September 2007), paragraphs 4.106 to 4.108 [**NOA1/35**].
293 PR19 PFs (29 September 2020), page 671, paragraph 9.667 [**NOA1/17**].
294 PR19 PFs (29 September 2020), page 671, paragraph 9.668 [**NOA1/17**].

affect a decision on picking a point estimate of the COE.[295] It also set out the CMA's provisional view that it would aim up by 25 bps in the PR19 Final Determinations.

3.341 The framework described in the Aiming Up Working Paper explains why aiming up is appropriate in the context of RIIO-T2 and provides a useful initial checklist of factors which justify the need for regulators to aim up when setting the COE. These are that:

a) there is substantial uncertainty over the true level of the COE (given the parameters are largely unobservable);

b) there is uncertainty around the optimal level of investment that may be required now and in the future but there is a material probability that companies will need to invest in an enhanced capital programme, in particular to meet climate change challenges;

c) if investors do not expect to be fully compensated for future investments, then they may be unwilling to invest in the future to meet these requirements. This could produce two scenarios with negative consequences for consumers:

(i) investors choose to exit the sector or are unwilling to put in further capital, resulting in a higher cost of capital from new investors who are willing to put money into the sector, or a need to pay a premium in future price controls; or

(ii) wider social benefits of investment are lost, either because companies do not identify investments or put resources into planning for them, or because the finance to deliver those investments is unavailable.

3.342 GEMA did not assess these factors when deciding not to aim up in the RIIO-2 FD, in particular the risks arising from under-compensating investors at a time when an additional £5bn of new notional company equity is required across the sector to fund investments in RIIO-2. GEMA's failure to aim up is therefore harmful as discussed in (b) below and as further explained in section I of DP1. In not doing so, GEMA also failed properly to have regard to and/or give appropriate weight to its principal objective to protect the interests of existing and future consumers.

3.343 The Appellant acknowledges that the Aiming Up Working Paper was published on 8 January 2021, and therefore was not available to GEMA at the time of the FD. However, the checklist of factors in the Aiming Up Working Paper distils principles which were already well established in existing regulatory precedent prior to the RIIO-2 FD, which were repeatedly highlighted to GEMA by stakeholders during the price control process.

3.344 Indeed, GEMA was already very familiar with the concept of aiming up, given that in its regulatory decisions in previous price controls, GEMA did in fact aim up. In the Cost of Equity Report Frontier Economics summarise the regulatory decisions in which GEMA has previously aimed up.[296] In those cases, GEMA must have concluded that aiming up was consistent with meeting its statutory duties. Indeed, at no point in the FD did GEMA properly explain why, in view of its decisions to aim up in past price controls, not aiming up for RIIO-2 was consistent with its statutory duties (which have not materially changed for many years).

3.345 GEMA noted in its FD that there are examples where the CMA or the Competition Commission has "aimed straight", rather than aiming up.[297] The Appellant would refute that this is the case on the basis that GEMA's reliance on these examples is flawed (as explained below), but even if this were true, these exceptions do not have the read-across GEMA claims for the reasons stated in subsection (iii) below. However, the mere fact that there may be exceptions to the general rule does not, by itself, justify other exceptions or negate the rationale for aiming up being the standard regulatory practice. Instead, rather than rely on flawed evidence and assumptions, GEMA needed to give due consideration to the reasons why the accepted regulatory practice of aiming up was not followed in those cases and evaluate whether those reasons also applied to and justified the

295 PR19 Aiming Up Working Paper [**NOA1/18**].
296 Cost of Equity Report, page 100, paragraph 8.4.12 [**MH1/1**].
297 FD, Finance Annex, page 68, paragraph 3.182 [**NOA1/12**].

same approach in the RIIO-2 context. Yet GEMA failed to do so and instead reached a conclusion which was not adequately reasoned and without adequate supporting evidence.

3.346 There can be no doubt therefore that GEMA's decision not to aim up is a significant departure from established reasoning and regulatory practice and that, in the absence of sufficient justification, this decision was wrong.

(ii) GEMA was wrong to characterise aiming up as a matter of regulatory discretion and not to take proper account of the evidence

3.347 On various occasions during the RIIO-2 process, GEMA has sought to position the question of whether to aim up as a matter of judgement or discretion. For example, in the SSMD, GEMA argued that the precedent:[298]

> *…shows that the point estimate is subject to regulatory discretion evidently differing by sector and to reflect the broader issues being considered, [and…] the argument to aim up within the cost of capital range rests upon a number of subjective assumptions.*

3.348 GEMA's characterisation of aiming up as purely a matter of regulatory discretion was based on flawed assumptions and was wrong. The Appellant acknowledges that regulators must deploy some judgement when choosing a point estimate but it must be a balanced judgement which is informed by all of the evidence. As Darren Pettifer explains in DP1 and as addressed in the Cost of Equity Report, the in-principle reasons justify aiming up and the evidence clearly supports that the conditions that require aiming up as a matter of good regulatory practice are met in the context of RIIO-T2.

3.349 The choice whether to aim up or not, is not a question of regulatory discretion. This is justified by the consumer benefit of doing so, and the harm to consumers in not doing so. Moreover, an element of judgement in the extent of aiming up does not excuse GEMA from considering all of the relevant considerations and adequately justifying its decision, or from properly having regard to its statutory duties such as the duty to give appropriate weight to principles of best regulatory practice and the principal objective. None of the reasons GEMA belatedly set out in the FD or in the post-script Investor Live Event call provides a sufficient justification for its decision, as explained in the following sub-sections.

(iii) GEMA's decision not to aim up is poorly reasoned and relies on flawed assumptions and evidence

3.350 GEMA's specific justifications for not aiming up are addressed in detail in section 8.8 of the Cost of Equity Report and in summary at section 8.2.

3.351 Each of the seven reasons GEMA stated in the FD in support of its decision not to aim up are flawed and do not provide the justification GEMA claimed for departing from the standard approach.

3.352 First, GEMA's reliance on the NATS Appeal where the CMA decided to aim straight does not justify it failing to aim up for RIIO-2. The NATS Appeal does not constitute a suitable comparator to RIIO-2 because as Darren Pettifer explains in DP1, *"there are clear differences between the ownership models of energy and NATS which mean a low COE would have less impact",*[299] namely that NATS was part-owned by government, which had a vested interested in ensuring that investment is made, whereas this is not the case for energy networks. Moreover, the CMA was clear that it did not complete its assessment of the cost of capital in the NATS Appeal owing to the uncertainties created for the sector by the ongoing pandemic.[300] In any event, the CMA was clear that sector-specific analysis is required when aiming up, and, as Frontier Economics explain in the Cost of Equity Report, "*aiming up is plainly required for RIIO-2 to serve the best interests*

298 SSMD, Finance Annex, pages 72 to 73, paragraphs 3.275 to 3.277 [**NOA1/7**].
299 DP1, paragraph 371.
300 NATS Final Report, paragraph 9 onwards [**NOA1/19**].

of present and future consumers in the energy sector".[301] GEMA's reliance on this case as justification for its approach was therefore wrong.

3.353 Second, GEMA's statement that "[t]he CMA's PR19 PFs appear to place significant weight on an assumption that there is asymmetric downside risk within the PR19 framework"[302] – and that a material adjustment to allowed returns would not be justified on this basis – misunderstands the relevance of asymmetric downside risk. As explained in the Cost of Equity Report, the Appellant's case for aiming up does not depend on there being asymmetric downside risk within the RIIO-2 framework. Neither does it appear that asymmetric downside risk is critical to the CMA's position in PR19: it is a factor that is accounted for in the CMA's approach, but was not posited as a precondition to aiming up. The CMA describes asymmetric downside risk as one of a number of risks addressed in PR19 by aiming up.[303] In fact, all of the factors which the CMA cited as supporting aiming up in the PR19 PFs apply to the same or greater extent in the energy sector:[304]

a) to promote long-term investment and address the risk of an exit of capital if the cost of equity is set too low;

b) to reflect structural asymmetry in the overall determination; and

c) to take into account a cross-check on financeability ratios.

3.354 However, even if asymmetric downside risk is more relevant, GEMA wrongly assumed that it does not apply in RIIO-T2. In fact, in the Cost of Equity Report, Frontier Economics note that there is significant asymmetric downside risk in the RIIO-2 package, in the form of use-it-or-lose-it totex allowances, and evaluative uncertainty mechanisms, and to a greater extent than is the case than PR19.[305] GEMA was therefore wrong to rely on this issue as justification for not aiming up in RIIO-2.

3.355 Third, GEMA was wrong to reject the CMA's position in the PR19 PFs that "[t]here are well-established arguments that underinvestment caused by a cost of capital being set too low damages the overall welfare of consumers (and potentially the wider economy) materially more than the welfare lost through bills that may be slightly too high".[306] GEMA stated that the underlying logic was not well established in relation to the energy network sector, but did not offer a coherent justification for this position.[307] Further, GEMA failed to take proper account of relevant evidence that in fact points the other way, including:

a) GEMA has historically aimed up in the energy networks sector, which suggests that GEMA has previously considered that the theory is applicable to this sector and that aiming up is consistent with balancing its statutory duties.

b) As explained in detail in the Cost of Equity Report, the complexities in the energy networks sector that GEMA refers to do not contradict the logic that supports aiming up. Nor does GEMA's scepticism that the academic literature is applicable in the context of RIIO-2 because Dobbs' work does not account for all of the relevant considerations for RIIO-2.[308] Specifically, in the FD GEMA suggested that sharing factors, ODIs and licence obligations were omitted from Dobbs' analysis. As Frontier Economics explain in the Cost of Equity Report, GEMA's reference to these factors does not address the fundamental problems associated with failing to aim up: *"it is wrong to believe that the existence of a wider set of incentives and regulatory mechanisms somehow changes the fundamental role and relevance of allowed returns to the commercial case to invest".*[309] Even in combination, these factors do not outweigh the strong rationale for aiming up presented in Dobbs' paper

301 Cost of Equity Report, page 119, paragraph 8.9.26 **[MH1/1]**.
302 FD, Finance Annex, page 67, paragraph 3.179 [**NOA1/12**].
303 PR19 Aiming Up Working Paper, page 34, paragraph 115 [**NOA1/18**].
304 PR19 Aiming Up Working Paper, page 34, paragraph 115 [**NOA1/18**].
305 PR19 Aiming Up Working Paper, paragraph 115 [**NOA1/18**].
306 FD, Finance Annex, pages 67 to 68, paragraph 3.181 [**NOA1/12**].
307 FD, Finance Annex, pages 67 to 68, paragraph 3.181 [**NOA1/12**].
308 FD, Finance Annex, pages 67 to 68, paragraph 3.181 [**NOA1/12**].
309 Cost of Equity Report, page 117, paragraph 8.9.10 [**MH1/1**].

meaning GEMA's position is not reasonable. Further, these types of factor have been considered by the CMA elsewhere.[310]

c) The investment environment and regulatory framework in the energy networks sector are sufficiently similar to the water sector, where the CMA has very recently endorsed aiming up and also considered the existence of similar regulatory mechanisms to those that GEMA noted were not considered in the Dobbs' work. Any suggestion that the sectors are so different as to rule out the appropriateness of aiming up in the energy sector is wholly without justification. In fact, in its own submissions to the CMA during the PR19 Redeterminations, Ofwat stressed that the risks related to underinvestment in the water sector were less severe than in the energy sector, pointing out that societal risks that could arise from extreme adverse events in the energy sector such as "blackouts".[311] It is difficult to see any good reason that aiming up should be used in the water industry, but not the energy sector; or why the COE in water should be higher than in energy.

3.356 Fourth, GEMA's reliance on the CMA's redetermination for Bristol Water in 2015 and the NATS Appeal as evidence that it is appropriate to aim straight was mistaken. Both turn on very specific facts that are not directly relevant to RIIO-2 and there are more reasons to distinguish them rather than to believe they are analogous. For the reasons explained in paragraph 8.4.21 of the Cost of Equity Report, the CMA in 2015 did aim up for Bristol Water, but chose to do so at the parameter level, rather than at the end within its overall COE range. As already noted, the CMA was clear in the NATS Appeal that it did not complete its assessment of the cost of capital for NATS owing to the uncertainties created for the sector by the ongoing pandemic meaning it should not be regarded as setting any relevant precedent.

3.357 Fifth, GEMA's reference to previous cases in support of the conclusion that aiming up is not an appropriate remedy for financeability constraints is not relevant to the arguments in favour of aiming up. GEMA cited the Competition Commission's 2007 airport price control review as precedent that aiming up was not an appropriate remedy for financeability constraints. The Appellant has not argued that GEMA should have aimed up in order to remedy financeability constraints resulting from the FD. There remains a strong case to aim up for energy networks which does not depend on there being financeability constraints.[312]

3.358 Sixth, GEMA did not adequately explain the features of the price control that justify why aiming up is not required: "*The design of the RIIO-2 price control includes several features, such as UMs, to protect network companies and consumers from uncertainty regarding investment during the RIIO-2 period to deliver, for example, net zero. This flexibility weakens the argument that allowed returns should materially exceed the cost of capital*."[313] For the reasons explained by Darren Pettifer in DP1, UMs do not obviate the need for aiming up, and in fact create a risk of deferred investment in the short term. Further, UM funding only adjusts totex allowances if additional investment is required; they do not adjust the COE. The FD COE remains the same regardless of the totex levels, so UMs will not impact on the main reason to aim up – namely the uncertainty of the true COE.

3.359 In stating that the "*flexibility*" afforded by UMs "*weakens the argument that allowed returns should materially exceed the cost of capital*" GEMA also misunderstood, and therefore failed to engage with, the Appellant's concerns with failing to aim up. The Appellant is not arguing that "*allowed returns should materially exceed the cost of capital*" but rather that GEMA should acknowledge that the risks associated with choosing a point estimate for the COE which is too low outweigh the risks associated with choosing a point estimate which is too high. GEMA's suggestion that other features of the price control mean aiming up is not required was not a sufficient justification to fail to aim up.

3.360 Seventh, GEMA was wrong to suggest that the fact that companies may have underspent their allowances in RIIO-1, where there was aiming up, provided any reason not to aim up in a subsequent price control (particularly one where the framework is different and allowed returns

310 PR19 Aiming Up Working Paper, page 12, paragraph 35 [**NOA1/18**].
311 PR19 Aiming Up Working Paper, paragraph 44. [**NOA1/18**].
312 See Cost of Equity Report, page 113, section 8.7 for use of financeability as a cross-check for aiming up [**MH1/1**].
313 FD, Finance Annex, page 68, paragraph 3.183 [**NOA1/12**].

are materially lower). The reasons why GEMA was wrong on this point are explained in section 8.9 of the Cost of Equity Report. In summary, Frontier Economics note that:[314]

a) The fact that some companies outperformed during RIIO-1 does not mean there is no requirement for the regulator to aim up when setting the COE. Investment being delivered more efficiently should not be confused with an allowed return failing to incentivise investment in the first place.

b) Outperformance during RIIO-2 is far from guaranteed, given the step change in challenge resulting from material changes to the design and calibration of the price control.

3.361 Delivering outputs that consumers are willing to pay for at lower cost is in consumers' interests, and therefore in line with GEMA's principal objective. This should be incentivised by the framework. This is separate from the drivers for aiming up which are about incentivising investment being brought forward by networks rather than incentivising them to be risk averse and cautious, and therefore put at risk investment.

3.362 For these reasons, none of GEMA's reasons set out in the FD therefore provided a valid justification for the decision not to aim up.

3.363 Nor do the additional reasons which GEMA set out 'post-script' in response to questioning during the 8 December Investor Live Event (summarised in paragraph 3.326 above) provide a valid justification for GEMA's decision:

a) The indexation of the RFR does nothing to address the underlying principle behind aiming up which applies to the overall COE. Indexation can only help mitigate specific risks associated with the movement in the RFR, such that the COE number will move in line with changing expectations about equity returns. However, indexing does not – and cannot – mitigate the risk that the COE is set too low in the first place, it can only ensure that the shortfall does not grow (and that assumes GEMA's decision on indexation for the RFR is correct, which it is not for the reasons set out in section B above). Indexation for the RFR is therefore not relevant to aiming up.

b) Similarly, indexation for real price effects cannot compensate for not aiming up either. Real price effects help mitigate specific risks related to input price variations. The suggestion that real price effects can address the harm aiming up seeks to avoid confuses COE and input prices, which clearly are not the same.

c) Finally, the reference to quality of service targets and licence obligations also confuses the purpose targets and licence obligations and the underlying rationale of aiming up. Whilst of course the Appellant must comply with its licence obligations, the same could be said of any regulated business in other sectors and price controls where aiming up was adopted or considered when setting the COE. Further, in the context of Net Zero, there will be significant projects that networks need to be encouraged to bring forward in the period. These do not have specific licence obligations attached and will have to be innovative and ambitious in nature so are high in risk. Networks need to be incentivised to bring these forward rather than be risk averse and cautious in development which will be the result of not aiming up.

3.364 Overall, in its justifications GEMA relied on flawed evidence and assumptions, relied on flawed evidence and reached conclusions without adequate supporting evidence, and failed to have proper regard to its duties.

[314] Cost of Equity Report, page 117, paragraph 8.9.14 to 8.9.19 [**MH1/1**].

(iv) GEMA was wrong to conclude that the conditions under which aiming up is needed to prevent consumer harm from underinvestment are not present in RIIO-2

3.365 GEMA was wrong to assume that the conditions under which aiming up is needed to prevent consumer harm from underinvestment are not present in RIIO-2.

3.366 This is a simple error of fact. As Frontier Economics explain in section 8.5 of the Cost of Equity Report, the arguments which the CMA identified in PR19 as justifying the need to aim up to prevent consumer harm "*are equally if not more applicable to the energy sector*".

3.367 As set out in section F of DP1, qualitative and quantitative evidence shows that the energy sector is higher risk for investors than water. Specifically:

a) on average, NG plc's beta is 11% higher than the betas of the three water companies used by GEMA when estimating the energy sector beta in the FD;

b) GEMA's consultants, CEPA, consider that *"GB energy networks may be judged riskier than water networks*";[315] and

c) energy networks face significantly higher risks than water companies in the form of investment risks, construction risk, capex uncertainty, stranding risk, political risk, regulatory funding risk and asset risk.

3.368 It is, therefore, reasonable to adopt the position taken by the CMA in the PR19 Redeterminations as a starting point for assessing whether to aim up. Frontier Economics apply the framework which the CMA set out in the PR19 Aiming Up Working Paper for assessing whether there is a need to aim up, and conclude that *"aiming up is necessary to ensure capital availability for future investments in the energy sector"*.[316] Further evidence that aiming up is needed to secure investment in the sector is provided in section I of DP1. GEMA was therefore not justified in assuming that there is no need to aim up to prevent consumer harm from underinvestment in RIIO-2.

3.369 Further, at DD, GEMA stated that[317]

> *It is not clear to us why it would be appropriate to aim to the top half of a given range, unless we could clearly identify issues that are not captured within the range or that it was somehow biased.*

3.370 Sections B to C above show that GEMA has set a COE range that is biased downwards as it has not given proper consideration of evidence that sits above its range. In this context, it is even more of an error for GEMA not to aim up. GEMA therefore relied on flawed assumptions and reached its conclusion on the conditions under which aiming up is needed without adequate supporting evidence.

(b) GEMA's failure to aim up is harmful

3.371 GEMA's failure to aim up will undermine companies' incentives to invest, will undermine investor confidence and will therefore materially harm existing and future consumers, in breach of GEMA's principal objective. The decision not to aim up was therefore wrong as further explained below and in the COE Report and as evidenced in NS1 and DP1. In addition, Nicola Shaw provides further context about why investment is so necessary in RIIO-2 in section B of NS1.

315 CEPA, 9 July 2020, RIIO-2: Beta estimation issues, page 5 [**DP1/21**].
316 Cost of Equity Report, page 104, paragraph 8.5.5 [**MH1/1**].
317 DD, Finance Annex, page 199 [**NOA1/9**].

(i) GEMA's failure to aim up will undermine companies' incentives to invest

3.372 In section 8.5 of the Cost of Equity Report, Frontier Economics outline the reasons why GEMA's failure to aim up when setting the COE for RIIO-2 will undermine companies' incentives to invest.

3.373 A key point is that the decision reduces the incentive to bring forward investment at the business planning stage if there is no commercial case for investment (i.e. companies will not bring forward investment proposals in business plans for future regulatory periods), and it does so at a time when the achievement of government policy in the energy sector will require significant new and innovative investment.

3.374 This is supported by the evidence provided by Nicola Shaw in section E of NS1 and by Darren Pettifer in section L of DP1[318]. In particular, Darren Pettifer explains his view that:

a) The evidence suggests the allowed equity return in the RIIO-2 FD is below the notional company's actual cost of equity. Consequently, any new investment during RIIO-2 becomes value destructive as it costs the company more to fund investment than it is allowed to recover.

b) In this situation, companies' incentives to bring forward innovative and stretching investment proposals in business plans are undermined. This is because it is not rational for companies to propose such projects in their business plans where they are destructive of shareholder value.

c) The impact on investments would be felt at the margins. In particular, network companies will be reluctant to take risks they may have done previously with the lower return and investors' view that capital could be better spent elsewhere. While it is difficult to say where precisely the effects would arise in the future, examples of projects carried out by the Appellant in recent years show how a sufficient allowed return enables the delivery of beneficial projects.

3.375 In addition, there is a risk that networks may not be encouraged to bring forward investment in the short term (i.e. within the RIIO-2 period). Frontier Economics state that although the CMA did not consider it necessary to aim up at PR19 to secure investment in the shorter term (i.e. within the price control period), "*the circumstances for energy networks are different*."[319] Indeed, Frontier Economics explain that due to the existence of UMs where companies are required to apply for incremental allowances within the current price control period "*the long term planning concern identified by the CMA in respect of water clearly arrives much earlier in the case of energy networks, creating an opportunity to hold back in planning investment in the current period, not just at the next full price control review*".[320]

3.376 This concern is supported by evidence provided by Nicola Shaw in section E of NS1 and by Darren Pettifer in section L of DP1[321]. In particular Darren Pettifer explains that:

a) a significant portion of the Appellant's potential investment in RIIO-2 (around 65%) are subject to UMs.

b) UMs which are not subject to specific licence obligations allow – but crucially do not mandate – licensees to bring forward investment plans during the price control period, which, if approved, would be funded through additional allowances.

c) Such funding would still be tied to the allowed rate of return. Therefore, in circumstances where the COE (and so the allowed rate of return) is set too low, projects funded through the use of UMs would still lead to economic losses, so there is no incentive for a licensee to invest the time, effort and money in developing such projects.

318 DP1, paragraph 500 onwards.
319 Cost of Equity Report, page 108, paragraph 8.5.28 [**MH1/1**].
320 Cost of Equity Report, page 109, paragraph 8.5.30 [**MH1/1**].
321 DP1, paragraph 503 onwards.

3.377 In these circumstances, shareholders would be less willing to provide funding for projects, notwithstanding that the projects will be in the interests of consumers. The full portfolio of projects that would maximise the benefit to consumers over the long term would not attract the funding needed.

(ii) GEMA's failure to aim up will undermine investor confidence

3.378 Frontier Economics emphasise that a failure to aim up when setting the COE may in and of itself weaken investor confidence.[322] This was recognised by the CMA in the PR19 PFs, where it stated that: *"there may be benefits to consistency [in continuing to choose to aim up] – including ensuring investor confidence in the sector."*[323] The benefits related to consistency are of course additional to all the benefits that flow from aiming up in the first place.

3.379 Frontier Economics' assessment is supported by Darren Pettifer in section L of DP1[324], where he explains that:

a) If investors perceive there to be a reduction to the predictability and stability of the regulatory regime they will likely 'discount' future regulatory outcomes to reflect this uncertainty. This will increase the actual (as opposed to allowed) cost of capital in both the current and future price control periods as investors will be left with a precedent that regulators can make arbitrary adjustments to their allowed return on equity methodologies or other parts of the framework.

b) It is important to note that the level of investment contemplated during the RIIO-2 period will likely require the notional company to raise significant levels of new equity. In GEMA's high-case totex scenario, the notional company would require new equity investment of £0.2bn, around 8% of the closing equity RAV at the end of RIIO-1. The scale of the investment needed contrasts with the weak offering available to investors, where the allowed return set by the FD is lower than the UK water sector (despite the latter being subject to lower risks than energy), and the growth and dividend yield is below the overall market average.

(iii) Any failure to invest will give rise to material harm to consumers

3.380 In the Aiming Up Working Paper, the CMA identified the adverse effects that will flow for consumers if investors do not expect to be fully compensated for future investments. These are described in section 8.5 of the Cost of Equity Report. In summary the CMA identified two key effects:[325]

a) where there is flexibility around the balance between opex and capex, the sector may prefer opex solutions requiring less investment – this risks introducing an opex bias; and

b) if the cost of capital is too low, investors will prefer to withdraw rather than increase the level of capital invested – i.e. this risks an exit of capital.

3.381 Frontier Economics explain "*[a] reduction in investment due to the above will result in the reduction in wider benefits to customers and society, including potentially those associated with the transition to net zero. We consider that these alone are sufficient to require some prudent uplift to allowed returns*".[326]

3.382 Ensuring capital availability for future investments in the energy sector is vital in order to achieve Net Zero for the reasons described by Nicola Shaw in NS1 and Darren Pettifer in DP1. Failure to do so will give rise to material harm for both existing and future consumers, in breach of GEMA's principal objective.

322 Cost of Equity Report, page 100, paragraph 8.4.9 [**MH1/1**].
323 PR19 PRFs (29 September 2020), page 671, paragraph 9.668 [**NOA1/17**].
324 DP1, paragraph 519 onwards.
325 Cost of Equity Report, page 109, paragraph 8.5.35 [**MH1/1**].
326 Cost of Equity Report, page 110, paragraphs 8.5.36 to 8.5.37 [**MH1/1**].

3.383 In conclusion, GEMA failed to provide sufficient justification for its decision not to aim up, which represents a significant departure from established and consistently adopted reasoning and practice. In the absence of a cogent justification, it can only be inferred that GEMA's decision not to aim up at Step 3 was consistent with that adopted in each of Step 1 and Step 2 in that it was downwards biased and targeted at achieving a low COE for RIIO-2. GEMA's failure to aim up will give rise to material harm to existing and future consumers because it will undermine companies' incentives to invest and undermine investor confidence both in the short term (i.e. the RIIO-2 control period) and longer term. GEMA's decision not to aim up was based on flawed evidence and assumptions and is in breach of its statutory duties, in particular its principal objective to protect the interests of existing and future consumers; and was therefore wrong.

3.384 GEMA's failure to aim up is one of number of factors which has led it to set a materially lower COE than is justified on a proper account of all of the relevant evidence and when balanced judgements are applied (see section E, **Insufficient COE Error**).

E. Insufficient COE Error

3.385 GEMA's overall decision to set the COE at 4.55% for RIIO-T2 was wrong. This is significantly below any reasonable measure of the appropriate equity return when proper account is taken of all of the available evidence and proper regard is had to the harm of setting the COE too low.

3.386 The Appellant accepts that when selecting the point estimate for the COE GEMA is predicting a future cost with a number of uncertain component variables. This is reflected in network companies' business plans where different companies chose to assume different notional COE point estimates for RIIO-T2.

3.387 However, the decision to set a point estimate for the COE must be well-justified, free from material errors, reasonable in the circumstances and consistent with the regulator's statutory duties. In particular, when setting the COE, it is important to:

a) apply a methodological approach which is free from bias or unjustified selectivity, which includes not defaulting to selecting the option that produces the lowest results;

b) have an open mind around the entirety of the evidence base to reach an informed view which takes proper account of all relevant sources of input;

c) avoid having a pre-determined expectation of where the point estimate should land;

d) be cautious in applying cross-checks as a means to validate evidence in particular where this relies on evidence which is not directly comparable; and

e) select a point estimate based on a series of balanced assessments while aiming up to ensure this is between the mid-point and the higher end of the range because of the greater consequences of setting the COE too low.

3.388 In setting the COE for RIIO-T2 GEMA has made erroneous methodological choices – failing to take proper account of evidence which would support higher COE – and has made unbalanced judgements, leading it to set a materially lower COE than is justified on a proper account of all of the available evidence.

3.389 GEMA's errors are explained in sections B – D and discussed in the NS1, DP1 and the Cost of Equity Report. These errors cover the CAPM Selectivity error, the Cross-Checks error and the Aiming Up error.

3.390 As evidence in these sections reveals, while there may be uncertainty as to what the true value of the COE should be, **there is clear evidence that 4.55% is insufficient and a higher COE is justified for RIIO-T2**. This gives rise to the overall Insufficient COE Error.

3.391 Further to the errors already discussed, for the reasons given below, GEMA's decision to set the COE at 4.55% for RIIO-T2 is also (1) **unjustified** because (a) a significant proportion of the

reduction in the COE results from the introduction of multiple erroneous methodological changes (b) GEMA's financeability test was flawed, and (2) **harmful** because setting the overall COE at a level which is insufficient will lead to significant consumer harm.

(1) The RIIO-2 COE of 4.55% is unjustified

(a) A significant proportion of the reduction in the COE results from the introduction of multiple erroneous methodological choices

3.392 GEMA has reduced the COE in RIIO-T2 to a level which is materially lower than that which it applied for RIIO-T1. Specifically, the Appellant's COE has been reduced from 7.4% in RIIO-T1 to 4.55% in RIIO-T2.

3.393 As Darren Pettifer explains in section K of DP1, the substantial scale of the reduction in the COE cannot be explained by underlying network or market risk[327]. Despite some elements of COE which have reduced over this time (e.g. RFR), other elements such as the risk profile of investment have substantially increased. The Appellant faces greater investment scale risk, construction risk and capex uncertainty compared to RIIO-T1. Investment levels are expected to be 62% higher in RIIO-T2 compared to RIIO-T1 for the Appellant. As a result capex to RAV ratios are forecast to increase from levels in RIIO-T1.[328] This adverse change in risk profile is in addition to other increased risks, such as regulatory risk from items such as asymmetric funding mechanisms and political risk given the current economic environment and both the importance of net zero and uncertainty over the pathway to achieve it.

3.394 When proper regard is had to the evidence, a significant proportion of this reduction is driven by the multiple erroneous changes in methodology which GEMA has made when setting the COE for RIIO-T2.

3.395 GEMA has made at least 10 material methodological choices in estimating the COE for RIIO-T2 as compared with RIIO-T1,[329] as set out in Figure 7.[330]

Figure 7: Methodological choices made by GEMA in setting the COE for RIIO-T2

Parameter	Methodology choice
RFR	Use of spot ILG yields
Equity beta	Use of Market Value of debt in de-gearing
Equity beta	Greater weight on 10 year beta
Equity beta	Use of GARCH methodologies
Equity beta	Over-reliance on water company betas
Equity beta	Placing insufficient weight on NG plc beta
TMR	Use of questionable CPI back-cast data to deflate historical returns
TMR	Relying on an inadequate uplift above geometric mean
Overall	Relying on cross checks to constrain the upper bound of COE range
Overall	Not aiming up within the range

3.396 All of these choices are erroneous for the reasons explained in sections B – D.

327 DP1, paragraph 472 onwards.
328 FD baseline capex to RAV ratios are more than 1% higher than RIIO-T1 with potential for this to grow more under Ofgem's Net Zero 1 scenario.
329 Note that this list does not include the outperformance wedge which is addressed separately in Ground 2.
330 See also DP1, paragraph 498, Table 9.

3.397 This evidence reveals that **each individual choice** introduced a **downwards** adjustment, which had the effect of reducing the overall value of the COE. These are choices Ofgem has made to reduce COE yet at the same time it has failed to have adequate regard to the evidence which supported much higher COE.[331]

3.398 Moreover, GEMA has failed to have proper regard to the **cumulative effect** of its choices or to explain why it considers the COE to be sufficient overall. As noted by Frontier Economics in the Cost of Equity Report, a simple comparison with the CMA's PR19 PFs reveals that GEMA's COE for RIIO-2 is materially lower than the CMA's estimate for PR19 (accepting that the PR19 Final Report has not yet been published), "*yet the evidence points to energy networks being higher risk.*"[332]

(b) The RIIO-T2 COE is unjustified as GEMA's financeability assessment was flawed

3.399 In the FD, GEMA stated that "*all notional licensees can be considered comfortable investment grade in the round*".[333] However, GEMA's assessment of financeability is flawed. As set out in section J of DP1[334], GEMA's financeability cross-check only focuses on debt metrics and does not include any quantitative assessment of financial metrics to assess whether an investor would be prepared to provide equity finance (i.e. equity financeability).

3.400 This is a material oversight in GEMA's approach to determining the COE. Equity investors will require a strong projection of value growth and a dividend yield commensurate with the risks they are taking on. As explained in DP1, investors in regulated utilities give extra prominence to dividend yields. However, GEMA assumes a notional dividend yield of just 3%. This is over 1% lower than the average FTSE100 yield despite utilities being a dividend stock, and a further 1% lower than both the expected yield in the utility sector and Ofgem's assumption of 5% in RIIO-1. Moreover, this low level of dividend cannot be maintained based on the FD COE, with a notional dividend cover materially less than 1 (as included in Ofgem's own financial model).

3.401 GEMA's failure to have due regard to equity financeability becomes all the more relevant given that the FD assumes, without question, that a significant amount of new notional company equity can be attracted into the sector during the RIIO-2 period. In GEMA's high-case totex scenarios, nearly £5bn in new equity is required in the period. Of this, £3.9bn is within the transmission sector and £2.4bn within NG. The NGG proportion is equivalent to around 8% of the closing equity RAV at the end of RIIO-1.

(2) Setting the COE at an insufficient level will harm consumers

3.402 In section L of DP1, Darren Pettifer describes three sources of consumer harm that will arise from setting the COE too low and therefore render GEMA's decision wrong.[335]

3.403 First, setting the COE too low will reduce the pace and scale of investment. Ofgem's errors in estimating COE mean it is likely to be below investor's true COE, which will have negative impacts on delivery of work in RIIO-2.

3.404 GEMA appears to satisfy itself that it can risk setting COE that does not achieve equity financeability because the Appellant is mandated to deliver much of the investment in its baseline allowances. However, this does not take into account that there is uncertainty over a significant proportion of likely outturn investment required in RIIO-T2.

3.405 Around 65% of the potential capex requirements (based on Ofgem's own Net Zero 1 scenario) are subject to uncertainty mechanisms. Clarity on these projects, and their associated funding, will only emerge as the sector understands the pace, scale and form of change required to support the development of hydrogen technology and the decarbonisation of heat.

331 DP1, paragraph 494 onwards.
332 Cost of Equity Report, Section 9.1 [**MH1/1**]. Also see page 124, section 9.3 for further details.
333 FD, Finance Annex, page 81, paragraph 5.24 [**NOA1/12**].
334 DP1, paragraph 418 onwards.
335 DP1, paragraph 500 onwards.

3.406 In practice, GEMA is relying on networks to identify projects, develop them with stakeholders and submit business cases that can be robustly defended against the scrutiny that GEMA would rightly apply to them. Where the allowed COE is below the true COE for the notional company, there is a disincentive to bring forward future projects and innovative developments.

3.407 The significant level of new equity funding required in the notional company to deliver this investment could only be raised efficiently if investors accepted the strategic rationale and investment case for such a move. GEMA does not consider how such a public offering could be justified to shareholders where the allowed COE includes erroneous methodological choices which sharply reduce it. Specifically, an artificially low COE that is below the true COE for the notional company will reduce the incentive on transmission operators to accelerate innovative investment. Companies will likely attempt to minimise risks so that their risk profile is commensurate with their allowed COE.

3.408 As Darren Pettifer notes in DP1, whilst this would not result in the Appellant consciously holding back investments critical to the delivery of consumer outputs, the insufficient COE could impact "*at the margins in identifying, planning and developing projects across the industry due to the incentives from low return*" given that investors will consider that their capital could be better spent elsewhere.[336]

3.409 This is particularly concerning given the importance of the development of hydrogen technology and the decarbonisation of heat. These adverse consequences on the pace and scale of these investments cannot be in the interests of GB consumers or the wider economy.

3.410 Second, the low level of COE for RIIO-T2 will negatively impact the level of ambition in company business plans in future controls, such as RIIO-T3.

3.411 As Darren Pettifer explains in section L of DP1[337], the regulatory process for establishing totex levels relies on networks to be motivated to build high quality business plans with a range of investment options that can then be developed and delivered through engagement with the regulator and the wider stakeholder community.

3.412 The insufficient COE for RIIO-T2 will result in the energy transmission sector being less attractive to potential investors and act as a disincentive to companies and investors to bring forward new and innovative projects in RIIO-T3. This will ultimately be to the detriment of consumers.

3.413 Third, setting the COE too low will reduce investability in the sector for the reasons described in section L of DP1.[338]

3.414 Investors' assessment of the attractiveness of investing in the UK regulated energy networks will involve judgements about the long-term quality and stability of the UK regulatory regime. The CMA recognised in the PR19 Redeterminations that:[339]

> *if investors do not expect to be fully compensated for future investments over their life, then they may be unwilling to invest in the future to meet these requirements.*

3.415 The CMA recognised that this could result in investors choosing to exit the sector, which would be to the detriment of consumers.

3.416 The fact that the sharp reduction in COE for RIIO-T2 is based on a series of individual adjustments which are all erroneously skewed downwards is already generating concerns about investability of the sector. Investors will have to consider the relative attractiveness of the risk to reward balance of investing in the UK energy sector as compared to other jurisdictions.[340]

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336 DP1, paragraph 513.
337 DP1, paragraphs 517-518.
338 DP1, paragraph 519 onwards.
339 Aiming Up Working Paper, page 14, paragraph 42(c) [**NOA1/18**].
340 NS1, section E.

3.417 Similarly, investors will have to weigh up investments in UK energy against other sectors. As set out in section L of DP1[341], the energy sector is higher risk from an investor's perspective than the water sector. This is the result of investment scale risk, construction risk and capex uncertainty, as well as a number of other risks. Moreover, this is partially reflected in the higher beta in the FD as compared to that determined in the CMA's PR19 PFs. However, the COE overall is not commensurate with that risk, with GEMA setting a lower COE than in the CMA's PR19 PFs.

3.418 The impact of GEMA's position on investability can be seen in the rating agencies' comments on RIIO-2 which question the stability of the framework, and analyst reports and direct views from investors, as explained in section L of DP1.

3.419 In conclusion, GEMA's decision to set the COE for RIIO-2 at an unreasonably low and insufficient level is not in the consumer interest for the reasons given above, and as supported in the witness evidence from Nicola Shaw and Darren Pettifer, and the Cost of Equity Report from Frontier Economics.

3.420 As a consequence of the **Insufficient COE Error**, GEMA's decision was wrong within the meaning of section 23D(4) GA86 (see further section F and Annex 1).

3.421 The Appellant therefore requests that the CMA quash GEMA's decision and substitute its own decision to set a higher COE for RIIO-T2, as explained in section G.

F. Legal consequences

3.422 GEMA's COE for RIIO-T2 was wrong on the following grounds (which are explained in more detail in Annex 1):

a) GEMA failed properly to have regard and/or to give the appropriate weight to its principal objective and its statutory duties because setting an insufficient COE: has effects on short and long-term investability of the sector with significant consequences for existing and future consumers, does not have proper regard and/or give the appropriate weight to securing that licence holders are able to finance their licensed activities, contributing to the achievement of sustainable development, promoting efficiency and economy and securing a diverse and viable long-term energy supply, and does not have proper regard and/or give the appropriate weight to the effect on the environment or the principles of best regulatory practice (section 23D(4)(a) GA86 and section 23D(4)(b) GA86);

b) the decision was based, wholly or partly, on errors of fact because GEMA has relied on flawed assumptions, assertions, interpretations and evidence (section 23D(4)(c) GA86);

c) the licence modifications fail to achieve, in whole or in part, the effect stated by GEMA because the insufficient COE does not give effect to the "long-horizon approach" to setting the cost of capital that GEMA sought to achieve and does not "ensure that the notional licensee will have sufficient, but not excessive [sic] revenues to finance its activities". (section 23D(4)(d) GA86); and

d) the decision was wrong in law because GEMA failed to take proper account of relevant evidence, relied on flawed evidence and assumptions, failed properly to inquire, reached conclusions without adequate supporting evidence, made methodological errors, acted in defiance of logic, and was procedurally unfair (section 23D(4)(e) GA86).

G. Relief sought

3.423 The Appellant requests that the CMA should quash GEMA's decision to set the COE for RIIO-T2 at 4.55% and should substitute its own decision for that of GEMA because GEMA's decision is wrong.

[341] DP1, paragraph 519 onwards.

3.424 As to what the 'right' COE should be for RIIO-T2, the Appellant submits that the CMA's starting point in determining this should be to correct the errors in GEMA's three-step process by:

a) taking account of AAA-rated corporate bond indices as well as ILG yields when determining the RFR;

b) determining an RFR range that has a lower bound defined by ILGs and an upper bound defined by AAA-rated corporate bond indices in line with the methodology adopted in its PR19 PFs;

c) making the necessary changes to enable the CMA's decision to be revised on an annual basis as part of GEMA's AIP process, as set out in annex;

d) determining a balanced and more accurate view of an appropriate TMR range by considering estimates that:

(i) include CPI and RPI deflated estimates;

(ii) use JKM, arithmetic averaging and Cooper estimators – assessed using 5, 10 and 20 year holding period; and

(iii) adjust the range to take account of downwards bias in the source returns data; and

e) aiming up by selecting a point estimate above the mid-point and towards the higher end of the resulting range.

3.425 Frontier Economics has undertaken this analysis and presents the results in section 10 of the Cost of Equity Report. This leads them to conclude that the revised COE point estimate should be no lower than 5.6%. The Appellant therefore requests that the CMA substitute the COE for a point estimate no lower than 5.6%.

3.426 To assist the CMA in providing the necessary directions to GEMA to give effect to this relief, the Appellant has provided a detailed annex – Annex 1 to DP1 – which explains what changes are, in principle, required to be made in the Licence, PCFM and PCFH.

3.427 In accordance with the overriding objective, the Appellant will provide all such assistance to the CMA as is necessary to secure the implementation of the required relief within the CMA's administrative timetable (thus avoiding a need for any remittal to GEMA).

SECTION 4: GROUND 2 – OUTPERFORMANCE WEDGE

A. Overview

4.1 Ground 2 concerns GEMA's unprecedented decision to deduct £36 million[342] from the Appellant's 2021-26 allowed revenues in anticipation of future outperformance. This adjustment takes effect in the RIIO-T2 Decision as a 25 bps reduction to allowed equity returns. This is equivalent to an additional stretch totex efficiency challenge of 3.6% (£75 million) for NGG to meet GEMA's view of required return. For the reasons further described in this section, this decision was wrong.

4.2 GEMA has based its decision to deduct this significant amount of money from the Appellant's allowed revenues on an inconclusive academic report dating from March 2018, without heeding its findings in full or addressing the profound concerns in the dissenting view it contains. The 25 bps reflects GEMA's unjustified assumption of the gap which might emerge between the allowed return and the expected return over the period of the RIIO-T2 price control. GEMA has also, in response to criticism, introduced an ill-conceived ex-post adjustment mechanism which, if performance is less than expected, will provide a 'top up' in RIIO-2 controls at the end of the RIIO-2 price control period. These two elements are novel[343] and commonly referred to as the 'outperformance wedge'. Further details about GEMA's decision to introduce and apply the outperformance wedge are provided in section B.

4.3 The outperformance wedge is unjustified and harmful for the reasons explained in section C. To summarise, the outperformance wedge is **unjustified** because:

a) it is wrong to make a final, significant deduction from allowed returns after the price control has been calibrated;

b) there is no need to make a final, significant deduction from allowed returns given the extensive range of existing and new regulatory tools available, and used, in RIIO-T2 to address information asymmetry effectively;

c) the decision is poorly reasoned and relies on fundamentally flawed assumptions and evidence; and

d) it has a discriminatory and disproportionate impact on different licensees for no good reason;

and it is **harmful** because:

e) the outperformance wedge will cause direct and enduring harm to existing and future consumers by undermining productivity incentives, damaging incentives to invest, damaging investor confidence (thereby increasing the cost of capital in the long run) and undermining equity financeability in RIIO-2; and

f) the ex-post adjustment mechanism does not fix these problems but creates some new ones.

4.4 Having regard to the nature and significance of its impact and identified harms – which GEMA failed adequately to consider during the RIIO-2 process or in any proper Impact Assessment – the outperformance wedge cannot be justified.

4.5 GEMA's decision to introduce and apply the outperformance wedge was therefore wrong within the meaning of section 23D(4) GA86, (see further section D and Annex 2) because:

a) GEMA failed properly to have regard and/or to give the appropriate weight to its principal objective and its statutory duties because the introduction of the outperformance wedge does not protect the interests of (and indeed harms) existing and future consumers, does

342 In 2018/19 prices.
343 As acknowledged by Ofgem in the FD, Core Document, page 54, paragraph 6.8 [**NOA1/11**].

not have proper regard to and/or give the appropriate weight to securing that licence holders are able to finance their licensed activities, contributing to the achievement of sustainable development, promoting efficiency and economy, and securing a diverse and viable long-term energy supply, and does not have proper regard to and/or give appropriate weight to the effect on the environment or the principles of best regulatory practice (section 23D(4)(a) GA86 and section 23D(4)(b) GA86);

b) the decision was based, wholly or partly, on errors of fact because GEMA has relied on flawed assumptions and evidence (section 23D(4)(c) GA86);

c) the licence modifications fail to achieve, in whole or in part, the effect stated by GEMA because the outperformance wedge is not a transparent implementation of the UKRN Report, does not appropriately capture expected outperformance and is not necessary in order to address information asymmetry, and the ex-post adjustment mechanism does not remedy the concerns identified (section 23D(4)(d) GA86); and

d) the decision was based, wholly or partly, on errors of law because GEMA failed to take proper account of relevant considerations, acted in defiance of logic, failed properly to inquire, reached conclusions without adequate supporting evidence, placed reliance on evidence and assumptions which are flawed, and because the impact of the wedge is discriminatory and disproportionate for no good reason. GEMA has also failed to comply with its statutory duty under section 5A of the Utilities Act 2000 to conduct an impact assessment on proposals which are important (section 23D(4)(e) GA86).

4.6 GEMA's error in this respect is material in terms of the consumer harm caused, the damage inflicted on regulatory integrity, and the points of economic and regulatory principle at stake which have the clear potential to affect future price controls, as well as its financial impact on the Appellant explained in paragraph 4.1 above.

4.7 The Appellant submits that the outperformance wedge is so flawed and harmful that it should have no place either in the RIIO-T2 Decision or the RIIO framework more generally. The Appellant therefore requests that the CMA quash GEMA's decision to introduce and apply it, and substitute its own decision which removes the outperformance wedge from the Licence, as further explained in section E.

4.8 In assessing this ground, the Appellant requests that the CMA reads the following supporting evidence:

a) NS1, in which Nicola Shaw further explains the reasons why NGG is appealing GEMA's decision to apply the outperformance wedge;

b) CB1, in which Chris Bennett describes the background to and evolution of the outperformance wedge, the reasons why GEMA's decision to impose the outperformance wedge was wrong, and the steps required to remove it from the Licence; and

c) the Wedge Report from Frontier Economics.

B. GEMA's decision

4.9 The concept of an 'outperformance wedge' was first introduced in the report prepared for the UK Regulators Network (**UKRN**) authored by Burns, Mason, Pickford and Wright entitled 'Estimating the cost of capital for implementation of price controls by UK Regulators: An update on Mason, Miles and Wright (2003)' published on 6 March 2018 (the **UKRN Report**)[344]. The idea was based on the premise that in past price controls there was some – albeit "*very patchy*"[345] and "*limited*"[346] – evidence that the expected returns earned by companies tended to be greater than the allowed

344 UKRN Report [**NOA1/16**].
345 UKRN Report, page 74, section 8.3 [**NOA1/16**].
346 UKRN Report, Appendix K, K-178 [**NOA1/16**].

returns set by regulators. This gap was understood to reflect information asymmetry as between the regulator and the licensed company.

4.10 Three of the authors – Mason, Pickford and Wright (**MPW**) – thought that there might be a benefit in seeking to measure the gap between expected and allowed returns (which they termed the 'informational wedge'). Further details and assessment of the recommendations of these authors are provided in the Wedge Report[347]. This also explains MPW's recommended framework for developing a 'regulatory wedge' and how the two wedges were expected to interact.[348] As explained in section C, GEMA has not adopted and taken into account the full recommendations of these authors.

4.11 Importantly, the Wedge Report also highlights that the fourth author of the UKRN Report – Burns – provided a dissenting opinion which emphasised profound problems with this concept and identified the significant consumer harms that such a tool would have were it to be introduced into the UK regulatory framework.[349] These included damaging dynamic efficiency incentives, reducing investor confidence, increasing regulatory risk, and undermining the stability and transparency of the regulatory system which is the cornerstone of the UK regulatory model (thereby increasing the cost of capital). In Burns' view:

> *… regulatory action on outperformance should apply to the cost and output targets not to the RAR[350] – the RAR should be focussed on the WACC and minimising regulatory risk implies that this should be clear and transparent. An arbitrary adjustment factor applied to the RAR would only add to regulatory discretion and risk.*[351]

4.12 As explained in section C, the Appellant contends that GEMA has never properly addressed the concerns raised by Burns, despite their repeated restatement throughout the RIIO-2 process, and they remain at the heart of the error identified in this appeal.

4.13 Ofgem referenced the UKRN Report in its RIIO-2 Framework Consultation, which was also published in March 2018. Ofgem stated that as part of its methodology for setting the cost of equity for RIIO-2 it planned to distinguish between allowed and expected returns.[352]

4.14 In CB1, Chris Bennett explains that NGG, together with other network companies, jointly asked the Energy Networks Association (**ENA**) to commission Oxera Consulting LLP (**Oxera**) to comment on Ofgem's proposals.[353] Oxera's report reflected the widespread concern among licensees that Ofgem's proposals were unjustified and harmful.[354] Nonetheless, in the RIIO-2 Framework Decision, Ofgem repeated its statement that it would 'distinguish' between allowed and expected returns.[355] However, no other detail was provided and, as explained by Chris Bennett in CB1, there was confusion among consultees.[356]

4.15 At the second key consultation stage, the SSMC, Ofgem confirmed its decision to proceed and described its reasons for wanting to distinguish between allowed returns (**AR**) and expected returns (**ER**):[357]

> *We have assessed the issues raised in the UKRN Study against our experience of setting, and reviewing, price controls. We find that the distinction is important and we are persuaded to act upon the UKRN Study advice. We therefore propose that it would be*

347 Wedge Report, pages 9-11, paragraphs 3.2.1-3.2.15 [**MH1/2**].
348 Recommendation MPW 1 was that regulators should set explicit numerical target values for both the regulatory wedge and the informational wedge such that the *sum* of the two wedges should be equal to the desired value of the 'aiming-up' wedge. GEMA's failure to aim-up when setting the COE is discussed in Ground 1.
349 Wedge Report, pages 11-13, paragraphs 3.3.1-3.3.4 [**MH1/2**].
350 Regulatory Allowed Return.
351 UKRN Report, page 88, section 9.3 [**NOA1/16**].
352 Framework Consultation, page 85, paragraph 7.33.7 [**NOA1/2**].
353 CB1, paragraph 23.
354 CB1, paragraph 24.
355 Framework Decision, page 54, paragraph 6.31 [**NOA1/3**].
356 CB1, paragraphs 21-22.
357 SSMC, Finance Annex, pages 50-51, paragraph 3.154 [**NOA1/5**].

beneficial to make a distinction between AR and ER as part of our cost of equity methodology. Two advantages are as follows:

- *Distinguishing between AR and ER allows us to adjust for both positive or negative expectations, as part of RIIO-2. Ultimately, we may estimate an expectation of zero, but a formal approach that distinguishes between AR and ER allows us to maintain consistency.*

- *Distinguishing between AR and ER allows us to reflect investor expectations as the RIIO-2 (or subsequent) price control review progresses – we can therefore recognise that investor expectations can change to reflect the interpretation of the price control settlement, as illustrated in consultations with stakeholders.*

4.16 At this stage, Ofgem proposed that it should set the allowed return below its mid-point estimate of the COE, using its regulatory discretion and judgement to quantify the gap or 'wedge' between AR and ER. This was because of concerns about placing too much weight on historical data.[358] Ofgem did not, however, engage with the more fundamental issues raised by consultees on the harmful impacts of the outperformance wedge identified by Oxera.[359]

4.17 Ofgem's estimate of the expected quantum for the wedge in the SSMC was 50 bps. Ofgem described this as a *"relatively small reduction"*[360] to baseline allowed returns, although confirmed that it would be re-assessed at the DD and FD stages. An assessment of Ofgem's approach to quantum (insofar as it can be inferred from the SSMC) is provided in the Wedge Report.[361]

4.18 National Grid's response to the SSMC described the outperformance wedge as *"conceptually and practically flawed"*.[362] The response emphasised the lack of justification for reducing the allowed returns, the range of adequate tools and data which already exist within the proposed RIIO-2 framework to tackle any perceived 'windfall gains' arising from information asymmetry, and the significant harm that would arise from undermining companies' incentives to outperform. National Grid also directed Ofgem to a report by First Economics which provided several important points of challenge to Ofgem's proposal. A second report from Frontier Economics was submitted to Ofgem by the ENA. A summary of the key points raised in these reports and further details of National Grid's response are provided by Chris Bennett in CB1.[363]

4.19 In the SSMD, Ofgem confirmed that all network companies were opposed to the application of the outperformance wedge on the basis that it was *"arbitrary and duplicative of existing mechanisms"*[364]. However, as Chris Bennett explains[365], Ofgem maintained its commitment to introducing the outperformance wedge. Ofgem noted that it had conducted further analysis, using information from other price controls, to support its view that investors would expect licensees to outperform against RIIO-2 controls.[366] Ofgem did, however, accept that RIIO-1 was not a good indicator of the likely levels of outperformance that might be achieved in RIIO-2, stating "*We agree with NG, SSEN and NPG that the same levels of historical outperformance may not materialise in RIIO-2*". [367]

4.20 Further, Ofgem conceded that it could be that investors would ultimately come to expect that companies would under-perform in RIIO-2, confirming "*ultimately, we may estimate an expectation of zero for (out- or under-) performance*"[368]. In CB1, Chris Bennett sets out his view that Ofgem failed to adequately address concerns raised by consultees.[369]

358 SSMC, Finance Annex, page 52, paragraph 3.162 [**NOA1/5**].
359 CB1, paragraph 23.
360 SSMC, Finance Annex, page 52, paragraph 3.166 [**NOA1/5**].
361 Wedge Report, pages 14-15, paragraphs 3.4.12-3.4.16 [**MH1/2**].
362 CB1, paragraph 29.
363 CB1, paragraphs 30-32.
364 SSMD, Finance Annex, page 68, paragraph 3.246 [**NOA1/7**].
365 CB1, paragraphs 33-34.
366 SSMD, Finance Annex, page 77, paragraph 3.299 [**NOA1/7**].
367 SSMD, Finance Annex, page 77, paragraph 3.299 [**NOA1/7**].
368 SSMD, Finance Annex, page 77, paragraph 3.300 [**NOA1/7**].
369 CB1, paragraphs 35-38.

4.21 In the DD, Ofgem said very little about the negative incentive effects and other significant harms resulting from the introduction of the outperformance wedge, preferring to focus on quantum. Ofgem responded to criticisms that setting the wedge at 50 bps was excessive and arbitrary by annexing three new pieces of analysis, including an analysis of historical performance data (the **historical database**), as further explained in the Wedge Report[370]. This led Ofgem to downgrade its view as to the level of outperformance an equity investor might expect to 25 bps.

4.22 Overall, Ofgem accepted that there remained practical difficulties in estimating outperformance for RIIO-2 but justified maintaining the outperformance wedge on the basis that it "*is not designed to entirely or perfectly capture outperformance*".[371]

4.23 In response to the challenge that introducing the wedge would seriously impair incentives, Ofgem simply commented as follows and did not attempt to engage in any greater detail with the issues being raised:[372]

> *We have sought to ensure that incentive properties will remain for individual companies and sectors. For these reasons, we do not consider that there is a binary choice between the benefit of incentives and accounting for expected outperformance or information asymmetry.*

4.24 Ofgem did, however, consult on a new feature of the outperformance wedge at the DD stage. This was an ex-post adjustment or 'backstop' mechanism which it stated (as tacit acknowledgement of the significant and important harm caused by the outperformance wedge) was intended to "*protect investors*"[373] and "*reinforce stakeholder confidence in the regulatory regime*"[374] in the event that expected outperformance of 25 bps did not materialise. Details of how this mechanism was intended to work are provided in the Wedge Report.[375] A key aspect of the proposal was that the adjustment should be made based on average licensee performance across two groups (gas and electricity).

4.25 The theory behind Ofgem's backstop proposal appeared to be that, even if the outperformance wedge was based on erroneous assumptions (because Ofgem's expectations at the outset of the price control failed to match the reality over the five year period), this could be later remedied by an end of period true-up. A description of the Appellant's DD response on this point, which explained the flaws in Ofgem's logic, and on the other points raised by Ofgem in the DD is provided by Chris Bennett in CB1.[376]

4.26 As part of its DD response, the Appellant submitted a research report by John Earwaker and Nick Fincham entitled 'Information asymmetry and the calibration of price controls' (August 2020) (the **Wedge Survey**)[377]. This summarised the results of a project designed to obtain a wider, independent set of perspectives on the outperformance wedge from experienced ex-regulators and ex-CMA panel members. Details are provided by Chris Bennett in CB1.[378] Critically, respondents to the Wedge Survey disagreed with the fundamental premises upon which Ofgem's outperformance wedge relies. There was little acceptance of the notion that a regulator is not capable of setting up a 'fair bet' for a regulated company, in which the likelihoods of out and under-performance against the price control are broadly balanced. Respondents also reacted strongly to the idea that a regulator is entitled to make a lump-sum deduction from allowed revenues after it has completed its detailed work on cost allowances and performance targets.

4.27 In the FD, Ofgem maintained its DD position and determined that investors would expect outperformance of at least 25 bps (and indeed suggested that this estimate was "*conservative*"[379]). In a last minute change, Ofgem also decided to implement a revised version

370 Wedge Report, page 16, paragraphs 3.4.23-3.4.26 [**MH1/2**].
371 DD, Finance Annex, page 82, paragraph 3.148 [**NOA1/9**].
372 DD, Finance Annex, page 82, paragraph 3.148 [**NOA1/9**].
373 DD, Finance Annex, page 86, in square box headed 'Consultation position' [**NOA1/9**].
374 DD, Finance Annex, page 85, paragraph 3.155 [**NOA1/9**].
375 Wedge Report, page 17, paragraph 3.4.29 [**MH1/2**].
376 CB1, paragraphs 46-49.
377 Wedge Survey, exhibited to CB1 [**CB1/11**].
378 CB1, paragraph 48.
379 FD, Finance Annex, Revised, page 61, paragraph 3.155 [**NOA1/12**].

of the backstop mechanism to provide a licensee-specific 'top-up' allowance of up to 25 bps for any licensee with individual outperformance of less than 25 bps. This change was not consulted on.[380]

4.28 The decisions made in the FD were given effect by GEMA in the RIIO-T2 Decision, making it the first and only regulator to introduce and apply an outperformance wedge of this nature.

C. GEMA's errors

4.29 The Appellant submits that GEMA was wrong to introduce and apply the outperformance wedge because it is **unjustified** and **harmful**. This is explained more fully below and by Chris Bennett in CB1.

(1) GEMA's outperformance wedge is unjustified

(a) It is wrong to make a final, significant deduction from allowed returns after the price control has been calibrated

4.30 GEMA was wrong to make a final, significant deduction from allowed returns in the form of the outperformance wedge, after the price control has been calibrated. This is for the following two reasons.

4.31 First, adjusting allowed returns in this manner is wrong as a matter of principle.

4.32 Given well-publicised criticism of RIIO-1[381] and pressure to reduce network returns for RIIO-2, Ofgem has expended significant effort calibrating the price control during a lengthy and detailed multi-year review process. It has drilled down to an unprecedented level of detail and made use of a sophisticated range of regulatory tools for setting funding for defined outputs, all aimed at or having the consequence of limiting any potential for outperformance based on information asymmetry. The details of this process are more fully explained by Chris Bennett in CB1[382] and are also addressed in 1(b) below.

4.33 This intensive process has resulted in a final price control package for RIIO-T2 with a markedly more forensic calibration of outputs and allowances than preceding price controls, and with a real focus on ensuring there is no scope for 'windfall gains' from information asymmetry.

4.34 Against this backdrop, Ofgem's unevidenced contention that it needs a further specific intervention in the form of the outperformance wedge to mop up inevitable regulatory error based on information asymmetry is confusing. It is clearly wrong at the end of such a detailed and exhaustive process to deduct (an arbitrary) 25 bps off allowed returns, and equally self-evident that any such action is much more likely to increase regulatory error than to reduce it.

4.35 Ofgem's deduction should be viewed, in intent and in effect, as an overlay to Ofgem's totex allowances and performance benchmarks that stretches a set of already carefully and deliberately calibrated targets to an even more demanding level. It is clearly wrong as a matter of principle for Ofgem to make this significant deduction in such circumstances.

4.36 In all other aspects of its review, Ofgem's judgements were bounded by the evidence and reasoning that it was required to adduce for each and every adjustment that it made to NGG's business plan. However, Ofgem effectively discarded these boundaries when it determined that it was entitled to apply a final, unevidenced, lump-sum deduction to allowed returns at the very last stage in its price control calculations.

380 CB1, paragraphs 52-53.
381 Including from Citizens Advice and the National Audit Office.
382 CB1, paragraphs 65-73.

4.37 The Appellant notes that concerns about the principle of introducing a lump-sum deduction featured prominently in responses to the Wedge Survey:[383]

> *Several of the individuals in this group told us they disliked the concept of a final, stand-alone, catch-all down-sizing of revenues and considered that it would be much better for a regulator to express any additional challenge that they felt it necessary to give a regulated firm earlier and more directly within one or more of their price control building blocks.*

4.38 This echoes Burns in the UKRN Report, who concluded that:[384]

> *…any historical issues arising from differences between RER and RAR should be addressed through a robust and evidence-based approach to setting cost and output target and incentive rates, not through applying an arbitrary adjustment mechanism to the RAR.*

4.39 The Appellant submits that GEMA was wrong to dismiss these objections in principle and fail properly to take these relevant considerations into account.

4.40 Second, it is wrong to make such a material unjustified deduction from allowed returns after the price control has been calibrated.

4.41 GEMA's deduction is equivalent to an expected 3.6% or £75 million underspend of baseline totex during the RIIO-T2 period. This clearly demonstrates that GEMA's deduction is neither a small number nor a simple rounding exercise.

4.42 As Chris Bennett highlights[385], when interviewees in the Wedge Survey were asked about a 5% outperformance wedge:[386]

> *…the overall feeling was that 5% is a large number. Several individuals remarked that one would need to assume that a regulator had under-estimated the scope for new year-on-year efficiency savings by the equivalent of 2% per annum in order to be persuaded that the regulator should allow for a 5% expenditure deduction in all five years of a typical five-year price control period. It was put to us that it was unlikely that regulators would systematically make errors of this magnitude in every price control in every one of the UK's regulated sectors.*

4.43 Indeed, if an unevidenced lump-sum deduction of this magnitude is GEMA being "*cautious*" in its "*approach to deploying an important principle*"[387], the materiality of GEMA's error in relation to the outperformance wedge – both now and in terms of future precedent – must be beyond doubt.

(b) There is no need to make a final, significant deduction from allowed returns given the extensive range of existing and new regulatory tools available, and used, in RIIO-T2 to address information asymmetry effectively

4.44 GEMA's contention that it needs to make a final, significant deduction from allowed returns in order to address information asymmetry is wrong for the following four reasons.

4.45 First, GEMA already has an extensive range of 'tried and tested' regulatory tools which it has used to address information asymmetry in RIIO-T2.

4.46 These tools are described by Chris Bennett in CB1[388] and also discussed in the Wedge Report.[389] They include: cost benchmarking, output incentive benchmarking, cost sharing factors and calibration of ODI incentive rates, annual stretch targets on cost allowances and ODI targets, caps and collars on individual incentives, input from a wide range of informed stakeholders including

383 Wedge Survey, page 17, section 4.5, exhibited to CB1 [**CB1/11**].
384 UKRN Report, page 81, section 9.1 [**NOA1/16**].
385 CB1, paragraph 60.
386 Wedge Survey, page 20, section 4.6, exhibited to CB1 [**CB1/11**].
387 FD, Finance Annex, Revised, page 64, paragraph 3.165 [**NOA1/12**].
388 CB1, paragraphs 65-68.
389 Wedge Report, pages 23-24, paragraphs 4.2.13-4.2.16 [**MH1/2**].

User Groups and Challenge Groups, and the resetting of targets at the start of each new price control. These tools are supported by obligatory annual reporting and strong information gathering powers under both statute and the Licence.[390]

4.47 As Chris Bennett explains, GEMA has significantly increased its use of this existing and substantial toolkit in RIIO-T2.

4.48 Second, GEMA has bolstered its established toolkit by adding a significant number of new tools in RIIO-T2 designed to address information asymmetry.

4.49 These are described in the Wedge Report[391] and by Chris Bennett in CB1[392] but, at a high level, include:

a) Significant external scrutiny of company business plans prior to their submission to Ofgem and a new mechanism, the Business Plan Incentive (**BPI**), to incentivise the provision of robust information and under which companies received rewards or substantial penalties based on Ofgem's assessment of the quality of the plans;

b) An extensive assessment and challenge of the need, scope and cost of all investments and operating costs in the business plan, carried out by Ofgem (including its new in-house engineering team);

c) Use of comparative benchmarking and new econometric methodologies where applicable in order to set allowances independent of company forecasts;

d) More sophisticated and lower sharing factors;

e) Adoption of a range of funding approaches, including a more cautious approach to providing up-front funding and extensive use of uncertainty mechanisms (**UMs**) across a far greater proportion of the cost base;

f) Price Control Deliverables (**PCDs**) linking allowances to the delivery of specified outputs (which may be reduced if the output is not fully delivered);

g) Use-it-or-lose-it (**UIOLI**) allowances, which are not subject to the Totex Incentive Mechanism, and in respect of which there is no possibility of companies outperforming; and

h) the Return Adjustment Mechanism (**RAM**) which is layered on to other measures to further restrict the headline returns a company can earn.

4.50 In addition to the above, Ofgem has further strengthened its information gathering powers under the Licence, as described in the Wedge Report.[393]

4.51 As Chris Bennett emphasises in CB1[394], GEMA has made comprehensive use of these new tools in RIIO-T2, 'tightening the screws' on its calibration of the price control with an unwavering focus on closing off material sources of outperformance from RIIO-1 and more generally. In so doing, it has acknowledged "*that more challenging targets and a higher degree of scrutiny of Business Plans in RIIO-2 might reduce the scope for over-performance.*"[395]

4.52 Third, GEMA has not explained in any meaningful way why its extensive array of regulatory tools does not adequately address its concerns regarding information asymmetry.

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390 For example, the Licence Conditions require compliance with GEMA's Regulatory Instructions and Guidance, containing detailed reporting requirements (see Standard Special Condition A40) [**NOA1/27**]. GEMA's information gathering powers include its statutory powers under section 38 GA86 [**NOA1/30**] and powers included in the Licence such as the general power to require information under Standard Special Condition A26 [**NOA1/27**].

391 Wedge Report, pages 24-26, paragraphs 4.2.17-4.2.26 [**MH1/2**].

392 CB1, paragraphs 69-73.

393 Wedge Report, page 26, paragraph 4.2.21 [**MH1/2**].

394 CB1, paragraphs 70-73.

395 FD, Impact Assessment Annex, page 19, paragraph 3.13 [**NOA1/13**].

4.53 In the DD, GEMA conceded that there were other ways in which price controls addressed information asymmetry[396], but made no reference to the range of tools available in RIIO-2 or any attempt to explain why the outperformance wedge was required over and above these tools.

4.54 It asserted that its historical database:[397]

> *…provides a strong basis for [its] conclusion that, despite the measures included in [its] proposed RIIO-2 price controls, companies (on average) have the scope to outperform, and investors can have a reasonable expectation of outperformance (emphasis added)*

4.55 The flaws in this logic are manifest, as the new RIIO-2 measures have not yet been given an opportunity to work. This is tantamount to saying that, irrespective of what the regulator does, investors will always expect to outperform, so the wedge is justified. This is clearly wrong (and indeed contrary to Ofgem's statement highlighted in paragraph 4.20 above).

4.56 Here, as set out above and confirmed by Chris Bennett in CB1[398], there are substantial changes between RIIO-T1 and RIIO-T2, with the result that the scope for outperformance in RIIO-T2 is curtailed. This is a relevant factor to be taken into account – both by GEMA and by investors.

4.57 In the DD, GEMA purported to consider "*whether other mechanisms may address, at least in part, expectations of outperformance, and particularly the information asymmetry basis*" by reference to policy comparisons between RIIO-2 and other price controls (with a focus on RIIO-1).[399] However, as Chris Bennett explains, GEMA failed to properly address this issue between the DD and the FD.[400]

4.58 In the FD, GEMA simply stated:[401]

> *We considered in detail in the DDs the issue of information asymmetry and remedial mechanisms within the price control. We continue to believe that there is an information asymmetry between the regulator and the regulated companies, and that other mechanisms in the price control do not fully compensate for this.*

4.59 The Appellant submits that this is an example of GEMA's 'closed mindset' in relation to the introduction of the outperformance wedge – which it decided would form part of the RIIO-2 package at SSMD stage – and this is explored more fully in paragraph 4.86 below.

4.60 Fourth, GEMA's action in introducing and applying the outperformance wedge was contrary to its overarching statutory duty to 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*" (emphasis added).

4.61 This is because:

a) GEMA already has the necessary tools and has used them comprehensively in RIIO-T2 to address information asymmetry, as set out above; and

b) it has not yet given these tools an opportunity to work before determining that further action is needed.

4.62 Given all of these tools, there was no need for GEMA to introduce a further novel mechanism. When taking into account this lack of justification and the significant harm it causes (as further explained in 2(a) and 2(b) below), it is clear that GEMA failed to properly balance the issues and that the outperformance wedge is disproportionate.

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396 DD, Finance Annex, page 82, paragraph 3.149 [**NOA1/9**].
397 DD, Finance Annex, page 74, paragraph 3.127 [**NOA1/9**].
398 CB1, paragraphs 72-73.
399 DD, Finance Annex, pages 81-82, paragraph 3.147 [**NOA1/9**].
400 CB1, paragraph 50.
401 FD, Finance Annex, Revised, page 63, paragraph 3.163 [**NOA1/12**].

4.63 In fact, as the history shows, GEMA had decided to introduce the outperformance wedge before the assessment phase of the price review had even begun (as explained in section B).

4.64 This is a clear error, as set out in the Wedge Report:[402]

> *Even if the outperformance wedge did not cause wider harm, in order to support the case for its application we consider that it would be necessary for the regulator to take account of the degree of stretch on costs and ODIs, the challenge created by its ongoing efficiency assumption, the effect of any new regulatory tools that had been introduced and so on. But we see no evidence that these issues have been properly considered. Ofgem presented no specific evidence to support the wedge, only the historical analyses and MAR evidence discussed above. This failure to consider whether enough has been done already, highlights important deficiencies in the case for introducing the wedge at all.*

4.65 The Appellant further notes in this context the CMA's recent comments regarding Ofwat's novel and unjustified gearing outperformance sharing mechanism, namely that "*the case for further interventions … should be targeted at risks which are not effectively addressed by the existing regime*".[403]

4.66 The Appellant contends that information asymmetry has been effectively addressed in RIIO-T2 and the outperformance wedge is an unjustified and unnecessary additional intervention.

4.67 In addition, it is also the case that the regulatory action taken by GEMA in introducing and applying the outperformance wedge is neither transparent (see 1(c) below) nor proportionate (see 1(d) below).

(c) The decision is poorly reasoned and relies on fundamentally flawed assumptions and evidence

4.68 GEMA's rationale for introducing and applying the outperformance wedge was wrong for the following five reasons.

4.69 First, GEMA offered no clear evidence on which to base an expectation that companies will outperform their regulatory settlements in RIIO-2 due to information asymmetry.

4.70 As explained by Chris Bennett in CB1[404], GEMA initially indicated in the SSMD that the informational wedge could be positive or negative. This recognised that, as regulator, it had the tools to set the level of challenge on a price control. However, over time, this narrative has fallen away and been replaced by 'companies always win' – which assumes that companies can outperform irrespective of the level of challenge and the incentive properties in the other parameters.

4.71 In support of this new narrative, GEMA belatedly compiled and brought forward at the DD stage a historical database (consistent with the recommendation of MPW in the UKRN Report[405]). However, GEMA itself conceded in the FD that it "*supports a view that outperformance dominates underperformance*" [406] not more.

4.72 In fact, GEMA's evidence provided examples of symmetric performance, underperformance, and outperformance, and this spread of outcomes is what regulators would typically aim for when setting price controls.

4.73 GEMA stated that its analysis of historical data reveals a "*tendency*" towards totex underspending and it "*arrived at the conclusion that this could only be explained if we accept that networks benefit*

402 Wedge Report, page 33, paragraph 4.3.3 [**MH1/2**].
403 PR19 PFs, page 658, paragraph 9.624 [**NOA1/17**].
404 CB1, paragraphs 76-81.
405 Recommendation MPW 2 was that regulators should assemble a systematic and comprehensive database of historic outperformance, to enable them to make their best-informed forecast of the "informational wedge", the gap between the RER and the RAR. UKRN Report, page 74, section 8.3 [**NOA1/16**].
406 FD, Finance Annex, page 61, paragraph 3.157 [**NOA1/12**]. See also Burns in the UKRN Report, who states: "It is noticeable that the pattern of outperformance varies over time, across sectors, and between cost and output performance." UKRN Report, page 87, section 9.3 [**NOA1/16**].

from informational asymmetry".[407] This is a significant leap. In fact, the historical database does not – and cannot – show that information asymmetry is driving any outperformance (and the spread of outcomes would of course tend to suggest that it is not).

4.74 Companies can outperform their regulatory settlements for a variety of reasons, some of which are indicative of nothing more than a functioning regulatory regime. For example, outperformance can be the result of companies responding positively to incentives (as, presumably, was hoped and intended by the regulator in setting them) and working hard to exceed expectations around efficiency and service, including through innovation. As Chris Bennett explains in CB1[408], RIIO-1 was designed to incentivise outperformance and thereby deliver positive benefits for consumers. Indeed, Chris Bennett emphasises:[409]

> *Overall, I believe it is abundantly clear that there is no realistic prospect of any 'easy wins' on outperformance arising in RIIO-2 because of information asymmetry. As I explain below, any outperformance that is achieved in RIIO-2 will be the result of sheer hard work on the part of the management team and others to deliver transformation programmes. I cannot understand why Ofgem would want to compromise companies' abilities to strive to do their very best to perform given the clear benefits that will arise for consumers. It seems to me that this is the very core purpose of what RIIO stands for.*

4.75 Outperformance can also reflect the fact that there are risks held by network companies which are difficult to forecast and can outturn either positively or negatively due to external factors. As explained in the Wedge Report, some information is unknown to both company and regulator, which creates a shared uncertainty.[410] As Chris Bennett describes in CB1[411], an example of shared uncertainty where the outturn for NGG was negative was on asset condition. However, this had nothing to do with information asymmetry and the RIIO-1 incentives meant that NGG minimised the overspend while delivering the outputs required.

4.76 As Burns recommended in the UKRN Report:[412]

> *Regulators should … ensure that they are able to broadly understand the sources of outperformance amongst the companies they regulate in order to take those insights into future price control reviews.*

4.77 In addition, there is, of course, no means of extrapolating what is or might be the result of information asymmetry, and no evidence to indicate how the impact on returns might differ if caused by information asymmetry rather than 'earned' performance.

4.78 Having regard to the above, it is clear that there was no basis for GEMA's simplistic equation of 25 bps outperformance with 'easy money'[413] and the foundation for GEMA's decision to introduce and apply the outperformance wedge was wrong. Certainly, it fell far short of the standard identified by the CMA in the NPg RIIO-ED1 appeal as being necessary to protect consumers:

> *…robust, evidence-based decision-making, taking into account the potential limits of evidence on issues where there is significant uncertainty, is itself central to protecting the interests of consumers.*[414]

4.79 Second, GEMA's contention that a final, significant deduction is justified because of the difficulties of balancing a price control (owing to information asymmetry) was unfounded.

4.80 As noted in the Wedge Survey:[415]

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407 FD, Impact Assessment Annex, page 19, paragraph 3.13 [**NOA1/13**].
408 CB1, paragraph 80.
409 CB1, paragraph 73.
410 Wedge Report, page 23, paragraph 4.2.5 [**MH1/2**].
411 CB1, paragraph 81.
412 UKRN Report, page 88, section 9.3 [**NOA1/16**].
413 FD, Finance Annex, Revised, page 66, paragraph 3.174 [**NOA1/12**].
414 NPg Final Determination Report, paragraph 4.59 [**NOA1/21**].
415 Wedge Survey, page 25, section 5.4, exhibited to CB1 [**CB1/11**].

> *…the idea that a regulator should, with one hand, strive hard to set fair expenditure allowances and output targets yet, with the other, concede that it is doomed to fall short – crucially, without any contemporaneous evidence to support this conclusion – left the vast majority of our regulatory experts feeling very uncomfortable.*

4.81 The Wedge Report provides numerous examples of recent price controls, from different sectors and circumstances, that have been set broadly symmetrically using the traditional regulatory toolkit[416] – e.g. Ofwat's PR04, PR09 and PR14 price controls and the CMA's price control determination for Northern Ireland Electricity plc.

4.82 These examples demonstrate that a fair price control can be achieved without recourse to final, significant lump-sum deductions if existing tools are used appropriately.

4.83 Third, whilst GEMA attempted (belatedly) to find an evidential anchor for the outperformance wedge in history, there is no good reason why past performance is a reliable guide to the future. Indeed, this has previously been acknowledged by GEMA itself: [417]

> *We agree with Frontier that historical levels of outperformance may not necessarily provide a reliable guide to future outperformance.*

4.84 This is obviously the case where, as here, there are significant relevant changes between price controls, as further evidenced by Chris Bennett in CB1.[418]

4.85 This is not, however, reflected in the two key pieces of analysis which GEMA put forward at the DD stage in support of the outperformance wedge, namely its (a) restatement of RIIO-1 performance on a RIIO-2 basis; and (b) historical database. As explained in the Wedge Report[419], both of these analyses were flawed as a result of, among other things, failing to take account of relevant changes made at RIIO-2, which renders them uninformative as to the potential financial performance of network companies. The other flaws in this evidence – and GEMA's flawed MARs analysis – are also addressed in the Wedge Report[420].

4.86 In any event, it is, of course, unsurprising that GEMA's reasoning and evidential basis for the outperformance wedge was flawed and without merit. This is because, as set out above, GEMA decided at an early stage (SSMD) that the outperformance wedge would form part of the RIIO-2 package, before companies had submitted draft or final business plans and therefore before any work by GEMA to assess such plans had taken place. It has subsequently shifted its reasoning over time, as described by Chris Bennett in section C of CB1 where he discusses the evolution of the outperformance wedge.

4.87 Fourth, the size of the outperformance wedge is arbitrary. As explained in the Wedge Report[421], it is not clear how GEMA has determined the size of the outperformance wedge and there appears to have been a significant lack of rigour in this regard.[422] We do know, however, that it was originally 50 bps and was then halved to 25 bps in the DD following criticisms that it was arbitrary and excessive.

4.88 In the FD, GEMA openly acknowledges that the size of the outperformance wedge is based on discretionary judgement:[423]

> *In light of arguments by licensees, we considered carefully whether an adjustment of 0.25% would represent an excessive adjustment based on discretionary judgement. For reference, the CMA's PR19 PFs demonstrate that it has added 0.5% to allowed returns based on an aiming up rationale. The CMA's adjustment, which is twice as large, suggests*

416 Wedge Report, page 31, paragraph 4.2.49 [**MH1/2**].
417 SSMD, Finance Annex, page 76, paragraph 3.297 [**NOA1/7**].
418 CB1, paragraphs 82-88.
419 Wedge Report, pages 28-30, paragraphs 4.2.37-4.2.47 [**MH1/2**].
420 Wedge Report, pages 30-33, paragraphs 4.2.48-4.2.57 [**MH1/2**].
421 Wedge Report, pages 51, paragraph 4.9.2 [**MH1/2**].
422 See also CB1, paragraphs 43-44.
423 FD, Finance Annex, page 64, paragraph 3.166 [**NOA1/12**].

> *our view in Step 3 is reasonable, particularly given the comparative depths of evidence and the additional protection afforded by an ex-post adjustment mechanism.*

4.89 Whilst GEMA refers to "*the comparative depths of evidence*", the basis for this assertion is not clear.

4.90 In fact, there is no obvious evidential support for GEMA's discretionary judgement (or indeed for the outperformance wedge more generally). In this regard, we note that, in the NPg RIIO-ED1 appeal, the CMA stated:[424]

> *In the absence of evidential support for the judgement, GEMA's discretion cannot, in our view, be treated as sufficient to justify the adjustment…*

4.91 We further note the CMA's approach in the Firmus appeal, in which it stated[425]:

> *We have … reached the view that the [regulator] made an error when it decided to make an adjustment … which was not based on evidence, in circumstances in which it could and should have sought to obtain evidence on which to base its decision.*

4.92 As explained by Chris Bennett in CB1[426], calibrating the outperformance wedge has proved to be an insurmountable challenge for GEMA as the justification in both the DD and the FD falls short of what is required. Also, focusing on the calibration of the outperformance wedge has occupied GEMA for much of the price control process, leading it to significantly alter its position rather than ultimately considering whether the wedge is justified in the first place.

4.93 Fifth, GEMA has produced very limited evidence on the effects of the outperformance wedge (including the backstop mechanism), and has failed to conduct any appropriate impact assessment, despite the novelty and importance of the outperformance wedge as a regulatory tool and, as indicated by the UKRN Report and in the Wedge Survey, the "*fierce debate*"[427] it has provoked.

4.94 As Chris Bennett explains in CB1[428], GEMA published its RIIO-2 Impact Assessment towards the end of the RIIO-2 process, after publication of the DD. Given concern regarding its adequacy, the ENA commissioned PwC to critique that Impact Assessment from a best practice perspective. PwC concluded that Ofgem's Impact Assessment fell *"significantly short of best practice"*[429], noting that *"for most of Ofgem's proposed new policies for RIIO-2, it is hard to establish what problem they are trying to address"*[430].

4.95 In CB1[431], Chris Bennett sets out PwC's conclusions in relation to Ofgem's Impact Assessment of the outperformance wedge. In summary, PwC observed the following shortfalls:[432]

a) Problem orientation: Ofgem failed to explain *"how the informational asymmetry problem being solved by the outperformance wedge is different to other information asymmetry problems being solved by other policy changes*". PwC noted this could result in "*overcorrection*".

b) Exhaustiveness: Ofgem failed to assess the "*different impacts that the introduction of the outperformance wedge will have on both the network companies and customers*". PwC highlighted the example that "*companies might expect a lower availability of equity financing due to the lower equity returns they can generate*" and concluded that "*this might*

424 NPg Final Determination Report, paragraph 4.140 [**NOA1/21**].
425 Firmus Final Determination Report, paragraph 5.147 [**NOA1/23**].
426 CB1, paragraph 44.
427 Wedge Survey, page 3, Foreword, exhibited to CB1 [**CB1/11**].
428 CB1, paragraphs 91-94.
429 'Review of Ofgem's RIIO-2 Network Price Controls Draft Determinations Impact Assessment', a report by PwC for the Energy Networks Association, October 2020, page 4, exhibited to CB1 [**CB1/12**].
430 Ibid, page 5, exhibited to CB1 [**CB1/12**].
431 CB1, paragraphs 92-93.
432 'Review of Ofgem's RIIO-2 Network Price Controls Draft Determinations Impact Assessment', a report by PwC for the Energy Networks Association, October 2020, page 62, exhibited to CB1 [**CB1/12**].

have a further effect on future investment and quality of customer service, creating a longer-term disbenefit from this policy".

c) Granularity (decision-making): PwC considered that Ofgem had failed to either assess or endorse the policy change *"on the basis of its individual merits"*; Ofgem had only assessed it *"as part of the overall change in the allowed return"*.

4.96 It is concerning that Ofgem failed adequately to consider the effects of introducing the outperformance wedge given the range of negative consequences and the fact that these had been brought to Ofgem's attention by stakeholders at every stage of the price control process. Moreover, as Chris Bennett explains in CB1,[433] given the outperformance wedge is a novel mechanism which will have a significant impact, Ofgem should have conducted a separate and specific impact assessment in order to justify its inclusion in the regulatory framework, consistent with the statutory requirement to do so in section 5A of the Utilities Act 2000.

4.97 The need for a specific assessment was particularly strong given the impact on consumers. As Burns stated in his dissenting view in the UKRN Report:[434]

> *There are many mechanisms to ensure that profits lie within a socially acceptable range, but some of these mechanisms would be extremely detrimental to customers, whilst others would be much less so. The art of regulation is to promote incentives for efficiency for the long-term benefit of customers, whilst achieving a fair settlement in the shorter term with a minimum of disruption to the longer term goal.*

4.98 The Appellant also notes that, in the PR19 PFs, the CMA stated that the gearing outperformance sharing mechanism "*would represent a significant break from a well-established regulatory approach*"[435] without "*offering sufficient evidence, clarity of justification or time to make cost-effective adjustments*"[436]. It also emphasised the "*limited evidence*" provided by Ofwat on the "*actual effects*" of the mechanism[437].

(d) It has a discriminatory and disproportionate impact on different licensees for no good reason

4.99 GEMA's application of the outperformance wedge is also wrong because it has a discriminatory and disproportionate impact on different licensees.

4.100 A 25 bps deduction from the allowed return on equity is applied equally at RIIO-2 to all licensees, across different sectors, even though the extent to which companies can outperform must logically depend on factors specific to each company.

4.101 There is a particular issue in this regard with the way in which a 25 bps deduction converts into required totex savings and service outperformance. As explained in the Wedge Report[438]:

> *A company that has a higher RAV to totex ratio would require a higher proportionate level of totex outperformance than a company with a lower RAV to totex ratio, in order to achieve the same amount of outperformance. The wedge then is implicitly requiring some companies to outperform more than others for no obvious reason other than the size of their RAV in relation to totex.*

4.102 This discriminatory and disproportionate impact can best be shown by reference to the degree of totex challenge implied for each of the individual TOs and GDNs by the blanket 25 bps outperformance wedge. Analysis included in the Wedge Report is as follows:[439]

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433 CB1, paragraph 94.
434 UKRN Report, page 88, section 9.2 [**NOA1/16**].
435 PR19 PFs, page 658, paragraph 9.628 [**NOA1/17**].
436 PR19 PFs, page 658, paragraph 9.628 [**NOA1/17**].
437 PR19 PFs, page 658, paragraph 9.628 [**NOA1/17**].
438 Wedge Report, pages 35-36, paragraph 4.3.10 [**MH1/2**].
439 Wedge Report, pages 33-34, paragraph 4.3.4, Figure 2 [**MH1/2**].

	Baseline totex underspend required to achieve 25 bps of RoRE
GDNs	
London	2.0%
East	2.1%
North West	2.2%
West Mid	2.0%
Northern	1.9%
Scotland	1.9%
Southern	2.2%
Wales and West	1.9%
TOs	
NGET	**3.6%**
NGG	**3.6%**
SHET	2.6%
SPT	2.2%

Source: Wedge Report - *Figure 2 Analysis of the arbitrary degree of totex challenge implied by the application of a common 25 bps wedge*

4.103 The table shows that NGG needs to underspend 3.6% of totex per annum of the five year RIIO-2 price control, whereas this is between 1.9% and 2.2% for the GDNs and between 2.2% and 2.6% for the other TOs (except NGET, for whom the underspend required is the same as that for NGG). These are striking figures on any analysis, and clearly demonstrate that both NGET and NGG are being asked to deliver far more savings than those required of other licensees.

4.104 GEMA has offered no explanation or justification as to why the effect of the outperformance wedge, in terms of the effort that a company must expend in order to make up its reduced revenues, should differ so markedly across licensees, and why NGG (and NGET) should bear such disproportionately large impact relative to other companies. As Chris Bennett states:[440]

> *In my view this outcome is clearly unjustified because Ofgem has already dealt with its perceived views on cost confidence between the sectors through the use of different sharing factors. To impact NGG more than other networks without explanation or justification is discriminatory and is further evidence why the wedge must be removed.*

(2) GEMA's outperformance wedge is harmful

(a) The outperformance wedge will cause direct and enduring harm to existing and future consumers

4.105 GEMA's application of the outperformance wedge will cause direct and enduring harm to consumers for the following four reasons. These are explained in more detail in section 4.4 of

[440] CB1, paragraph 90.

the Wedge Report and supported by evidence provided by Nicola Shaw and Chris Bennett in NS1 and CB1[441] respectively.

4.106 First, the outperformance wedge **undermines productivity incentives**.

4.107 It is an established feature of regulation that past performance informs, to a degree, future cost/performance targets – this is known as the "ratchet effect". However, as explained in the Wedge Report, the introduction of the outperformance wedge leads to a so-called "double ratchet" as *"outperformance now brings not only tougher targets, but also lower returns"*[442]. In effect, Ofgem has signalled that any outperformance from innovation and efficiency will be clawed back through a negative downward adjustment to allowed returns in the next period.

4.108 The effect of this "double ratchet" is that network companies are dis-incentivised to innovate and (out)perform, for fear of being penalised in the form of an *"enduring reduction in allowed returns in future that will persist over multiple regulatory periods"*[443]. This fear is entirely reasonable since *"Ofgem's database of historical outperformance includes price controls back to the beginning of private ownership and incentive regulation"*[444].

4.109 This undermining of the incentives to strive for efficiencies is directly detrimental to the interests of consumers. The Wedge Report states that the costs of weaker productivity performance, driven by weaker incentives, will outweigh the benefits to consumers from lower returns in the medium term. It further explains that the regulated company must be:[445]

> *…encouraged to "stretch every sinew", not just once, or at price controls, but continuously, in order to manage the wealth of uncertainties that will act on the cost to deliver a given level of performance, many of which will be at least partially within their control. But more importantly to search for and discover the things it currently does not know, the new approaches that lower costs and drive better service to deliver enduring good outcomes for consumers.*

4.110 Burns makes similar observations in his dissenting view in the UKRN Report. He states that "a built-in feature of incentive-based regulation is to promote information revelation and cost discovery, and this requires that companies are given profit incentives to beat the regulator's targets"[446]. He further argues that the introduction of an outperformance wedge will significantly undermine incentives and alter companies' behaviour, leading "to a range of unintended consequences, including poorer performance".[447] This harm has therefore been clearly identified from the outset. This harmful impact on incentives is discussed in NS1 by Nicola Shaw, who states:[448]

> *I am concerned that the outperformance wedge blurs and confuses the efficiency incentive I describe above as it puts the shareholder and consumer objectives in opposition. This might not sound serious to anyone unfamiliar with the regulatory framework, but remember that this efficiency incentive is the key pillar on which energy networks' price controls have relied in the last thirty years. Without this crucial incentive, the improvements to service quality and cost reductions which have been delivered in that time would not have been realised. That is why developments which undermine the efficiency incentive are so dangerous to the future performance of the sector.*

4.111 Further, as explained by Chris Bennett in CB1[449], one of the big successes of the RIIO regulatory framework is strong incentivisation of dynamic efficiency to deliver productivity and service improvements. However, even with the right incentives in place, continually driving for ever greater productivity is not an easy task and involves substantial costs (borne up front), risks (as

441 CB1, section D(5).
442 Wedge Report, page 38, paragraph 4.4.14 [**MH1/2**].
443 Wedge Report, page 38, paragraph 4.4.15 [**MH1/2**].
444 Wedge Report, page 38, paragraph 4.4.16 [**MH1/2**].
445 Wedge Report, page 22, paragraph 4.2.6 [**MH1/2**].
446 UKRN Report, page 86, section 9.3 [**NOA1/16**].
447 UKRN Report, page 87, section 9.3 [**NOA1/16**].
448 NS1, paragraph 65.
449 CB1, paragraph 96.

the benefits are always uncertain) and efforts (including the right capabilities, culture and behaviours to deliver). Chris Bennett explains that if a regulator removes or weakens the incentives framework, there may be no incentive on companies to make the effort to improve. This obviously has serious implications for consumers.[450]

4.112 In the Wedge Report, Frontier Economics analyse – by way of a stylised model calibrated using RIIO-2 RAVs and expected sector totex – the scale of the productivity gains at risk from lost incentive strength. In summary, the results show that *"the effect of losing even a small proportion of the expected efficiency gains going forward would cause large consumer detriments"*[451].

4.113 Frontier Economics conclude: [452]

> *"One of the most important aspects of the regulator's role is to create a framework that encourages companies to keep making efficiency gains. Over time, given the scale of the GB energy networks, these marginal gains lead to huge societal savings. Ofgem's proposed outperformance wedge puts these gains at risk creating a long lasting and material detriment to consumer interests. This is the case even if the outperformance wedge were only to create a small reduction in the vigour with which companies pursue savings."*

4.114 In CB1, Chris Bennett illustrates how the outperformance wedge will stunt NGG's productivity in practice by reference to three hypothetical (but plausible) scenarios that could play out during the RIIO-2 price control period.[453] He explains that the inclusion of the outperformance wedge (including the backstop mechanism) in the RIIO-2 framework *"drives a risk of lower productivity"* and *"provides little incentive for management to invest the time, effort and cost of taking on a new round of efficiency savings".*[454]

4.115 The consequence is that there will be transformative projects which would otherwise be progressed, but which may not go ahead under RIIO-T2. This is obviously of significant concern at a time when it is critical to drive efficiencies given the increase in investment required to deliver Net Zero by 2050.

4.116 Second, in reducing the allowed equity return by 25bps, GEMA's outperformance wedge **damages incentives to invest**. As Nicola Shaw explains in section B of NS1, a substantial amount of investment is required in order to deliver Net Zero by 2050. For example, while future gas demand is highly uncertain given uncertainty over how the UK will fuel space and water heating in future, gas networks need to invest to allow for alternative inputs of unconventional gas (including hydrogen). It is therefore imperative that the regulatory framework incentivises investment in order for network companies to deliver transformations to the benefit of consumers.

4.117 As Chris Bennett explains in CB1[455], the harmful impact of the outperformance wedge on incentives to invest is, in part, the same as the harmful impact of having an allowed equity return that is lower than the COE. In summary, this results in new investments during RIIO-2 being *"value destructive"* [456] and less ambitious future business plans. This is addressed in Ground 1 of NGG's appeal (section C) and by Darren Pettifer in DP1. However, Chris Bennett explains in CB1 that the outperformance wedge creates *additional* negative impacts on incentives to invest as it confuses the cost benefit analyses (**CBA**), for example the appropriate hurdle rate to use. This potential source of distortion of CBAs impairs management's ability to drive performance.

4.118 The Appellant notes that, in the PR19 Redeterminations, the CMA has recognised the harm to consumers if the *"wider societal benefits of investment are lost"* due to expectations of insufficient investment returns*, "either because companies do not identify investments or put resources into*

450 CB1, paragraphs 96-108.
451 Wedge Report, page 43, paragraph 4.4.38 [**MH1/2**].
452 Wedge Report, page 44, paragraph 4.4.41 [**MH1/2**].
453 CB1, paragraph 102.
454 CB1, paragraph 102.
455 CB1, paragraphs 109-113.
456 CB1, paragraph 109.

planning for them, or because the finance to deliver those investments is unavailable"[457]. It is of course the case that innovation and proactive thinking will be key to delivering Net Zero by 2050.

4.119 Third, the outperformance wedge causes harm by **damaging investor confidence and increasing the cost of capital in the long run**, contrary to the interests of existing and future consumers.

4.120 Frontier Economics concludes that GEMA's introduction and application of the outperformance wedge can be expected to damage investor confidence by increasing "*both actual and perceived regulatory risk*".[458]

4.121 This is because if Ofgem can impinge on the integrity of the allowed return – a core part of the regulatory framework – in RIIO-T2, in a way in which it considers to be *"cautious"*[459] despite the limited evidential justification for its approach, investors, analysts and rating agencies will rightly ask "What next in the future?".[460]

4.122 The Wedge Report notes that the lack of justification, the "arbitrary nature of the adjustment", and the "resulting loss of process transparency adds to perceived higher regulatory risk, and in turn will increase the cost of capital of the sector over time"[461].

4.123 Frontier Economics consider that this will have a *"chilling effect on the appetite for investment in the sector"*[462]. These views are supported by Chris Bennett in CB1.[463]

4.124 Fourth, the outperformance wedge will **undermine equity financeability in RIIO-2** contrary to the interests of existing and future consumers and GEMA's duty to have regard to the need to secure that licensees can finance their licensed activities. This is discussed in section 4.7 of the Wedge Report where Frontier Economics notes "*The wedge will weaken the financeability of the sector, even if Ofgem is right about expected outperformance. Cash will be received more slowly through outperformance, either at the Annual Iteration Process or after RIIO-2 close out during RIIO-3".*[464] As Chris Bennett explains in CB1, *"The wedge adjustment of 25 bps means that the equity return being offered for new equity injected into the business to fund investment is only 4.30% during RIIO-2. In other words, the return being offered is less than the return required"*.[465]

(b) The ex-post adjustment mechanism does not fix these problems but creates some new ones

4.125 The ex-post adjustment mechanism is wrong because it is flawed, harmful and does not achieve the effect stated by GEMA. This is for the following four reasons.

4.126 First, the backstop mechanism exacerbates the harmful properties of the outperformance wedge by creating perverse incentives for companies to no longer seek to outperform. If a company is performing moderately well (i.e. outperforming by no more than 25 bps) then it faces no incentive to seek improved performance.

4.127 As set out in the Wedge Report:[466]

> *If the company were to get "back to zero" and then strop striving, it knows that the next 25 bps of outperformance will end up being given to it anyway (albeit subject to some regulatory risk), by Ofgem at the close out process through the backstop. Within this*

457 Aiming Up Working Paper, paragraph 42(c)(ii) [**NOA1/18**].
458 Wedge Report, page 48, paragraph 4.6.2 [**MH1/2**].
459 FD, Finance Annex, Revised, page 64, paragraph 3.165 [**NOA1/12**].
460 For example, in response to the DD, Moody's stated that the outperformance wedge "represents a departure from established regulatory practice, adherence to which has supported widespread confidence in the stability and predictability of the regime. As such, it is credit negative." Moody's Sector Comment, "RIIO-2 proposals support sector's business risk profile, but legitimacy in greater focus", 3 August 2020, exhibited to CB1 [**CB1/16**].
461 Wedge Report, page 48, paragraph 4.6.6 [**MH1/2**].
462 Wedge Report, page 48, paragraph 4.6.7 [**MH1/2**].
463 CB1, paragraphs 114-119.
464 Wedge Report, page 49, paragraph 4.7.4 [**MH1/2**].
465 CB1, paragraph 121.
466 Wedge Report, page 39, paragraph 4.4.23 [**MH1/2**].

> *deadband, there is actually no marginal incentive on the company to make any effort to improve at all.*

4.128 The Wedge Report states that, while operating within this 'deadband', if NGG spends an extra pound, consumers will fund 61p of that pound through the Totex Incentive Mechanism and Ofgem will then ask consumers to return the remaining 39p through the backstop.[467]

4.129 It also notes:[468]

> *Companies may even face a perverse incentive to push through unnecessary expenditure, as this may be beneficial. A company could spend aggressively late in the price control to meet outcome targets that have not yet been delivered (regardless of the cost) and to be better positioned to meet targets/outperform in future (e.g. bringing forward work that doesn't strictly need to be done now to allow it to submit a lean looking plan next time around). This distortion can only lead to material consumer harm.*

4.130 This is clearly detrimental to consumers. As explained in the Wedge Report[469], the sums that companies may be permitted to spend without consequence are large. In the case of NGG, it would be able to overspend annual allowances by £15.1 million per year. Indeed, if it chose to unwind a full 25 bps of outperformance, and instead receive that compensation via the backstop, it would potentially be free to spend up to £75 million over the final few years of the price control.

4.131 In addition, for the reasons given by Chris Bennett in CB1[470], these distorted incentives exacerbate the harmful effects of the outperformance wedge identified in 2(a) above and result in further lost productivity. This is because transformation programmes require cost and effort and are not riskless. If early transformation programmes do not deliver as planned then, absent the backstop, companies would strive for improvement. However, the existence of the backstop further distorts incentives to embark on new programmes. The fact that it would be better, in some circumstances, for a company to sit back rather than transform is clearly harmful for consumers.

4.132 Second, contrary to Ofgem's assertions that the backstop mechanism will *"protect investors"*[471] and *"reinforce stakeholder confidence in the regulatory regime"*[472], investors can take no comfort in the backstop mechanism.

4.133 As Chris Bennett notes in CB1[473], rating agencies have indicated that they will model the allowed return, rather than the expected return, when assessing credit ratings. Therefore, the backstop mechanism offers no benefits in the assessment of credit quality for the RIIO-2 period.

4.134 Moreover, investors must expect the mechanism to prevail in RIIO-3 regardless of performance in the next five year period for the reasons set out in 2(a) above. Any true-up of returns would therefore automatically be wiped out by the imposition of a further outperformance wedge. It therefore does not address the damage to incentives to invest or investor confidence.

4.135 Third, the outperformance wedge will **weaken financeability in the sector and creates a further increase in regulatory risk**.

4.136 The Wedge Report notes that the outperformance wedge will weaken the financeability of the sector irrespective of whether Ofgem is right about expected outperformance[474]. If Ofgem is right, and 25 bps of outperformance is delivered in the period, financeability will be worse because cash that will be received more slowly as outperformance is not as cash positive in RIIO-2[475]. If Ofgem is wrong, and 25 bps is not delivered, financeability will be weakened much more markedly in

467 Wedge Report, page 41, paragraph 4.4.29 [**MH1/2**].
468 Wedge Report, page 41, paragraph 4.4.30 [**MH1/2**].
469 Wedge Report, pages 41 and 42, paragraph 4.4.31 Figure 4 [**MH1/2**].
470 CB1, paragraph 122.
471 DD, Finance Annex, page 86, in square box headed 'Consultation position' [**NOA1/9**].
472 DD, Finance Annex, page 85, paragraph 3.155 [**NOA1/9**].
473 CB1, paragraph 117.
474 Wedge Report, page 49, paragraph 4.7.4 [**MH1/2**].
475 For example, capex outperformance is received in cash terms over 45 years.

RIIO-2, as any cashflow from the top-up will not be recovered until after the RIIO-2 close out process is complete.

4.137 Also, there is an element of regulatory risk around how GEMA will choose to apply the backstop mechanism and it may have consequences for the close out process.[476]

4.138 Fourth, GEMA has failed properly to assess the impact of the backstop mechanism.

4.139 In the FD, GEMA states that it considers the backstop mechanism is "*unlikely to be activated*" and that "*the mechanism has no benefit for licensees if RIIO-2 unfolds as expected and some benefit if performance does not meet expectations*".[477] It further states "*we do not think that the ex-post mechanism, either in its DD or FD form, has a large impact on incentives*".[478]

4.140 However, a mere assertion that 'no' or 'some' benefit may materialise, without any proper assessment of the detriments of such a novel mechanism, is clearly insufficient.

4.141 This is even more so when, as noted by Chris Bennett in CB1[479], the *"final shape of the backstop mechanism"* is not that which was consulted on in the DD, but reflects a *"marked change"*, i.e. rather than implementing the mechanism with reference to average performance, Ofgem instead decided to implement it with reference to licensee-specific performance.

4.142 Had a proper Impact Assessment been carried out, as required by section 5A of the Utilities Act 2000, it would have been clear that the backstop mechanism is far from being "*net beneficial*"[480], as asserted by GEMA in the FD. Rather, as set out in the Wedge Report, the *"backstop does nothing to help",* as two wrongs don't make a right.[481]

D. Legal consequences

4.143 In summary, the RIIO-T2 Decision to introduce the outperformance wedge was wrong on the following grounds (which are explained in more detail in Annex 2):

a) GEMA failed properly to have regard and/or to give the appropriate weight to its principal objective and its statutory duties because the introduction of the outperformance wedge does not protect the interests of (and indeed harms) existing and future consumers, does not have proper regard to and/or give the appropriate weight to securing that licence holders are able to finance their licensed activities, contributing to the achievement of sustainable development, promoting efficiency and economy, and securing a diverse and viable long-term energy supply, and does not have proper regard to and/or give appropriate weight to the effect on the environment or the principles of best regulatory practice (section 23D(4)(a) GA86 and section 23D(4)(b) GA86);

b) the decision was based, wholly or partly, on errors of fact because GEMA has relied on flawed assumptions and evidence (section 23D(4)(c) GA86);

c) the licence modifications fail to achieve, in whole or in part, the effect stated by GEMA because the outperformance wedge is not a transparent implementation of the UKRN Report, does not appropriately capture expected outperformance and is not necessary in order to address information asymmetry, and the ex-post adjustment mechanism does not remedy the concerns identified (section 23D(4)(d) GA86); and

d) the decision was based, wholly or partly, on errors of law because GEMA failed to take proper account of relevant considerations, acted in defiance of logic, failed properly to inquire, reached conclusions without adequate supporting evidence, and placed reliance on evidence and assumptions which are flawed, and because the impact of the wedge is

476 Wedge Report, pages 46-47, paragraph 4.5.10 [**MH1/2**].
477 FD, Finance Annex, Revised, page 65, paragraph 3.171 [**NOA1/12**].
478 FD, Finance Annex, Revised, page 66, paragraph 3.174 [**NOA1/12**].
479 CB1, paragraph 53(d).
480 FD, Finance Annex, Revised, page 66, paragraph 3.175 [**NOA1/12**].
481 Wedge Report, page 21, paragraph 4.1.8 [**MH1/2**].

discriminatory and disproportionate for no good reason. GEMA has also failed to comply with its statutory duty under section 5A of the Utilities Act 2000 to conduct an impact assessment on proposals which are important (section 23D(4)(e) GA86).

E. Relief sought

4.144 The RIIO-T2 Decision to introduce the outperformance wedge was wrong under the statutory grounds identified in section D and in Annex 2.

4.145 For the reasons outlined above, the Appellant requests that the CMA quash the RIIO-T2 Decision under section 23E(2)(a) GA86 and substitute its own which removes the outperformance wedge from the Licence under section 23E(2)(c) GA86.

4.146 Annex 1 to CB1 sets out the steps required to amend the Licence to give effect to the relief sought.

SECTION 5: CHRONOLOGY

This chronology details the key steps of GEMA's modification proposal from its inception to the RIIO-T2 Decision.

Date	Event
12 July 2017	Open letter on the RIIO-2 Framework
7 March 2018	Ofgem consultation on RIIO-2 Framework Decision
30 July 2018	Ofgem decision on RIIO-2 Framework Decision
18 December 2018	Ofgem publish RIIO-2 Sector Specific Methodology Consultation
24 May 2019	Ofgem decision on RIIO-2 Sector Specific Methodology Decision
9 December 2019	Companies submit final business plan to Ofgem
9 July 2020	Ofgem publishes Draft Determinations
31 July 2020	Ofgem publishes Draft Determinations Impact Assessment
4 September 2020	Close of consultation on Draft Determinations
30 September 2020	Ofgem informal consultation on Licence Modifications
16 October 2020	Ofgem conducts open meetings for the Appellant
8 December 2020	Ofgem publishes RIIO-T2 Final Determinations
17 December 2020	Ofgem publishes Statutory Consultation on RIIO-T2 Licence Modifications
19 January 2021	Close of Statutory Consultation on RIIO-T2 Licence Modifications
3 February 2021	Ofgem publishes Errata List for the RIIO-2 Final Determinations
3 February 2021	Ofgem publishes RIIO-T2 Licence Modification Decisions (**RIIO-T2 Decision**)
1 April 2021	RIIO-T2 Price Control commences

SECTION 6: GLOSSARY

All abbreviations marked * have been extracted from Ofgem's glossary which can be found in Appendix 1 of the RIIO-2 Final Determinations, Core Document [**NOA1/11**]

Abbreviation	Meaning
Aiming Up Working Paper	CMA Working Paper: Choosing a point estimate for the Cost of Capital, PR19 Redetermination, 8 January 2021.
Allowed return on capital*	Ofgem allowance based on the assessed weighted average cost of capital (WACC) including the expected performance of the price control.
Allowed return on debt*	Ofgem allowance in respect of the cost of debt, calculated on a pre-tax basis with reference to a trailing average index of debt costs.
Allowed return on equity*	Ofgem allowance based on the assessed cost of equity and expected performance of the price control. Ofgem calculates the allowed return on equity and cost of equity on a post-tax basis.
Allowed revenue*	The amount of money that a network company can earn on its regulated business.
Appellant	National Grid Gas plc (NGG)
The Authority / Ofgem / GEMA*	Ofgem is the Office of Gas and Electricity Markets, which supports the Gas and Electricity Markets Authority (GEMA or 'the Authority'), the body established by section 1 of the Utilities Act 2000 to regulate the gas and electricity markets in Great Britain.
Baseline Allowed Return*	Ofgem's estimation, taking into account expectations, of the efficient return for debt and equity capital. Based on a weighted average of the pre-tax cost of debt and the post-tax cost of equity adjusted for ex-ante expectations if any. The weighting uses notional gearing.
Basis points* ('bps')	Used in finance to express small changes in rates. One basis point is 0.01% or one hundredth of 1%. 50 bps is 0.5%.
Benchmarking*	The process used to compare a company's performance (e.g. its costs) to that of best practice or to average levels within the sector.
BGT	British Gas Trading Limited
Bond*	A type of debt instrument used by companies and governments to finance their activities. Issuers of bonds usually pay regular cash flow payments (coupons) to bond holders at a pre-specified interest rate and for a fixed period of time.
BPI	Business Plan Incentive
Capital Asset Pricing Model (CAPM)*	A theoretical model that describes the relationship between the risk and required return of financial securities. The basic idea behind the CAPM is that investors require a return for the level of risk in their investment.
Capital expenditure (capex)*	Expenditure on investment in long-term distribution and transmission assets, such as gas pipelines or electricity overhead lines.

The Competition Commission (CC)	The predecessor to the Competition and Markets Authority responsible for determining regulatory references and appeals.
Challenge Group (CCG)*	A central RIIO-2 Challenge Group set up by Ofgem which is independently chaired. The CCG provided Ofgem with a public report on companies' business plans from the perspectives of end consumers.
CMA	Competition and Markets Authority
CMA Guide	Energy Licence Modification Appeals: Competition and Markets Authority Guide (CMA71)
CMA Rules	Energy Licence Modification Appeals: Competition and Markets Authority Rules (CMA70)
Consumer*	Within the regulatory framework Ofgem considers consumers to be the end users of gas and electricity, whether for domestic or business use.
Cost of capital*	The cost of capital is the combined cost of debt and cost of equity
Cost of debt*	The effective interest rate that a company pays on its current debt. Ofgem calculates the cost of debt on a pre-tax basis with reference to a trailing average index of debt costs.
Cost of equity* (COE)	The rate of return on investment that is required by a company's shareholders. The return consists both of dividend and capital gains (i.e. increases in the share price). Ofgem calculates the cost of equity on a post-tax basis.
Distribution Network Operators (DNOs)*	A DNO is a company that operates the electricity distribution network, which includes all parts of the network from 132kV down to 230V in England and Wales. There are 14 licenced DNOs that are subject to RIIO price controls. These are owned by six different groups.
Draft Determinations (DD)	RIIO-2 Draft Determinations published on 9 July 2020
Electricity System Operator (ESO)*	The entity responsible for operating the electricity transmission system and for entering into contracts with those who want to connect to and/or use the electricity transmission system. National Grid Electricity System Operator Limited is the electricity system operator in Great Britain.
ENA	Energy Networks Association
Equity beta*	The equity beta measures the covariance of the returns on a stock with the market return. The weaker this covariance, the lower the return that investors would require on that stock.
Equity risk* premium	A measure of the expected return, on top of the risk-free rate, that an investor would expect for a portfolio of risk-bearing assets. This captures the non-diversifiable risk that is inherent in the market. Sometimes also referred to as the Market Risk Premium.
ET	Electricity transmission

Ex ante*	Refers to a value or parameter established upfront (e.g. at the price control review to be used in the price control ahead).
Ex post*	Refers to a value of parameter established after the event (e.g. following commencement of the price control period).
Fast money*	Fast money allows network companies to recover a percentage of total expenditure within a one-year period with the rest being capitalised into the RAV (slow money).
Final Determinations (FD)	RIIO-2 Final Determinations published on 8 December 2020, revised 3 February 2021
Financeability*	Financeability refers to licence holders' ability to finance the activities which are the subject of obligations imposed by or under the relevant licence or legislation. Financeability is assessed using a range of different qualitative and quantitative measures, including financial ratios.
Framework Consultation	RIIO-2 Framework Consultation published on 7 March 2018
Framework Decision	RIIO-2 Framework Decision published on 30 July 2018
GA86	Gas Act 1986
Gas Distribution Networks (GDNs)*	GDNs transport gas from the National Transmission System to final consumers and to connected system exit points. There are eight network areas managed by four companies that are subject to RIIO price controls.
Gas System Operator (GSO)*	The entity responsible for operating the gas transmission system and for entering into contracts with those who want to connect to and/or use the gas transmission system. National Grid Gas Transmission is the gas transmission operator in Great Britain.
Gearing*	A ratio measuring the extent to which a company is financed through borrowing. Ofgem calculates gearing as a percentage of net debt relative to the RAV.
Gilts*	A bond issued by the UK government.
GT	Gas transmission
iBoxx	A data service for bonds traded in financial markets, published by Markit
Indexation*	The adjustment of an economic variable so that the variable rises or falls in accordance with index movements (e.g. inflation indices, bond indices)
Inflation index*	This is a measure of the changes in given price levels over time. Common examples are the Retail Prices Index (RPI), the Consumer Prices Index (CPI) and the Consumer Prices Index including housing costs (CPIH), which are all measures of the aggregate change in consumer prices over time.
Licence	Licence treated as granted to NGG under section 7 GA86 to participate in the transportation of gas in Great Britain.

Licence conditions*	These are the conditions under which a licensee holds its licence to operate as a gas transporter or electricity transporter and address various detailed matters including requirements to meet certain standards of performance, how the company's allowed revenue is to be calculated and procedures for modifying various documents.
Licence obligations (LO)*	This is one of the RIIO building blocks, an output that is contained within the licence conditions of a network company. The Authority has the power to take appropriate enforcement action in the case of a failure to meet these obligations.
Market to Asset Ratios (MAR)*	The MAR represents the ratio between the market enterprise value, i.e. the market valuation of a company, of a regulated network and its regulatory asset value (RAV)
National Transmission System (NTS)	The high pressure gas network which transports gas from the entry terminals to gas distribution networks, or directly to power stations and other large industrial users. It is owned and operated by NGG.
NATS PFs	CMA NATS Provisional Findings, 24 March 2020
NATS Final Report	CMA NATS Final Report, 23 July 2020
NATS Appeal	NATS PFs and NATS Final Report
Network company*	A transmission owner or gas distribution network operator. The ESO does not fall under this term.
NG	National Grid
NGET	National Grid Electricity Transmission plc
NGG	National Grid Gas plc
NGGT	National Grid Gas Transmission, used to denote that its activities are connected with the gas transmission system as opposed to the gas distribution network. NGG and NGGT are the same entity and the Appellant uses both these terms interchangeably in this Notice of Appeal and supporting documents.
NIAUR	Northern Ireland Authority for Utility Regulation
Notional company*	A hypothetical, but typical, network company
NPg	Northern Powergrid (Northeast) Limited and Northern Powergrid (Yorkshire) Plc
Offshore Transmission Owners (OFTOs)*	OFTOs operate and maintain the offshore transmission assets.
Operating Expenditure (opex)*	The costs of the day-to-day operation of the network such as staff costs, repairs and maintenance expenditure and overheads.

Outputs*	Services, requirements, and deliverables that network companies are funded or incentivised to deliver through the price control. These can be LOs, ODIs, or PCDs. Common outputs apply to all or some of the energy sectors, whereas bespoke outputs apply to one network company.
Output Delivery Incentives (ODIs)*	In RIIO-2, ODIs will apply where service quality improvements beyond a level that is funded through ex ante base revenues may be in the interests of consumers. ODIs can be financial (ODI-F) or reputational (ODI-R).
PCFH	GT2 Price Control Financial Handbook
PCFM	GT2 Price Control Financial Model
PR19 PFs	CMA Provisional Findings, PR19 Redetermination, 29 September 2020
PR19 Redetermination	CMA redetermination of Ofwat's proposed 2020-2025 price controls (PR19)
Price control*	The control developed by the regulator to set targets and allowed revenues for network companies. The characteristics and mechanisms are developed by the regulator in the price control review period depending on network company performance over the last control period and predicted expenditure (companies' Business Plans) in the next.
Price control deliverables (PCDs)*	In RIIO-2, Ofgem will use PCDs to capture those outputs that are directly funded through the price control and where the funding provided is not transferable to a different output or project. The purpose of a PCD will be to ensure the conditions attached to the funding are clear up-front.
Regulatory asset value (RAV)*	The value ascribed by Ofgem to the capital employed in the licensee's regulated business (the 'regulated asset base'). The RAV is calculated by summing an estimate of the initial market value of each licensee's regulated asset base at privatisation and all subsequent allowed additions to it at historical cost, and deducting annual depreciation amounts calculated in accordance with established regulatory methods. These vary between classes of licensee. A deduction is also made in certain cases to reflect the value realised from the disposal of assets comprised in the regulatory asset base. The RAV is indexed to allow for the effects of inflation on the licensee's capital stock.
Return Adjustment Mechanisms (RAMs)*	Failsafe mechanisms to mitigate the future risk of companies earning materially higher or lower than expected returns in a changing system.
Return on Regulatory Equity (RoRE)*	RoRE is the financial return achieved by shareholders in a licensee during a price control period from its actual performance under the price control. RoRE is calculated post-tax and is estimated using certain regulatory assumptions, such as assumed gearing ratio of the companies, to ensure comparability across the sector. Ofgem uses a mix of actual and forecast performance to calculate five-year average returns. These returns may not equal the actual returns of shareholders.
RIIO (Revenue = Incentives + Innovation + Outputs)*	Ofgem's regulatory framework, stemming from the conclusions of the RPI-X@20 project. It builds on the success of the previous RPI-X regime, but better meets the investment and innovation challenge by placing much more emphasis on incentives to drive the innovation needed to deliver a sustainable energy network at value for money to existing and future consumers.

RIIO-1	The current price control for Network companies, which runs from 2013-2021
RIIO-2	The next price control for Network companies, which is set to run from 2021-2026
RIIO-ED1 appeals	Appeals by BGT and NPg against GEMA's RIIO-1 electricity distribution price control.
RIIO-T1	The current network price control for gas and electricity transmission, which runs from 2013-2021
RIIO-T2	The next network price control for gas and electricity transmission, which is set to run from 2021-2026 (also referred to as **RIIO-GT2** for gas transmission and **RIIO-ET2** for electricity transmission).
Risk-free rate* (RFR)	The rate of return that an investor would expect to earn on a riskless asset. Typically, government-issued securities are considered the best available indicator of the risk-free rate due to the extremely low likelihood of the government defaulting on its obligations. [482]
RPI-X*	The form of price control applied to regulated energy network companies before RIIO. Each company was given a revenue allowance in the first year of the control period. The price control then specified that in each subsequent year the allowance would move by 'X'% in real terms.
RPI-X@20*	Ofgem's comprehensive review of how it regulates energy network companies, announced in March 2008. Its conclusions, published in October 2010, resulted in the implementation of a new regulatory framework, known as the RIIO model.
Slow money*	Slow money is where costs are added to the RAV and therefore revenues are recovered slowly (e.g. over 20 years) from both existing and future consumers.
SPS	Strategy and policy statement designated by the Secretary of State under section 131 of the Energy Act 2013.
System Operator* (SO)	The SO is the entity responsible for operating the transmission system and for entering into contracts with those who want to connect to the transmission system. In relation to electricity and gas this role is performed by National Grid.[483]
SSMC	Sector Specific Methodology Consultation dated 18 December 2018
SSMD	Sector Specific Methodology Decision dated 24 May 2019
Total expenditure (totex)*	Totex includes both capital expenditure (capex) and operating expenditure (opex). It also includes replacement expenditure (repex) in gas distribution. Totex is made up of fast money and slow money.
Total Market Return (TMR)*	The TMR is a measure of return that equity investors expect for the market-average level of risk.
Transmission Owner (TO)*	Means, in the electricity sector, National Grid Electricity Transmission, Scottish Power Transmission or Scottish Hydro Electric Transmission, and, in the gas sector, National Grid Gas Transmission.

[482] The Appellant does not consider this definition to be correct for the reasons given in Ground 1.
[483] For electricity, this is NGESO and not NGET.

Transmission System*	The system of high voltage electric lines and high pressure pipelines providing for the bulk transfer of electricity and gas across GB.
UIOLI	Use-it-or-lose-it allowances
UKRN Report	'Estimating the cost of capital for implementation of price controls by UK Regulators: An update on Mason, Miles and Wright (2003)' authored by Burns, Mason, Pickford and Wright, 6 March 2018
Uncertainty Mechanisms (UMs)*	Uncertainty mechanisms allow changes to the ex ante base revenue during the price control period to reflect significant cost changes that are expected to be outside the company's control. Common UMs apply to all or some of the energy sectors, whereas bespoke UMs apply to one network company.
User Group*	For RIIO-2, transmission companies and the ESO were required to set up a User Group. This Group provided Ofgem with a public report on their views and the companies' Business Plans from the perspective of network users.
Volume driver*	An Uncertainty Mechanism allowing revenue to vary as a function of a volume measure (e.g. number of new connections).
Weighted Average Cost of Capital (WACC)*	The weighted average of the cost of equity and the cost of debt, where the weighting is provided by the gearing ratio.

SECTION 7: STATEMENT OF TRUTH

The Appellant believes that the facts stated in this Notice are true.

Signed:

Dated: 2nd March 2021

Chris Bennett, Director of UK Regulation

For and on behalf of National Grid Gas plc

ANNEX 1: STATUTORY GROUNDS ENGAGED BY GROUND 1 – COST OF EQUITY

Ground 1: Cost of Equity				
Headline arguments		**Sub-arguments**	**Statutory ground(s) of appeal**	**Summary**
CAPM Selectivity error – The decisions taken by GEMA at Step 1 (when estimating the RFR, equity beta and TMR) were wrong				
B	GEMA's estimation of the RFR was wrong	a) GEMA failed to take proper account of the shortcomings of ILGs as a proxy for the RFR	Wrong in law (e.g. failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent or accountable) **[23D(4)(a)&(b) GA86]**	GEMA's decision was wrong: (a) **in law** because GEMA: i. **failed to take proper account of relevant considerations** (e.g. that ILGs are not appropriate as a sole proxy for the RFR, relating to AAA-rated corporate bonds, evidence from all relevant proxies, the CMA's PR19 PFs, difference between nominal gilt and ILG rates etc.); ii. **relied on flawed evidence and assumptions** (e.g. that ILG yields reflect the RFR for investors, all investors can borrow at the same RFR, academic theory and suggested practice and regulatory precedent justify disregarding AAA-rated corporate bonds, use of SONIA swaps as a proxy for the RFR, incorrect reliance on Financial Stability Board paper and the Bank of England's policy position to support use of SONIA swaps, that indexation would correct the problems with the proxy, flawed cross-checks);
		b) It was wrong for GEMA not to take account of AAA-rated corporate bonds as a proxy for the RFR	Wrong in law (e.g. failed properly to inquire; failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions; methodological error; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent, accountable or consistent) **[23D(4)(a)&(b) GA86]**	

		c) GEMA's nominal gilt cross-check is not robust and has been misapplied	Wrong in law (e.g. failed properly to inquire; failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions; methodological error; reached conclusions without adequate supporting evidence; acted in defiance of logic) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent or accountable) **[23D(4)(a)&(b) GA86]**	iii. **reached conclusions without adequate supporting evidence** (e.g. misleading characterisation of the CMA's position in relation to ILGs, conclusion that evidence from 20 year nominal gilts supported its decision to rely on ILGs, dismissal of evidence in relation to AAA-rated corporate bonds, use of SONIA swap rates as a proxy for the RFR); iv. **failed properly to inquire** (e.g. in relation to the availability of other proxies for the RFR, and whether the unidentified and unquantified errors it considered would be introduced by using AAA-rated corporate bonds as a proxy could be mitigated and/or outweighed); v. **made methodological errors** (e.g. excluded relevant proxies because it was "simpler" to rely on ILGs alone, approach to calculating updated spot yields annually, flawed methodology for GEMA's nominal gilt cross-check, flawed methodology using SONIA swap rates as a cross-check, unjustified selectivity); vi. **acted in defiance of logic** (e.g. irrational reliance on corporate finance textbooks which do not address the potential bias that the UK ILG exhibits, alternatives to mitigate that bias or alternative proxies); and vii. **was procedurally unfair** (e.g. introduced a new approach in the FD without consultation, thereby failing to allow opportunity for comment on the suitability of SONIA swaps as a proxy for the RFR); (b) because it **was based, wholly or partly, on errors of fact** in GEMA's analysis (i.e. incorrect
		d) GEMA incorrectly relied on SONIA swap rates as a cross-check for the RFR	Wrong in law (e.g. failed properly to inquire; failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions; reached conclusions without adequate supporting evidence; methodological error; procedural unfairness) **[23D(4)(e) GA86]** Error of fact **[23D(4)(c) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent or accountable) **[23D(4)(a)&(b) GA86]**	
		e) GEMA was wrong to conclude that RFR indexation would correct the problems with its proxy	Wrong in law (e.g. failed properly to inquire; failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]**	

				interpretation of the Bank of England's preference for SONIA as an interbank overnight rate as supporting the use of the a 20-year SONIA swap as a proxy for the RFR); and (c) because GEMA **failed properly to have regard to and/or give the appropriate weight to its duty** under section 4AA(5A) GA86 **to have regard to the principles under which regulatory activities should be transparent, accountable and consistent**. This is because GEMA's decision was: (i) not transparently reasoned; (ii) insufficiently evidenced and unjustified; and (iii) unpredictable in failing to follow recent regulatory precedent without adequate reason and changing approach without consultation.
		f) GEMA's unjustified selectivity in estimating the RFR is one of a number of factors which has led it to set a materially lower COE than is justified on a proper account of all of the relevant evidence and when balanced judgements are applied (see the **Insufficient COE Error** below)	See the entries for the **Insufficient COE Error** below	See the entries for the **Insufficient COE Error** below
B	GEMA's estimation of the equity beta was wrong	a) GEMA failed to place adequate weight on National Grid's beta as compared to other comparators	Wrong in law (e.g. failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions; methodological error; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]**	GEMA's decision was wrong: (a) **in law** because GEMA: i. **failed to take proper account of relevant considerations** (e.g. National Grid's beta as

			Error of fact **[23D(4)(c) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent or accountable) **[23D(4)(a)&(b) GA86]**	compared to other comparators, Frontier Economics' decomposition analysis, relevant quantitative evidence, SSE's beta and option to use decomposition approach to exclude SSE's non-regulated energy networks business, observed betas for European energy comparators, qualitative evidence on the relevant risk of energy networks and the water sector); ii. **failed properly to inquire** (e.g. before placing considerable reliance on the beta of water companies, dismissal of beta evidence for a sample of nine European comparators, relative risk of energy networks and the water sector); iii. **made methodological errors** (e.g. undue weight placed on water companies' betas, dismissal of Frontier Economics' decomposition analysis, placed no weight on SSE's beta, failure to take proper account of qualitative evidence, unjustified selectivity); iv. **relied on flawed evidence and assumptions** (e.g. wrongfully placed too much reliance on evidence from the water sector); and v. **reached conclusions without adequate supporting evidence** (e.g. that the beta of three water companies were suitable proxies for the beta of energy network companies, decision to place no weight at all on SSE's beta); (b) because it was **based, wholly or partly, on errors of fact** in GEMA's analysis (i.e. assertion that there are "fundamental similarities" between energy networks and water companies that make the latter suitable proxies, and assertion that the COVID-19 spike was only reflected in SSE's beta); and
		b) GEMA failed to take proper account of quantitative evidence relating to relevant comparators	Wrong in law (e.g. failed properly to inquire; failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions; methodological error; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Error of fact **[23D(4)(c) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent or accountable) **[23D(4)(a)&(b) GA86]**	
		c) GEMA failed to take appropriate account of qualitative evidence on the relative risk of energy networks and the water sector	Wrong in law (e.g. failed properly to inquire; failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions; methodological error; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent or accountable) **[23D(4)(a)&(b) GA86]**	

				(c) because GEMA **failed properly to have regard to and/or give appropriate weight to its duty** under section 4AA(5A) GA86 **to have regard to the principles under which regulatory activities should be transparent and accountable**. This was because GEMA's decision was: (i) unclear (including as to how it applied its judgement in estimating the equity beta); and (ii) insufficiently evidenced and unjustified.
		d) GEMA's unjustified selectivity in estimating the equity beta is one of many factors which has led it to set a materially lower COE than is justified on a proper account of all of the relevant evidence and when balanced judgements are applied (see the **Insufficient COE Error** below)	See the entries for the **Insufficient COE Error** below	See the entries for the **Insufficient COE Error** below
B	GEMA's estimation of the TMR was wrong	a) GEMA was wrong to rely on a CED/CPI historical inflation series without giving due weight to the CED/RPI series	Wrong in law (e.g. failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions; methodological error; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of	GEMA's decision was wrong: (a) **in law** because GEMA: i. **failed to take proper account of relevant considerations** (e.g. only considered a narrow range of evidence, wrongly disregarded the RPI historical inflation series,

			best regulatory practice (e.g. not accountable) **[23D(4)(a)&(b) GA86]**	failed to take into account the CMA's PR19 PFs, failed to consider and give due weight to alternative averaging methods, a range of holding periods, the Appellant's proposed approach of using different outturn periods to determine the inflation rate, totality of evidence on TMR from authors of the UKRN Report, failed to engage with the Appellant's detailed description of downwards bias in the source data); ii. **failed properly to inquire** (e.g. in relation to the relative strengths of the various data series, alternative averaging approaches, the UKRN Report); iii. **relied on flawed evidence and assumptions** (e.g. wrongly considered that the CPI back-cast historical inflation series was sufficiently robust to be the sole inflation index relied upon, wrongly conflated concerns with the use of RPI going forward and the use of RPI as a measure of historic inflation, flawed holding period assumption, irrelevant TMR cross-check, no sound basis for initial working assumption or conclusions on TMR); iv. **made methodological errors** (e.g. flawed approach to indexation, use of geometric average of historical equity returns and application of low uplift, erroneous holding period assumption, flawed and wrongly applied TMR cross-check, choice of CPI over RPI, unjustified selectivity); and v. **reached conclusions without adequate supporting evidence** (e.g. wrongly concluded that the Bank of England's CED/CPI dataset is reliable, unsupported holding period assumption of 10 years or more, arbitrary choice of 1900 as a starting date);
		b) GEMA's averaging methodology for determining TMR was flawed	Wrong in law (e.g. failed to take proper account of relevant considerations; failed properly to inquire; reliance on flawed evidence and assumptions; methodological error; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent, accountable or consistent) **[23D(4)(a)&(b) GA86]**	
		c) GEMA's nominal return source data was biased downwards	Wrong in law (e.g. failed to take proper account of relevant considerations; failed properly to inquire; reliance on flawed evidence and assumptions; methodological error; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent or accountable) **[23D(4)(a)&(b) GA86]**	
		d) GEMA's TMR cross-check was irrelevant and wrongly applied	Wrong in law (e.g. failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions; methodological error) **[23D(4)(e) GA86]** Error of fact **[23D(4)(c) GA86]**	

		e) GEMA was wrong not to take proper account of the evidence presented to it in relation to TMR	Wrong in law (e.g. failed to take proper account of relevant considerations; failed properly to inquire; methodological error; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent, accountable or consistent) **[23D(4)(a)&(b) GA86]**	(b) because it was **based, wholly or partly, on errors of fact** in GEMA's analysis (i.e. irrelevant TMR cross-check); and (c) because GEMA **failed to have regard to and/or give the appropriate weight to its duty** under section 4AA(5A) GA86 to have regard to the principles **under which regulatory activities should be transparent, accountable and consistent**. This was because GEMA's decision was: (i) unclear (including a lack of clarity as to the CPI data series used by GEMA and about its holding period assumption when determining TMR); (ii) insufficiently evidenced and unjustified; and (iii) unpredictable in failing to follow recent regulatory precedent without adequate reason.
		f) GEMA's unjustified selectivity in estimating TMR is one of many factors which has led it to set a materially lower COE than is justified on a proper account of all of the relevant evidence and when balanced judgements are applied (see the **Insufficient COE Error** below)	See the entries for the **Insufficient COE Error** below	See the entries for the **Insufficient COE Error** below
Cross-Checks error – The decisions taken by GEMA at Step 2 (in relation to applying relevant cross-checks) were wrong				
C	GEMA's application of cross-checks at Step 2 of its	a) GEMA was wrong in principle to use the Modigliani-Miller cross-	Wrong in law (e.g. failed to take proper account of relevant considerations; failed properly to inquire; reliance on flawed evidence and assumptions;	GEMA's decision was wrong: (a) **in law** because GEMA:

	process of assessing the COE for RIIO-T2 was wrong	check to inform the Step 2 range	methodological error; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Error of fact **[23D(4)(c) GA86]**	i. **failed to take proper account of relevant considerations** (e.g. comparability and reliability of the data in infrastructure funds cross-check, cross-checks proposed by the Appellant and other stakeholders, inference from OFTOs cross-check that point estimate for COE set too low, conceptual weaknesses of investment managers cross-check etc.); ii. **failed properly to inquire** (e.g. comparability and reliability of the data in the infrastructure funds discount rates cross-check, other cross-checks proposed by the Appellant and other stakeholders); iii. **relied on flawed evidence and assumptions** (e.g. assumption that fund managers would consider expected outperformance of regulated assets as a reduction to the discount rate in the valuation calculations, risk profile of the funds' portfolios would be in line with the risk profile of the energy networks, dataset for the investment managers cross-check incomplete and downward-biased, short-term evidence being relied upon etc.); iv. **made methodological errors** (e.g. using the Modigliani-Miller gearing irrelevance proposition which does not apply in respect of GEMA's COE, flawed downward adjustment of the infrastructure fund discount rate, using the OFTOs cross-check to establish the upper bound, allowing cross-checks based on short-term data, wrongly elevated cross-checks to the status of "primary evidence", unjustified selectivity); v. **acted in defiance of logic** (e.g. in employing the investment managers cross-check); and
		b) GEMA was wrong in principle to use the Infrastructure funds cross-check to inform the Step 2 range	Wrong in law (e.g. failed to take proper account of relevant considerations; failed properly to inquire; reliance on flawed evidence and assumptions; methodological error; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Error of fact **[23D(4)(c) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent) **[23D(4)(a)&(b) GA86]**	
		c) GEMA should have included additional cross-checks which would have supported a higher end to the plausible COE range	Wrong in law (e.g. failed to take proper account of relevant considerations; failed properly to inquire; reliance on flawed evidence and assumptions; methodological error; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent or accountable) **[23D(4)(a)&(b) GA86]**	
		d) GEMA's use of other cross-checks incorporated market	Wrong in law (e.g. failed to take proper account of relevant considerations; failed properly to inquire; reliance on flawed	

		valuations which are noisy (in that they can reflect movements unrelated to the fundamental value of the asset), volatile, and unreliable	evidence and assumptions; methodological error; acting in defiance of logic; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent or accountable) **[23D(4)(a)&(b) GA86]**	vi. **reached conclusions without adequate supporting evidence** (e.g. applied a set of flawed and ultimately weak cross-checks which do not validate its conclusions); (b) because it was **based, wholly or partly, on errors of fact** in GEMA's analysis (e.g. using the Modigliani-Miller gearing irrelevance proposition which does not apply in respect of GEMA's COE, standard corporate finance practice in relation to the infrastructure funds cross-check); (c) because **GEMA failed to have regard to and/or give the appropriate weight to its duty** under section 4AA(5A) GA86 to have regard to the principles **under which regulatory activities should be transparent, accountable and consistent**. This was because GEMA's decision was: (i) unclear; (ii) insufficiently evidenced and unjustified; and (iii) failed to follow established regulatory precedent without adequate reason; and (d) because the **licence modifications[484] fail to achieve, in whole or in part, the effect stated** by GEMA that it was seeking to take a "long-horizon approach" to setting the cost of capital[485].
		e) GEMA's use of other cross-checks introduced short-term data into its decision on the COE, which is contrary to established regulatory practice and GEMA's own stated policy of using the CAPM based on long-term data;	Wrong in law (e.g. failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions) **[23D(4)(e) GA86]** Modifications fail to achieve, in whole or in part, the effect stated by GEMA **[23D(4)(d) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not consistent) **[23D(4)(a)&(b) GA86]**	
		f) GEMA's use of cross-checks as primary evidence to establish the COE range was wrong because it contravenes long-standing regulatory practice that the COE should be set based on	Wrong in law (e.g. failed to take proper account of relevant considerations; methodological error) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not consistent) **[23D(4)(a)&(b) GA86]**	

[484] For these purposes, the licence modifications include provisions relating to the COE in the Price Control Financial Model [**NOA1/28**] and the Price Control Financial Handbook [**NOA1/29**] (which, in accordance with Special Conditions 8.1.2 of the special conditions as modified, form part of Special Condition 8.1 [**NOA1/26**].

[485] See, for example, SSMD, Finance Annex, paragraph 3.40 [**NOA1/7**].

		long-run evidence via the CAPM		
		g) GEMA's errors in developing and applying cross-checks is one of many factors which has led it to set a materially lower COE than is justified on a proper account of all of the relevant evidence and when balanced judgements are applied (see the **Insufficient COE Error** below)	See the entries for the **Insufficient COE Error** below	See the entries for the **Insufficient COE Error** below
Aiming Up error – The decision taken by GEMA at Step 3 not to aim up was wrong				
D	GEMA's decision not to aim up was unjustified and harmful and therefore wrong	a) GEMA was wrong not to have due regard to the weight of regulatory precedent which supports aiming up	Wrong in law (e.g. failed to take proper account of relevant considerations; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Error of fact **[23D(4)(c) GA86]** Failed properly to have regard to and/or give appropriate weight to the principal objective to protect the interests of existing and future consumers **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to the need to	GEMA's decision was wrong: (a) **in law** because GEMA: i. **failed to take proper account of relevant considerations** (e.g. the underlying rationale for and logic of aiming up; the weight of regulatory precedent which supports aiming up, including the CMA's PR19 PFs; the framework set out by the CMA in the Aiming Up Working Paper, including the adverse effects that will flow for consumers if investors do not expect to be fully compensated for future investments; the need to aim up because of the risk of underinvestment in the

			secure that licence holders are able to finance their licensed activities and contribute to the achievement of sustainable development **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to promoting efficiency and economy, securing a diverse and viable long-term energy supply, and the effect on the environment **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent, accountable or consistent) **[23D(4)(a)&(b) GA86]**	energy sector if the COE is set too low and evidence supportive of that position; the impact of UMs in terms of providing an opportunity to hold back in planning investment in the current period, not just at the next full price control review); ii. **relied on flawed evidence and assumptions** (e.g. reliance on the NATS appeal and the CMA's redetermination for Bristol Water in 2015 as evidence that it is appropriate to aim straight; mischaracterisation of aiming up as purely a matter of regulatory discretion; assumption that asymmetric downside risk does not apply in RIIO-2); and iii. **reached conclusions without adequate supporting evidence** (e.g. that the conditions under which aiming up is needed to prevent consumer harm from underinvestment are not present in RIIO-2); (b) because it was **based, wholly or partly, on errors of fact** in GEMA's analysis (i.e. its examples of "aiming straight"; that the conditions under which aiming up is needed to prevent consumer harm from investment are not present in RIIO-2; that asymmetric downside risk does not apply in RIIO-2; that the fact that companies may have underspent their allowances in RIIO-1 provided reason not to aim up in RIIO-2); (c) because GEMA **failed properly to have regard to and/or give appropriate weight to the principal objective** undersection 4AA(1) GA86 **to protect the interests of existing and future consumers** as failing to aim up will cause material harm to consumers (including by leading to an exit of capital from the energy sector, reducing the stability and
		b) GEMA was wrong to characterise aiming up as a matter of regulatory discretion and not to take proper account of the evidence	Wrong in law (e.g. failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not accountable) **[23D(4)(a)&(b) GA86]**	
		c) GEMA's decision not to aim up is poorly reasoned and relies on flawed assumptions and evidence	Wrong in law (e.g. failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions; reached conclusions without adequate supporting evidence) **[/ 23D(4)(e) GA86]**	

			Error of fact **[23D(4)(c) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent, accountable or consistent) **[23D(4)(a)&(b) GA86]**	predictability of energy regulation, and increasing the cost of capital); (d) because, by compromising NGG's ability to deliver Net Zero and other key consumer outputs, GEMA failed properly to have regard to and/or give appropriate weight to: i. its duty under section 4AA(2)(b) GA86 to have regard to **the need to secure that licence holders are able to finance their licensed activities**; ii. its duty under section 4AA(2)(c) GA86 to have regard to **the need to contribute to the achievement of sustainable development**; iii. its duty under section 4AA(5)(a) GA86 to carry out its functions in the manner it considers is best calculated **to promote efficiency and economy** on the part of licence holders including NGG; iv. its duty under section 4AA(5)(c) GA86 to carry out its functions in the manner it considers is best calculated **to secure a diverse and viable long-term energy supply**; and v. its duty under section 4AA(5) GA86, in carrying out its functions, to have regard to **the effect on the environment**; and (e) because GEMA **failed to have regard to and/or give the appropriate weight to its duty** under section 4AA(5A) GA86 **to have regard to the principles under which regulatory activities should be transparent, accountable and consistent**. This was because GEMA's decision was: (i) not open-minded (i.e. GEMA started from
		d) GEMA was wrong to conclude that the conditions under which aiming up is needed to prevent consumer harm from underinvestment are not present in RIIO-2	Wrong in law (e.g. failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions; reached conclusions without adequate supporting evidence) **[/ 23D(4)(e) GA86]** Error of fact **[23D(4)(c) GA86]**	
		e) GEMA's failure to aim up is harmful because it will undermine companies' incentives to invest and undermine investor confidence, and any failure to invest will give rise to material to consumers	Wrong in law (e.g. failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to the principal objective to protect the interests of existing and future consumers **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to the need to secure that licence holders are able to finance their licensed activities and contribute to the achievement of	

			sustainable development **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to promoting efficiency and economy, securing a diverse and viable long-term energy supply, and the effect on the environment **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not accountable or consistent) **[23D(4)(a)&(b) GA86]**	a predetermined position that it would not aim up when setting the COE) and unclear (including in failing to explain why, in view of GEMA's decisions to aim up in previous price controls, not aiming up for RIIO-2 is consistent with GEMA's statutory duties, and failing to adequately explain the features of the price control that justify why aiming up is not required); (ii) insufficiently evidenced and unjustified; and (iii) failed to follow recent regulatory precedent without adequate reason.
		f) GEMA's failure to aim up is one of many factors which has led it to set a materially lower COE than is justified on a proper account of all of the relevant evidence and when balanced judgements are applied (see the **Insufficient COE Error** below)	See the entries for the **Insufficient COE Error** below	See the entries for the **Insufficient COE Error** below
Insufficient COE error – GEMA's overall decision to set the COE at 4.55% for RIIO-T2 was wrong				
E	GEMA's overall decision to set the COE at 4.55% for RIIO-T2 was unjustified and	a) A significant proportion of the reduction in the COE results from the introduction of multiple erroneous	Wrong in law (e.g. failed to take proper account of relevant considerations; methodological error; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]**	GEMA's decision was wrong: (a) **in law** because GEMA:

	harmful and therefore wrong	methodological changes	Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not accountable or consistent) **[23D(4)(a)&(b) GA86]**	i. **failed to take proper account of relevant considerations** (e.g. cumulative effect of methodological changes, adverse change in risk profile and other increased risks, equity financeability, need to fund capex investment, uncertainty over a significant proportion of likely outturn investment required in RIIO-T2); ii. **relied on flawed evidence and assumptions** (e.g. assumed notional dividend yield of 3%, Appellant mandated to deliver much of the investment in its baseline allowances, assumption that a significant amount of new notional company equity can be attracted into the sector during the RIIO-2 period); iii. **made methodological errors** (e.g. multiple erroneous methodological changes, unbalanced judgements, flawed financeability assessment); and iv. **reached conclusions without adequate supporting evidence** (e.g. in relation to underlying network and market risk in RIIO-T2); (b) because it was **based, wholly or partly, on errors of fact** in GEMA's analysis (i.e. there is no reason to believe that it will be possible to attract new equity investment into the sector when the returns offered are unattractive compared to readily available alternatives); (c) because **GEMA failed properly to have regard to and/or give appropriate weight to the principal objective** under 23D(4)(a)&(b) GA86 **to protect the interests of existing and future consumers**
		b) The RIIO-T2 COE is unjustified as GEMA's financeability assessment was flawed	Wrong in law (e.g. failed to take proper account of relevant considerations; relied on flawed evidence and assumptions; methodological error; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Error of fact **[23D(4)(c) GA86]**	
		c) Setting the COE at an insufficient level will harm consumers	Wrong in law (e.g. failed to take proper account of relevant considerations; relied on flawed evidence and assumptions; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to the principal objective to protect the interests of existing and future consumers **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to the need to secure that licence holders are able to finance their licensed activities and contribute to the achievement of sustainable development **[23D(4)(a)&(b) GA86]**	

			Failed properly to have regard to and/or give appropriate weight to promoting efficiency and economy, securing a diverse and viable long-term energy supply, and the effect on the environment **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not consistent) **[23D(4)(a)&(b) GA86]** Modifications fail to achieve, in whole or in part, the effect stated by GEMA **[23D(4)(d) GA86]**	as setting the overall COE at a level which is insufficient will lead to significant consumer harm; (d) because, by compromising NGG's ability to deliver Net Zero and other key consumer outputs, GEMA **failed properly to have regard to and/or give appropriate weight** to: i. its duty under section 4AA(2)(b) GA86 to have regard to **the need to secure that licence holders are able to finance their licensed activities**; ii. its duty under section 4AA(2)(c) GA86 to have regard to **the need to contribute to the achievement of sustainable development**; iii. its duty under section 4AA(5)(a) GA86 to carry out its functions in the manner it considers is best calculated **to promote efficiency and economy** on the part of licence holders including NGG; iv. its duty section under 4AA(5)(c) GA86 to carry out its functions in the manner it considers is best calculated **to secure a diverse and viable long-term energy supply**; and v. its duty under section 4AA(5) GA86, in carrying out its functions, to have regard to **the effect on the environment**; (e) because **GEMA failed properly to have regard to and/or give the appropriate weight to its duty** under section 4AA(5A) GA86 **to have regard to the principles under which regulatory activities should be accountable and consistent**. This was because GEMA's decision was: (i) insufficiently

				evidenced and unjustified (including failing to explain why it considers the COE to be sufficient overall); and (ii) not joined up (as it did not consider the cumulative effect of its multiple erroneous methodological changes) and unpredictable (giving rise to instability and uncertainty on the part of those being regulated and the sector more generally); and (f) because **the licence modifications fail to achieve, in whole or in part, the effect stated by GEMA**. This is because setting the COE at an insufficient level does not "…*ensure that the notional licensee will have sufficient, but not excessive [sic] revenues to finance its activities*…".[486]

[486] FD, Core Document, page 163, paragraph 11.37 [**NOA1/12**].

ANNEX 2: STATUTORY GROUNDS ENGAGED BY GROUND 2 - OUTPERFORMANCE WEDGE

Ground 2: Outperformance Wedge				
Headline arguments		**Sub-arguments**	**Statutory ground(s) of appeal**	**Summary**
1. The outperformance wedge is **<u>unjustified</u>**				
1(a)	It is wrong to make a final, significant deduction from allowed returns after the price control has been calibrated	1. Adjusting allowed returns in this manner is wrong as a matter of principle	Wrong in law (e.g. failed to take proper account of relevant considerations; acted in defiance of logic; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed to have regard to and/or give appropriate weight to the principal objective to protect the interests of existing and future consumers **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent, accountable, consistent or targeted) **[23D(4)(a)&(b) GA86]**	GEMA's decision was wrong: (a) **in law** because GEMA failed to take proper account of its own detailed calibration of the RIIO-T2 final price control package, acting disproportionately with no good reason, and in defiance of logic, to introduce and apply a material deduction from allowed returns in the form of the outperformance wedge without adequate supporting evidence; (b) because GEMA **failed to have regard to and/or give the appropriate weight to the principal objective under section 4AA(1) GA86 to protect the interests of existing and future consumers** as it cannot be in the interests of consumers for GEMA to determine what it considers to be the best calibration of the price control in the consumer interest and then subsequently make a further adjustment without adequate supporting evidence; (c) because GEMA **failed properly to have regard to and/or give the appropriate weight to its duty** under section 4AA(5A) GA86 **to have regard to the principles under which regulatory activities should be transparent, accountable,**
		2. It is wrong to make such a material unjustified deduction from allowed returns after the price control has been calibrated	Wrong in law (e.g. reached conclusions without adequate supporting evidence; acted disproportionately with no good reason) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of	

			best regulatory practice (e.g. not proportionate) **[23D(4)(a)&(b) GA86]**	**proportionate, consistent and targeted only at cases in which action is needed**. This is because GEMA's decision: (i) was not open and transparent (e.g. in terms of calibration of the wedge); (ii) was arbitrary and unjustified (and moreover unjustifiable); (iii) was neither necessary not appropriate to address the risk posed; (iv) was not joined up with the rest of the RIIO-T2 package, was not predictable, and was not consistent with the well-established practices of UK regulators; and (v) did not minimise the side effects in seeking to address information asymmetry.
1(b)	There is no need to make a final, significant deduction from allowed returns given the extensive range of existing and new regulatory tools available, and used, in RIIO-T2 to address information asymmetry effectively. The decision to do so is therefore wrong.	1. GEMA already has an extensive range of 'tried and tested' regulatory tools which it has used to address information asymmetry in RIIO-T2	Wrong in law (e.g. failed to take proper account of relevant considerations; acted disproportionately with no good reason) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not accountable, proportionate, consistent or targeted) **[23D(4)(a)&(b) GA86]**	GEMA's decision was wrong: (a) **in law** because GEMA failed to take proper account of its extensive regulatory toolkit of existing and new tools which it had used comprehensively to address information asymmetry in RIIO-T2, acting disproportionately with no good reason, and in defiance of logic, to introduce and apply the outperformance wedge without giving these tools an opportunity to work. GEMA further relied on flawed evidence and assumptions (e.g. in connection with its historical database), failed to undertake due inquiry and reached conclusions without adequate supporting evidence (e.g. in relation to whether other mechanisms may adequately address information asymmetry); (b) because GEMA **failed to have regard to and/or give the appropriate weight to** its duty under section 4AA(2)(b) GA86 to have regard to the need to secure that licence holders are able to finance their licensed activities, by introducing a mechanism which involves materially reducing allowed returns without giving adequate
		2. GEMA has bolstered its established toolkit by adding a significant number of new tools in RIIO-T2 to address information asymmetry	Wrong in law (e.g. failed to take proper account of relevant considerations; acted disproportionately with no good reason) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not accountable, proportionate, consistent or targeted) **[23D(4)(a)&(b) GA86]**	
		3. GEMA has not explained in any meaningful way why its	Wrong in law (e.g. failed to take proper account of relevant considerations; reached conclusions without adequate	

		extensive array of regulatory tools does not adequately address its concerns regarding information asymmetry	supporting evidence; failed to undertake due inquiry; acted in defiance of logic; reliance on flawed evidence and assumptions) **[23D(4)(e) GA86]** Failed to have regard to and/or give appropriate weight to the need to secure that licence holders are able to finance their licensed activities **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent, accountable, proportionate, consistent or targeted) **[23D(4)(a)&(b) GA86]**	consideration to reliance on its existing and extensive regulatory toolkit; (c) because GEMA **failed properly to have regard to and/or give the appropriate weight to its duty** under section 4AA(5A) GA86 **to 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**. This is because GEMA's decision: (i) was unevidenced and reflective of its 'closed mindset' in relation to the outperformance wedge; (ii) was arbitrary and unjustified (and moreover unjustifiable); (iii) was neither necessary nor appropriate to the risk posed; (iv) was not joined up, implemented fairly, predictable; or consistent with the well-established practices of UK regulators and (v) was not focused on the problem and did not minimise side effects in seeking to address information asymmetry.
		4. GEMA's action in introducing and applying the outperformance wedge is contrary to its overarching statutory duty to 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"	Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent, accountable, proportionate, consistent or targeted) **[23D(4)(a)&(b) GA86]**	
1(c)	The decision is wrong as it is poorly reasoned and relies on	1. GEMA offers no clear evidence on which to base an expectation that companies will	Wrong in law (e.g. failed to take proper account of relevant considerations; reached conclusions without adequate supporting evidence; failed to undertake	GEMA's decision was wrong:

	fundamentally flawed assumptions and evidence	outperform their regulatory settlements in RIIO-2 due to information asymmetry	due inquiry; reliance on flawed evidence and assumptions) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not accountable or consistent) **[23D(4)(a)&(b) GA86]** Modifications fail to achieve stated effect **[23D(4)(d) GA86]**	(a) **in law** because GEMA failed to undertake due inquiry into and take proper account of the reasons for outperformance at RIIO-1 and more generally. It also failed to take proper account of recent price controls set broadly symmetrically using the traditional regulatory toolkit, and relevant differences between RIIO-1 and RIIO-2, and acted disproportionately for no good reason. It relied on flawed evidence and assumptions (e.g. the restatement of RIIO-1 performance on a RIIO-2 basis and in connection with the historical database) and acted in defiance of logic by assuming that information asymmetry drives outperformance and by concluding on the issue of outperformance before business plans were submitted and assessed. It also reached conclusions (e.g. that companies will outperform their regulatory settlements in RIIO-T2 due to information asymmetry and that 25 bps outperformance is 'easy money') without adequate supporting evidence. It failed properly to inquire as to the effects of the outperformance wedge (including the backstop mechanism) and consequently failed to take those relevant considerations properly into account. GEMA has also failed to comply with its statutory duty to conduct an impact on assessment on proposals which are important (as required by section 5A of the Utilities Act 2000). (b) because it was **based, wholly or partly, on errors of fact** in GEMA's analysis (e.g. GEMA's restatement of RIIO-1 performance on a RIIO-2 basis, historical database and MARs analysis); (c) because GEMA **failed properly to have regard to and/or give appropriate weight to the principal objective under section 4AA(1) GA86 to protect**
		2. GEMA's contention that a final, significant deduction is justified because of the difficulties of balancing a price control (owing to information asymmetry) is unfounded	Wrong in law (e.g. failed to take proper account of relevant considerations; failed properly to inquire; reached conclusions without adequate supporting evidence; acted disproportionately with no good reason) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not proportionate) **[23D(4)(a)&(b) GA86]**	
		3. Whilst GEMA attempts (belatedly) to find an evidential anchor for the outperformance wedge in history, there is no good reason why past performance is a reliable guide to the future	Wrong in law (e.g. failed to take proper account of relevant considerations; reliance on flawed evidence and assumptions; acted in defiance of logic) **[23D(4)(e) GA86]** Error of fact (e.g. factual errors and inaccuracies in analysis) **[23D(4)(c) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not consistent) **[23D(4)(a)&(b) GA86]**	

		4. The size of the outperformance wedge is arbitrary	Wrong in law (e.g. failed to take proper account of relevant considerations; failed to properly inquire; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent) **[23D(4)(a)&(b) GA86]**	**the interests of existing and future consumers** as its decision-making was not robust and evidence-based; (d) because GEMA **failed properly to have regard to and/or give the appropriate weight to its duty** under section 4AA(5A) GA86 **to 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**. This is because GEMA's decision was: (i) not open and transparent (e.g. it is not clear how GEMA determined the size of the outperformance wedge); (ii) unjustified; (iii) neither necessary nor appropriate to the risk posed; (iv) inconsistent, as GEMA's reasoning shifted over time; and (v) not focused on the problem and did not minimise side effects; (e) because the **licence modifications[487] fail to achieve, in whole or in part, the effect stated** by GEMA. This is because the outperformance wedge is not *"a transparent implementation of the UKRN Study"*[488], does not appropriately capture *"expectations of outperformance"*[489] and is not necessary in order *"to address information asymmetry"*[490].
		5. GEMA has produced very limited evidence on the effects of the outperformance wedge (including the backstop mechanism) and has in fact failed to conduct any appropriate impact assessment despite the novelty and importance of the outperformance wedge	Wrong in law (e.g. failed to comply with statutory duty to conduct an impact assessment; failed to properly inquire; failed to take proper account of relevant considerations; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to the principal objective to protect the interests of existing and future consumers **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not	

487 For these purposes, the licence modifications include provisions relating to the outperformance wedge in the special conditions of the Appellant's licence, **[NOA1/26]** as well as those contained in the Price Control Financial Model **[NOA1/28]** and the Price Control Financial Handbook **[NOA1/29]** (which, in accordance with Special Condition 8.1.2 of the special conditions as modified, form part of Special Condition 8.1).

488 DD, Finance Annex, paragraph 3.150 [**NOA1/9**]. The Appellant notes that helpful guidance can be drawn from the CMA's determination in the British Gas Trading Appeal, where the CMA took into account the following factors in assessing the effect Ofgem had intended would be achieved by licence modifications setting a particular mechanism: (a) any policy statements made by Ofgem during the price control process including, in particular, at the Draft and Final Determination stages; (b) any explanations given by Ofgem in support of such policy statements; (c) any responses made by Ofgem to comments by consultees in connection with such policy statements; and (d) evidence given by Ofgem at an oral hearing conducted by the CMA. Taken cumulatively, such evidence was deemed sufficient to inform the CMA of Ofgem's policy and therefore what it had intended to achieve. This in turn enabled the CMA to review Ofgem's decision to determine whether – as a matter of fact – the modification did or did not achieve the effect intended.

489 DD, Finance Annex, paragraph 3.147 [**NOA1/9**].

490 DD, Finance Annex, paragraph 3.149 [**NOA1/9**].

			transparent, accountable, proportionate, consistent or targeted) **[23D(4)(a)&(b) GA86]** Modifications fail to achieve, in whole or in part, the effect stated by GEMA **[23D(4)(d) GA86]**	
1(d)	The decision is wrong as it has a discriminatory and disproportionate impact on different licensees for no good reason	n/a	Wrong in law (e.g. discrimination; acted disproportionately with no good reason; acted in defiance of logic; failed to undertake proper inquiry; failed to take proper account of relevant considerations; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to promoting efficiency and economy and principles of best regulatory practice (e.g. not transparent, accountable, proportionate, consistent or targeted) **[23D(4)(a)&(b) GA86]**	GEMA's decision was wrong: (a) **in law** because GEMA failed to inquire and take into account the fact that outperformance depends on factors specific to each company, acting without adequate supporting evidence to introduce a blanket 25 bps deduction which has a discriminatory and disproportionate impact on NGG for no good reason, in defiance of logic (e.g. by allowing a company's RAV to totex ratio to impact on the application of the outperformance wedge). (b) because GEMA **failed properly to have regard to and/or give appropriate weight to its duty** under section 4AA(5)(a) GA86 to carry out its functions in the manner it considers is best calculated **to promote efficiency and economy** on the part of licence holders including NGG since such a discriminatory and disproportionate policy could not have been put in place if it had; **(c)** because GEMA **failed properly to have regard to and/or give the appropriate weight to its duty** under section 4AA(5A) GA86 **to 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**. This is because GEMA's decision: (i) was not clear as to the

				markedly different effect of the outperformance wedge on different companies; (ii) was unjustified; (iii) was neither necessary nor appropriate to the risk posed; (iv) was not implemented fairly across companies subject to it given the disproportionate impact on NGG; and (v) was not focused on the problem and did not minimise side effects in seeking to address information asymmetry.
2. The outperformance wedge is **<u>harmful</u>**				
2(a)	The decision is wrong as it will cause direct and enduring harm to existing and future consumers	1. The outperformance wedge undermines productivity incentives	Wrong in law (e.g. failed to take proper account of relevant considerations; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to the principal objective to protect the interests of existing and future consumers **[23D(4)(a)&(b) GA86]** Failed to have regard to and/or give appropriate weight to the need to contribute to the achievement of sustainable development **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to promoting efficiency and economy, securing a	GEMA's decision was wrong: (a) **in law** because GEMA failed to take proper account of the consumer harm caused by the outperformance wedge (first articulated by Burns in the UKRN Report and subsequently repeated and expanded upon during the RIIO-2 process), reached conclusions without adequate supporting evidence and failed to take into account the impact on equity financeability in RIIO-2; (b) because GEMA **failed properly to have regard to and/or give appropriate weight to the principal objective under 4AA(1) GA86 to protect the interests of existing and future consumers** because it will cause direct and enduring harm to existing and future consumers; (c) because, by imposing a mechanism which is materially detrimental to NGG's ability to deliver Net

			diverse and viable long-term energy supply, the effect on the environment **[23D(4)(a)&(b) GA86]**	Zero and other key consumer outputs, GEMA **failed properly to have regard to and/or give appropriate weight to**: i. its duty under section 4AA(2)(b) GA86 to have regard to the **need to secure that licence holders are able to finance their licensed activities**; ii. its duty under section 4AA(2)(c) GA86 to have regard to the **need to contribute to the achievement of sustainable development**; iii. its duty under section 4AA(5)(a) GA86 to carry out its functions in the manner it considers is best calculated to **promote efficiency and economy** on the part of licence holders including NGG; iv. its duty under section 4AA(5)(c) GA86 to carry out its functions in the manner it considers is best calculated **to secure a diverse and viable long-term energy supply**; and v. its duty under section 4AA(5) GA86, in carrying out its functions, to have regard to **the effect on the environment**; (d) because GEMA **failed properly to have regard to and/or give the appropriate weight to its duty** under section 4AA(2)(b) GA86 to have regard to the need to secure that licence holders are able to finance their licensed activities because the wedge will undermine equity financeability for RIIO-2.
		2. In reducing the allowed equity return by 25 bps, GEMA's outperformance wedge damages incentives to invest	Wrong in law (e.g. failed to take proper account of relevant considerations; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to the principal objective to protect the interests of existing and future consumers **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to the need to secure that licence holders are able to finance their licensed activities and contribute to the achievement of sustainable development **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to promoting efficiency and economy, securing a diverse and viable long-term energy supply, and the effect on the environment **[23D(4)(a)&(b) GA86]**	
		3. The outperformance wedge causes harm by damaging investor confidence and increasing the cost of capital in the long run, contrary to the interests	Wrong in law (e.g. failed to take proper account of relevant considerations; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to the principal objective to protect the interests of existing	

		of existing and future consumers	and future consumers **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to the need to secure that licence holders are able to finance their licensed activities and contribute to the achievement of sustainable development **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to promoting efficiency and economy, securing a diverse and viable long-term energy supply, and the effect on the environment) **[23D(4)(a)&(b) GA86]**	
		4. The outperformance wedge will undermine equity financeability in RIIO-2	Wrong in law (e.g. failed to take proper account of relevant considerations; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to the principal objective to protect the interests of existing and future consumers **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to the need to secure that licence holders are able to finance their licensed activities and contribute to the achievement of sustainable development **[23D(4)(a)&(b) GA86]**	

2(b)	The ex-post adjustment mechanism is wrong as it does not fix the problems caused by the outperformance wedge but creates some new ones	1. The backstop mechanism exacerbates the harmful properties of the outperformance wedge by creating perverse incentives for companies to no longer seek to outperform	Wrong in law (e.g. failed to comply with statutory duty to conduct an impact assessment; failed to take proper account of relevant considerations; acted in defiance of logic; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to the principal objective to protect the interests of existing and future consumers **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to the need to contribute to the achievement of sustainable development **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to promoting efficiency and economy, securing a diverse and viable long-term energy supply, the effect on the environment **[23D(4)(a)&(b) GA86]** Modifications fail to achieve, in whole or in part, the effect stated by GEMA **[23D(4)(d) GA86]**	GEMA's decision was wrong: (a) **in law** because GEMA failed to undertake due inquiry (e.g. failing to consult on the fundamental change in the backstop mechanism between DD and FD) and to take proper account of the effects of the backstop mechanism, reaching conclusions (e.g. that the backstop mechanism does not have a large impact on incentives) without adequate supporting evidence and acting in defiance of logic given the backstop mechanism's perverse outcome. GEMA has also failed to comply with its statutory duty to conduct an impact assessment on proposals which are important (under s.5A of the Utilities Act 2000); (b) because GEMA **failed properly to have regard to and/or give appropriate weight to the principal objective under section 4AA(1) GA86 to protect the interests of existing and future consumers** because the backstop mechanism is harmful to existing and future consumers; (c) because, as the backstop exacerbates the harmful properties of the outperformance wedge set out above, GEMA **failed properly to have regard to and/or give appropriate weight to**: i. its duty under section 4AA(2)(b) GA86 to have regard to the **need to secure that licence holders are able to finance their licensed activities**; ii. its duty under section 4AA(2)(c) GA86 to have regard to the **need to contribute to the achievement of sustainable development**;
		2. Contrary to Ofgem's assertions that the backstop mechanism will "protect investors" and "reinforce stakeholder confidence	Wrong in law (e.g. failed to take proper account of relevant considerations; failed properly to inquire; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]**	

		in the regulatory regime", investors can take no comfort in the backstop mechanism	Failed properly to have regard to and/or give appropriate weight to the principal objective to protect the interests of existing and future consumers **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to the need to secure that licence holders are able to finance their licensed activities and contribute to the achievement of sustainable development **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to promoting efficiency and economy, securing a diverse and viable long-term energy supply, and the effect on the environment **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent or consistent) **[23D(4)(a)&(b) GA86]**	iii. its duty under section 4AA(5)(a) GA86 to carry out its functions in the manner it considers is best calculated to **promote efficiency and economy** on the part of licence holders including NGG; iv. its duty under section 4AA(5)(c) GA86 to carry out its functions in the manner it considers is best calculated to **secure a diverse and viable long-term energy supply**; and v. its duty under section 4AA(5) GA86, in carrying out its functions, to have regard to **the effect on the environment**; (d) because GEMA **failed properly to have regard to and/or give the appropriate weight to** its duty under section 4AA(2)(b) GA86 to have regard to the need to secure that licence holders are able to finance their licensed activities because the wedge will weaken financeability in the sector and create increased regulatory risk; (e) because GEMA **failed to have regard to and/or give the appropriate weight to its duty** under section 4AA(5A) GA86 **to 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**. This is because GEMA's decision was: (i) unevidenced and reflective of its 'closed mindset' in relation to the outperformance wedge; (ii) unjustified; (iii) neither necessary nor appropriate to the risk posed; (iv) not joined up, fairly implemented or predictable; and (v) not focused on the problem and did not minimise side effects;
		3. The outperformance wedge serves to weaken financeability in the sector and creates a further increase in regulatory risk	Wrong in law (e.g. failed to take proper account of relevant considerations; failed properly to inquire; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to the principal objective to protect the interests of existing	

			and future consumers **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to the need to secure that licence holders are able to finance their licensed activities and contribute to the achievement of sustainable development **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not transparent or consistent) **[23D(4)(a)&(b) GA86]**	(f) because the **licence modifications fail to achieve, in whole or in part, the effect stated** by GEMA. This is because the ex post adjustment or backstop mechanism does not, contrary to GEMA's assertions, *"protect investors"*[491], or *"reinforce stakeholder confidence in the regulatory regime"*[492], nor is it *"net beneficial"*[493].
		4. GEMA has failed to properly assess the impact of the backstop mechanism	Wrong in law (e.g. failed to comply with statutory duty to undertake an impact assessment; failed to properly inquire; failed to take proper account of relevant considerations; reached conclusions without adequate supporting evidence) **[23D(4)(e) GA86]** Failed properly to have regard to and/or give appropriate weight to the principal objective to protect the interests of existing and future consumers **[23D(4)(a)&(b) GA86]** Failed properly to have regard to and/or give appropriate weight to principles of best regulatory practice (e.g. not	

491 DD, Finance Annex, page 86 [**NOA1/9**].
492 DD, Finance Annex, page 85 paragraph 3.155 [**NOA1/9**].
493 FD, Finance Annex, Revised, page 66, paragraph 3.175 [**NOA1/12**].

			transparent, accountable, proportionate, consistent or targeted) **[23D(4)(a)&(b) GA86]** Modifications fail to achieve, in whole or in part, the effect stated by GEMA **[23D(4)(d) GA86]**	

ANNEX 3: HYPERLINKS TO EXHIBITS IN NOA1

Exhibit Reference	Document	Hyperlink
Ofgem key price control documents		
NOA1/1	Open letter on the RIIO-2 Framework	https://www.ofgem.gov.uk/system/files/docs/2017/07/open_letter_on_the_riio2_framework_12_july_final_version.pdf
NOA1/2	RIIO-2 Framework Consultation (**Framework Consultation**)	https://www.ofgem.gov.uk/system/files/docs/2018/03/riio2_march_consultation_document_final_v1.pdf
NOA1/3	RIIO-2 Framework Decision (**Framework Decision**)	https://www.ofgem.gov.uk/system/files/docs/2018/07/riio-2_july_decision_document_final_300718.pdf
NOA1/4	RIIO-2 Sector Specific Methodology Consultation	https://www.ofgem.gov.uk/system/files/docs/2019/01/riio-2_sector_methodology_0.pdf
NOA1/5	RIIO-2 Sector Specific Methodology Consultation: Finance Annex	https://www.ofgem.gov.uk/system/files/docs/2018/12/riio-2_finance_annex.pdf
NOA1/6	RIIO-2 Sector Specific Methodology Decision	https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_core_30.5.19.pdf
NOA1/7	RIIO-2 Sector Specific Methodology Decision: Finance Annex	https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf
NOA1/8	RIIO-2 Draft Determinations: Core Document	https://www.ofgem.gov.uk/system/files/docs/2020/07/draft_determinations_-_core_document_redacted.pdf
NOA1/9	RIIO-2 Draft Determinations: Finance Annex	https://www.ofgem.gov.uk/system/files/docs/2020/07/draft_determinations_-_finance.pdf
NOA1/10	RIIO-2 Final Determinations: Overview	https://www.ofgem.gov.uk/system/files/docs/2020/12/riio2_overview_document_web_1.pdf
NOA1/11	RIIO-2 Final Determinations: Core Document – Revised	https://www.ofgem.gov.uk/system/files/docs/2021/02/final_determinations_-_core_document_revised.pdf
NOA1/12	RIIO-2 Final Determinations: Finance Annex – Revised	https://www.ofgem.gov.uk/system/files/docs/2021/02/final_determinations_-_finance_annex_revised_002.pdf
NOA1/13	RIIO-2 Final Determinations: Impact Assessment Annex	https://www.ofgem.gov.uk/system/files/docs/2020/12/final_determinations_-_impact_assessment_annex.pdf
NOA1/14	RIIO-2 Statutory Licence Modification – Notice	https://www.ofgem.gov.uk/system/files/docs/2021/02/gas_notice_-_february_modification_decision_0.pdf
NOA1/15	RIIO-2 Statutory Licence Modification – Reasons and effects	https://www.ofgem.gov.uk/system/files/docs/2021/02/riio-2_licence_drafting_modifications_-_reasons_and_effects.pdf

Exhibit Reference	Document	Hyperlink
Other relevant documents		
NOA1/16	'Estimating the cost of capital for implementation of price controls by UK Regulators: An update on Mason, Miles and Wright (2003)' authored by Burns, Mason, Pickford and Wright (**UKRN Report**)	https://www.ukrn.org.uk/wp-content/uploads/2018/06/2018-CoE-Study.pdf
NOA1/17	CMA Provisional Findings, PR19 Redetermination (**PR19 PFs**)	https://assets.publishing.service.gov.uk/media/5f7c467ee90e070dde709cee/Water_provisional_determinations_report_all_-_September_2020_---_web_-online-2.pdf
NOA1/18	CMA Working Paper: Choosing a point estimate for the Cost of Capital, PR19 Redetermination (**Aiming Up Working Pape**r)	https://assets.publishing.service.gov.uk/media/5ff726168fa8f56407498c29/Point_Estimate_for_the_Cost_of_Capital_Working_Paper_---_-.pdf
NOA1/19	NATS Provisional Findings (**NATS PFs**) and NATS Final Report (**NATS Final Report**), together NATS (En Route) Plc/CAA Regulatory Appeal (**NATS Appeal**)	https://assets.publishing.service.gov.uk/media/5e7a2644d3bf7f52f7c871f3/Provisional_Findings_Report_-_NATS_-_CAA.pdf https://assets.publishing.service.gov.uk/media/5f350e17e90e0732e0f31c2a/NATS_-_CAA_final_report_for_publication_August_2020_-----.pdf
NOA1/20	BGT Final Determination Report – Energy licence modification appeal brought by British Gas Trading (*BGT v GEMA* [2015]) in respect of GEMA's RIIO-1 electricity distribution price control (RIIO-ED1 appeal)	https://assets.publishing.service.gov.uk/media/5609588440f0b6036a00001f/BGT_final_determination.pdf
NOA1/21	NPg Final Determination Report – Energy licence modification appeal brought by Northern Powergrid (*NPg v GEMA* [2015]) in respect of GEMA's RIIO-1 electricity distribution price control (RIIO-ED1 appeal)	https://assets.publishing.service.gov.uk/media/5609534de5274a036c000012/NPg_final_determination.pdf
NOA1/22	Bristol Water Final Determination Report – Bristol Water plc, 'A reference under section 12(3)(a) of the Water Industry Act 1991'	https://assets.publishing.service.gov.uk/media/56279924ed915d194b000001/Bristol_Water_plc_final_determination.pdf
NOA1/23	Firmus Final Determination Report – Appeal by Firmus Energy (*Firmus Energy (Distribution) Limited v NIAUR* [2017]) under The Gas (Northern Ireland) Order 1996	https://assets.publishing.service.gov.uk/media/5953bfd8e5274a0a69000079/firmus-final-determination.pdf

Exhibit Reference	Document	Hyperlink
NOA1/24	SONI Final Determination Report – Appeal by SONI Limited (*SONI Limited v NIAUR* [2017]) under The Electricity (Northern Ireland) Order 1992	https://assets.publishing.service.gov.uk/media/5a09a73ce5274a0ee5a1f189/soni-niaur-final-determination.pdf
NOA1/25	Errata List for the RIIO-2 Final Determinations	https://www.ofgem.gov.uk/system/files/docs/2021/02/errata_list_for_the_riio-2_final_determinations.pdf
NOA1/26	NGG Special Conditions (Clean)	Available in the zip file 'RIIO-2 Licence Conditions' on Ofgem's website here https://www.ofgem.gov.uk/publications-and-updates/decision-proposed-modifications-riio-2-transmission-gas-distribution-and-electricity-system-operator-licences
NOA1/27	Gas Standard Special Conditions A26 and A40	https://epr.ofgem.gov.uk/Content/Documents/Standard%20Special%20Condition%20-%20PART%20A%20Consolidated%20-%20Current%20Version.pdf See also Ofgem's proposed modifications to A40 in the zip file 'RIIO-2 Licence Conditions' on Ofgem's website here https://www.ofgem.gov.uk/publications-and-updates/decision-proposed-modifications-riio-2-transmission-gas-distribution-and-electricity-system-operator-licences
NOA1/28	GT2 Price Control Financial Model (**PCFM**)	Available in the zip file 'RIIO-2 Price Control Financial Instruments' on Ofgem's website here https://www.ofgem.gov.uk/publications-and-updates/decision-proposed-modifications-riio-2-transmission-gas-distribution-and-electricity-system-operator-licences
NOA1/29	GT2 Price Control Financial Handbook (**PCFH**)	Available in the zip file 'RIIO-2 Price Control Financial Instruments' on Ofgem's website here https://www.ofgem.gov.uk/publications-and-updates/decision-proposed-modifications-riio-2-transmission-gas-distribution-and-electricity-system-operator-licences
NOA1/30	Gas Act 1986 c. 44	N/A
NOA1/31	Secretary of State draft social and environmental guidance to GEMA	https://www.ofgem.gov.uk/ofgem-publications/74203/file37517-pdf
NOA1/32	Secretary of State draft social and environmental guidance to GEMA	https://www.gov.uk/government/publications/draft-social-and-environmental-guidance-to-the-gas-and-electricity-markets-authority
NOA1/33	Parliamentary debate leading to the amendment of the GA86 which introduced the obligation in section 4AA(5A)	https://publications.parliament.uk/pa/ld200304/ldhansrd/vo040302/text/40302-14.htm

Exhibit Reference	Document	Hyperlink
NOA1/34	Better Regulation Task Force, Principles of Good Regulation	https://webarchive.nationalarchives.gov.uk/20100407173247/http://archive.cabinetoffice.gov.uk/brc/upload/assets/www.brc.gov.uk/principlesleaflet.pdf
NOA1/35	Competition Commission, 'BAA Ltd: A report on the economic regulation of the London airports companies (Heathrow Airport Ltd and Gatwick Airport Ltd)' – presented to the Civil Aviation Authority	https://webarchive.nationalarchives.gov.uk/20111202214947/http://www.competition-commission.org.uk/rep_pub/reports/2007/fulltext/532.pdf
NOA1/36	Energy Licence Modification Appeals: Competition and Markets Authority Rules (CMA70) (**CMA Rules**)	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/655601/energy-licence-modification-appeals-rules.pdf
NOA1/37	Energy Licence Modification Appeals: Competition and Markets Authority Guide (CMA71)) (**CMA Guide**)	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/655599/energy-licence-modification-appeals-guide.pdf
NOA1/38	GEMA letter to CMA in respect of PR19 Redetermination	https://assets.publishing.service.gov.uk/media/5fa298d88fa8f57896ad0276/Ofgem_response_to_PR19_Provisional_Findings_291020_Redacted.pdf
NOA1/39	Section 5A Utilities Act 2000	N/A