

# COMMENT ON OFGEM'S CALL FOR INPUT ON THE EFFECT OF HIGH INFLATION

A report prepared for the Energy Networks  
Association

25 SEPTEMBER 2023

# Contents

Executive summary	3
1 Introduction	5
2 Ofgem's option to "true up" for over/under performance arising from the leverage effect	8
2.1 Ofgem's proposal is retrospective	8
2.2 Retrospective regulation will have highly damaging effects for consumers	10
2.3 Ofgem and the CMA have in the past recognised the material downsides of retrospection, and sought to avoid them	13
2.4 Conclusions on Ofgem's Option 4	15
3 Ofgem's possible changes to future price control design	17
3.1 The existing regulatory arrangements	18
3.1.1 Key components of the existing arrangements	18
3.1.2 Track record of the existing arrangements	20
3.2 Ofgem's set of potential price control design changes	23
3.3 Consequences of our observations for Ofgem's future process	26
Annex A Case studies on the negative effects of retrospective regulation	28
A.1 Phoenix Natural Gas Competition Commission (CC) 2012	28
A.2 RIIO-1 Mid Period Review	30
Annex B Observations on Ofgem's estimation of quantum	35
B.1 Overview of Ofgem's modelling approach	35
B.2 Quantitative assessment should incorporate a sufficiently long period	36
B.3 Ofgem has not taken account of basis risk between CPI and CPIH	37
B.4 The quantum estimated on the notional financing structure is not informative regarding the actual gains of any network	39
B.5 Concluding comments on Ofgem's quantitative assessment	39

## Executive summary

- 1 On the 1<sup>st</sup> August 2023<sup>1</sup> Ofgem issued a Call For Input (CFI) on the impact of high inflation on the operation of network price controls. This paper highlighted a so-called “leverage effect” originating from its policy of indexing Regulated Asset Value (RAV) to inflation, and its approach to determining allowances for debt costs, in the presence of fixed rate debt and unanticipated high inflation.
- 2 We note that the leverage effect is not a transfer of value between customers and companies, but rather a value transfer between the equity investors and nominal debt investors as a result of their respective inflation exposure positions. In the presence of fixed coupon debt, equity investors gain at the expense of the debt investor when inflation is high, but the benefit flows in the opposite direction when inflation is low. Had the companies fully inflation-linked their debt, there would be no leverage effect. The leverage effect is therefore symmetric, and companies have been exposed to it for decades without this issue attracting comment.
- 3 Ofgem’s analysis indicates that since the start of RIIO-1 to the end of 2022/23, the leverage effect has resulted in a benefit to regulated energy networks of approximately £1.5bn, although Ofgem acknowledges that this estimate is only indicative, is sensitive to the selected period of analysis, and that it is based on the notional company and will not reflect the position of any actual company.
- 4 Ofgem is now seeking input on whether it is appropriate to make changes to its arrangements, or whether it should retain the existing arrangements. The CFI sets out Ofgem’s initial thoughts on the set of interventions that could be made, such as making changes to future price control design, a proposal to “true up” for the leverage effect up to the end of RIIO-2, and possible changes to financial reporting arrangements.
- 5 On behalf of the ENA, Frontier has assessed the above policy options, in particular the potential impact of the proposed true up at the end of RIIO-2, and the key challenges that Ofgem must be aware of if it is to implement any changes to future price control design.
- 6 In respect of the proposed “true up”, it is important to be crystal clear regarding what such a policy would entail. This true up would involve the retrospective reopening of already settled price controls after the event, in order to materially change the outcome of those price control to the detriment of investors.

---

<sup>1</sup> Ofgem (2023), Call For Input – Impact of high inflation on the network price control operation.  
<https://www.ofgem.gov.uk/publications/call-input-impact-high-inflation-network-price-control-operation>

- 7 Our assessment of this mooted retrospective adjustment is absolutely clear-cut – it would be unambiguously detrimental for consumers if a retrospective adjustment is made to already settled price controls. Retrospective regulation of this kind would fatally undermine investor confidence in the regulatory regime, including having a corrosive effect on the wider commercial framework. This loss of confidence would manifest as a higher financing cost, as well as the curtailment of future investment in the utility sectors, leading to adverse consumer outcomes more widely.
- 8 In respect of Ofgem's mooted changes to future price control design, it is not possible at this stage to provide a definitive analysis of whether any have the potential to bring benefits versus the existing arrangements. At present there is insufficient detail on how these proposals might be designed and implemented. However, having reviewed the nature of Ofgem's proposals, it is immediately clear that any of these possible changes would modify foundational aspects of the current regulatory arrangements (e.g. most would result in the RAV no longer being fully index linked). Given the fundamental nature of these potential changes, their complexity, and the extent to which they are interconnected with multiple other facets of the price control, much more analysis is needed to allow a full assessment of their potential merits.
- 9 Importantly, it is not clear to us that any of the proposed options is unambiguously better than the status quo. Given the role that the existing arrangements have played in supporting investor confidence and large scale investment in the sector, there is much to lose if possible changes are not fully appraised and handled with appropriate care and rigour.
- 10 It is crucial, therefore, that Ofgem approaches any potential changes to future price control with utmost care, including fully engaging stakeholders on the detailed design of such changes, conducting a comprehensive impact assessment, and consulting widely to provide sufficient lead time and cost allowance (where applicable) for companies to make necessary transitions.

# 1 Introduction

- 11 Frontier Economics Ltd has been commissioned by the Energy Networks Association (ENA) to provide an independent report on Ofgem's Call For Input paper (CFI) on the impact of high inflation on the operation of network price controls, published on the 1st August 2023.<sup>2</sup>
- 12 In its CFI Ofgem describes a "leverage effect". This effect originates from the operation of Regulated Asset Value (RAV) indexation and Ofgem's approach to determining allowances for debt costs, in the presence of fixed rate debt and unanticipated inflation. The result is that during periods where inflation is higher than the long run level expected at the time of the price control, effective returns to the equity investor are higher than the baseline level set by Ofgem. The effect is symmetric, i.e. during periods where inflation turns out to be lower than expected, returns to equity investors will be lower than Ofgem's baseline.
- 13 Exposures of this kind to variation around price control expectations are present across multiple aspects of the RIIO framework and almost all other monopoly regulation frameworks. The energy networks have been exposed to this leverage effect for decades, and for the majority of RIIO-1 experienced lower effective returns to equity holders as a result of lower than expected outturn inflation. However, following a period where inflation has been high, Ofgem is now exploring whether change is appropriate.
- 14 In its CFI, Ofgem presents an initial analysis of the size of this effect. Ofgem's analysis indicates that since the start of RIIO-1 to the end of 2022/23, the leverage effect has resulted in a benefit to regulated energy networks of approx. £1.5bn. Due to the operation of the existing regulatory arrangements any benefit/disbenefit arises in network company RAVs, and hence the effect on revenues and bills will arise over a 45 year period. Ofgem estimates that the leverage effect to the end of FY23 will increase annual end customer bills by circa £2.30.
- 15 Ofgem further sets out that the estimated quantum of RAV growth is sensitive to the period of time analysed. Based on different inflation forecasts currently available, Ofgem's modelling suggests that by the end of RIIO-2, the leverage effect could result in additional RAV growth between £1.2bn (based on the current OBR forecasts from March) and approx. £3.4bn (based on May HMT consensus inflation forecasts), creating a range of possible bill impacts over this period of

---

<sup>2</sup> Ofgem (2023), Call For Input – Impact of high inflation on the network price control operation.  
<https://www.ofgem.gov.uk/publications/call-input-impact-high-inflation-network-price-control-operation>

between £1.50 and £5.10.<sup>3</sup> These estimates can be expected to change over time depending on the evolution of inflation.

- 16 Ofgem's CFI sets out initial thoughts on the set of interventions that could be made. They are:
- (a) No policy action in relation to the leverage effect (i.e. retain the existing arrangements);
  - (b) Making changes to dividend distribution policy reporting and transparency;
  - (c) Changes to future price control design in respect of the treatment of inflation indexation and/or the basis on which debt costs are allowed (four sub options are presented), that Ofgem considers may have the potential to reduce or remove the leverage effect;
  - (d) Retrospectively introducing a true up at the end of RIIO-2 to adjust for over/under growth in RAV that has arisen from the leverage effect; and
  - (e) Voluntary submissions by licensees to share any benefits.
- 17 Ofgem's CFI also sets out how Ofgem considers it should go about formulating any future policy, informed by its objectives and duties, alongside a proposed set of criteria it might use to evaluate policy options.
- 18 We understand that the ENA intends to submit a separate full response to Ofgem's CFI. In this report we have therefore been asked to focus our attention on a subset of Ofgem's proposed policy responses. Given this, the remainder of this paper is structured as follows:
- (a) In **Section 2** we assess the merits of applying a true up at the end of RIIO-2 (i.e. Ofgem Option 4, listed as (d) above). We set out how this would involve retrospectively reopening already settled price controls, so as to change key aspects of the price control to the detriment of investors. We describe how this would be wholly inconsistent with accepted principles for good regulation and would be certain to materially harm investor confidence and thereby cause material long run detriment to consumers.
  - (b) In **Section 3** we provide our views on the issues arising from the potential changes to future price controls mooted by Ofgem (i.e. Ofgem Option 3, listed (c) in the paragraph above). We set out how any/all of these changes would fundamentally alter key aspects of the price control, and how as a consequence careful analysis will be needed in order to assess whether any option offers benefits when compared to the existing arrangements.

---

<sup>3</sup> CFI page 5. We note that while these impacts are described as changes in RAV, the values quotes are the sum of annual RAV effects over the relevant years after accounting for inflation and the time value of money.

- 19 Supporting Annexes of this report contain further detail on cases studies cited in Section 2 (Annex A) and comment on certain aspects of Ofgem's modelling (Annex B).

## 2 Ofgem's option to "true up" for over/under performance arising from the leverage effect

20 The fourth option on which Ofgem seeks input is described as follows:<sup>4</sup>

***"Out or underperformance true up** – We could consider applying an adjustment (e.g. to RAV) at the end of the RIIO-2 price controls to adjust for licensees' actual out or underperformance over a defined evaluation period. The extent of the adjustment could range from a partial to full adjustment. This policy would seek to directly reduce outperformance earned by licensees over the period of elevated inflation. This adjustment would be sized in relation to the out or underperformance element only and would not seek to remove the indexation necessary to sustain real returns in respect of inflation."*

21 In this Section we discuss the following:

- (a) Ofgem's proposal is unambiguously a retrospective intervention (Section 2.1).
- (b) Retrospective regulation is expected to have damaging effects for consumers (Section 2.2).
- (c) Regulatory precedent from both the CMA and Ofgem demonstrates a strong desire in the past to avoid retrospective intervention (Section 2.3).
- (d) Section 2.4 summarises our conclusions.

### 2.1 Ofgem's proposal is retrospective

22 Ofgem describes its proposal as a "true up" but it is important to be clear about precisely what is being proposed here. Ofgem's proposal would have the effect of retrospectively reopening price controls which have already been settled. It would change – after the fact – fundamental aspects of how those price controls were agreed to operate, in order to bring about a materially different outcome.

23 A retrospective regulatory change can be defined as any adjustment that changes previously determined regulatory arrangements to impose new rules or requirements on actions already taken. As we explain further below, such changes – in particular when they arise unexpectedly and have the effect of confiscating value – by their nature undermine investor and management confidence in the predictability and stability of the regulatory regime. Where decisions of this kind are taken, a range of important and potentially highly material consumer harms will then result.

<sup>4</sup>

CFI page 9.



- 24 It is of course understood that regulatory arrangements will not necessarily remain as they are indefinitely. Regulators must be provided with the capacity to change their arrangements when this makes sense, in order to take account of new evidence and changed circumstances, to ensure that their arrangements continue to be relevant and effective.
- 25 However, to avoid being retrospective in nature, such changes must be well signalled in advance, thoroughly consulted on, and must only apply going forwards. This means the process through which change is made must adhere to well established regulatory principles – for example, the following key principles in respect of regulatory predictability were set out by the Department of Business, Innovation & Skills (BIS) in 2011:<sup>5</sup>
- *“the framework for economic regulation should provide a stable and objective environment enabling all those affected to anticipate the context for future decisions and to make long term investment decisions with confidence.*
  - *the framework of economic regulation should not unreasonably unravel past decisions, and should allow efficient and necessary investments to receive a reasonable return, subject to the normal risks inherent in markets.”*
- 26 These principles are also echoed by the National Infrastructure Commission (NIC). NIC considers that regulatory models need to work better for the public, and particular for the consumers, noting that *“long-term investors, who bring significant capital and subsequent benefit to the UK market, such as pension funds, value stability and predictability. Investors should receive a fair return on their investments, and be insulated from political cycles by predictable, stable regulation. To ensure the benefits of predictable regulation, it is important that forward looking regulation should be not changed retrospectively.”*<sup>6</sup>
- 27 Ofgem's calculations of the possible quantum of the leveraging effect incorporates the remaining years of RIIO-2. We note that an intervention even in respect of these future years would still be unambiguously retrospective in nature because it has been insufficiently signalled.<sup>7</sup> In particular:

<sup>5</sup> Department for Business Innovation & Skills (2011), Principles for Economics Regulation, Page 5.

<sup>6</sup> National Infrastructure Commission (2019), Strategic Investment and Public Confidence, page 14.

<sup>7</sup> Regulators may opt to manage future uncertainty through the use of targeted uncertainty mechanisms, designed to allow them to update past decisions to reflect information revealed during the price control. However, as confirmed by the CMA in its recent RIIO-2 appeals, regulators are not able to reserve for themselves an undue level of discretion in respect of how such mechanisms may be operated. Instead they should provide sufficient information to licence holders, to allow them to understand sufficiently, clearly and fully what future actions may be taken under each mechanism. This decision will support investor confidence in

- (a) In respect of RIIO-GD2, ET2 and GT2, Ofgem did not send any signal that it might contemplate changes to the way it treated inflation at any stage of the price control process. Any changes to inflation arrangements for these price controls could only therefore be interpreted as retrospective in nature.
- (b) In respect of RIIO-ED2, Ofgem signalled a potential concern regarding inflation and its intention to consult further at the Draft Determinations stage. However, no proper consultation was issued within the confines of the ED2 process. ED2 was concluded without Ofgem articulating clearly the precise nature of its concern, and without Ofgem identifying any potential steps that it might take to address its concern. Ofgem might consider that this was sufficient to provide licence holders some form of notice that a change may come. However, the absence of any meaningful description of what form that change might take currently makes it impossible for companies to have acted in an informed manner to preserve their interests in the light of some unknown future change. Therefore, we consider that if the proposed retrospective true up was applied to RIIO-ED2, this would be just as retrospective as if it was applied to other network price controls.

28 Reopening the remainder of a “deal” during the period within which all parties had understood that deal would apply, as previously determined at the RIIO-2 price control processes, would cause great harm to investor confidence. Companies will have set a course for the price control premised on one set of rules, only to have another set imposed part way through – upending both companies’ long-term operational and financial strategies. The CFI itself does not constitute sufficient signalling.

## 2.2 Retrospective regulation will have highly damaging effects for consumers

29 Achieving efficient investment in and operation of utility infrastructure is critical to the economic wellbeing of the UK. This has always been true in respect of energy networks, but with the importance of delivering net zero now well understood, such an outcome now takes on even greater importance.

30 Hitherto, the model of private ownership of networks coupled with independent arm’s length regulation has delivered excellent results across numerous relevant dimensions (e.g. securing large scale investment over decades, along with rapid improvements in efficiency and improved service delivery). This success has been underpinned by the stability and predictability of the regulatory framework which secures two key benefits:

---

arrangements by appropriately limiting a regulators ability to act in an unsignalled manner, and can clearly be viewed as supportive of our view that retrospective decisions are harmful to regulatory predictability and confidence.

- (a) it maintains the confidence of investors, reducing their perception of risk and lowering the required rate of return; and
- (b) it has the capacity to stimulate significant improvements in dynamic efficiency (both cost and quality), by providing confidence that when material investments (either monetary or in terms of time/resource input) are made, then the rewards of those will be shared with customers in line with established and well understood regulatory arrangements. When this confidence is eroded, the business case for investments that drive innovation is materially undermined.

- 31 The effect of these benefits on consumer outcomes cannot be overstated, in terms of lowering bills now, and in the future, while also securing improvements in service delivery.
- 32 The corollary of this is that it is widely accepted that retrospective regulation – of the kind inherent in Ofgem's "true up" proposal – would undermine the stability and predictability of regulation in a manner which is deeply harmful to investor confidence and, as a result, ultimately harmful to the interests of consumers.
- 33 One common interpretation of regulatory arrangements is that they crystallise a risk sharing arrangement, making it clear how possible future states of the world will affect company profitability. Where a specific instrument is in place, this signal is explicit – if a company is able to beat a target, it will earn a reward that can be calculated in advance. In the case of the leverage effect these rules are indeed explicit, with the process through which RAV is indexed to inflation, and the method through which cost of debt allowances set, all comprehensively documented in consultation/decision documents, the Price Control Financial Handbook/Model etc. But these signals can also be implicit, allowing investors and management teams to draw legitimate expectations around how certain eventualities might be treated based on the set of wider rules that that are in place, even if this rule set is not completely documented in, for example, licence conditions. By giving companies exposure to risks they can control (to at least some degree), an incentive is created for the company to manage those risks well. Often this requires the commitment of serious resources (e.g. capital, senior management time) and often it requires companies to take costly and risky decisions (e.g. taking on disruptive reorganisation with uncertain outcomes including potential downsides). Before doing so, companies need to make tough commercial decisions that will depend on their confidence in the regulatory arrangements.
- 34 When a regulator decides to change its regulatory rules *after* the event, it has the potential to fatally undermine confidence in the entire framework. Suppose the regulator decides, *ex post*, that the reward from some investment is just "too large", and that it must be capped. Both of the foundations of the current model are now at risk:

- (a) As an investor, you will now know that there is a risk your returns will be censored going forward if they are deemed “too high”. This will inevitably increase the perception and reality of regulatory and political risk, and will increase the cost of capital to the detriment of consumers.
- (b) It will also weaken the confidence of investors in the wider commercial framework. Going forward, the company must now factor into all of its future decisions the risk that if some improvement they make turns out to be “too good”, then the rewards to that may also be confiscated, whether in part or in full. Management teams will now “risk adjust” their business cases and this will inevitably limit their appetite for such investment and limit the speed with which innovations are identified, pursued and rolled out, again to the detriment of consumers.

35 None of this is new or controversial – it is an example of the well-known “Hold Up” problem in economics, premised on the difficulty of writing complete contracts, leading to well researched problems of under investment and service quality diminution. Of course, as explained above, regulatory frameworks can and do quite rightly develop over time – but it is critical that such development avoids adding undue uncertainty to the business environment.

36 Again, it is well understood that regulatory confidence and predictability provides a way through the “Hold Up” problem, which leads to better outcomes for all participants. It is also well understood that such confidence grows slowly, but can be lost very suddenly in the face of retrospective decisions. This is particularly true when retrospection affects highly material parts of the price control framework, which would unambiguously be the case here.

37 It is clear that Ofgem is keenly aware of the risks and costs that would result from adopting retrospective regulation, given the commentary it added to its description of this option:<sup>8</sup>

*“While this option may create some benefits for consumers by removing any temporary “excess” RAV growth (the precise scale of which is currently uncertain due to the aforementioned factors set out on pages 3-4), it could also create significant costs for consumers by undermining the stability and predictability of the regulatory framework if investors perceive elevated regulatory risk, leading in turn to a potentially sustained increase in the cost of capital borne by consumers. This is particularly pertinent in the context of the elevated investment requirements in the near term to facilitate the transition to Net Zero; with relatively small changes to the cost of capital able to outweigh any benefits associated with this option.”*

---

<sup>8</sup> CFI page 9.

- 38 While Ofgem's commentary will have provided some comfort to investors that this option is being considered appropriately and in the round, we consider that the fact that this option is even on the table at this stage will, in and of itself, still be disturbing to investors, as flagged in recent Moody's commentary on Ofgem's CFI:

*"We believe the most radical option, for example by clawing back retrospective outperformance in RIIO-2, was included largely for completeness. Such a change would undermine investor confidence in the predictability and stability of the regulatory regime when significant investment is required, especially by the electricity networks, to facilitate decarbonisation objectives."*<sup>9</sup>

## 2.3 Ofgem and the CMA have in the past recognised the material downsides of retrospection, and sought to avoid them

- 39 The principles of good regulation we have set out above are, in our view, widely recognised and respected and not controversial. Below we set out two examples (with further detail provided in an annex) where the principle of no retrospection has been adhered to:

- (a) the case of Phoenix Natural Gas (PNG), where retrospective action by the Utility Regulator (UR) was quashed following a successful appeal to the CMA; and,
- (b) Ofgem's limited mid period review during RIIO-1, where Ofgem took care to avoid straying into retrospection.

### Phoenix Natural Gas Competition Commission 2012

- 40 The issue of retrospection was explored thoroughly by the CC as part of its redetermination of PNG price control in 2012.
- 41 As part of its price control, the UR had determined that it would make retrospective changes to PNG's Total Regulatory Value, TRV (i.e. its RAB), to lower the return of and return on capital that PNG would be allowed to recover going forward. This involved proposals to change the way in which historic outperformance and capex deferral were treated within TRV, despite those treatments having been established as part of a coherent package at the preceding price control on the basis of a lengthy consultation, a well-considered appraisal of the overall compensation that would flow to PNG and the overall balance of risk and the good incentives for efficiency and investment that the package would create.

<sup>9</sup>

Moody's (2023) Ofgem outlines possible changes following high inflation, page 4.

- 42 The CC found that the UR's retrospective deductions from TRV should not be applied as they acted against the public interest, despite the TRV reduction being likely to lead to material short run bill reductions for consumers. In reaching this judgement, the CC set out the reasons why retrospective regulation would give rise to harm, noting in particular that the UR's proposed retrospective actions would "create a perception of regulatory instability"<sup>10</sup> thereby deterring and/or increasing the cost of funding the sector. The CC considered that in addition to directly increasing costs to consumers, these negative effects could harm the appetite of investors to fund needed future network expansion.
- 43 Ultimately the CC concluded that the harm arising from retrospective action would be sufficiently great to more than offset any potential benefit to consumers. We provide more detail on the CC's decision in Annex A.

### RIIO-1 Mid-Period Review

- 44 The design and execution of the Mid Period Review (MPR) at RIIO-1 provides an example of Ofgem having been aware of the dangers of retrospection in the past, and consciously choosing not to act in such a manner.
- 45 At RIIO-1 Ofgem decided to set the duration of its price controls to be 8 years, whereas almost all energy network price controls before that had a duration of 5 years. While Ofgem noted there are a number of benefits to operating a longer price control (e.g. networks will be able to carry out longer term planning), Ofgem was also cognisant that a long period without review brought with it some new risks e.g. that circumstances might change more substantially over a longer period, and that this might render aspects of the price control no longer fit for purpose.
- 46 In order to address this concern, Ofgem decided to put in place an MPR, to allow it to revisit some aspects of its decision. However, Ofgem was clear from the outset that the scope of the MPR should not, de facto, slip towards a full re-examination of all aspects of the price control in order to avoid the "risk that it could undermine the purpose of setting a longer control period".<sup>11</sup>
- 47 Consequently, Ofgem committed to a limited MPR, and also noted the need for a clear set of rules to be created to guide its operation. In summary, the MPR rules clearly states that the MPR will only cover new outputs Ofgem introduced at RIIO-1, and that Ofgem would not make retrospective adjustments as part of the MPR process. In particular, with regards to the RIIO-GD1/T1 MPR, Ofgem specifically noted that it would avoid retrospective adjustments and limit the MPR because

<sup>10</sup> Competition Commission (2012) Phoenix Natural Gas Limited price determination. Paragraph 31  
[https://assets.publishing.service.gov.uk/media/551948b8e5274a142b000186/phoenix\\_natural\\_gas\\_limited\\_price\\_determination.pdf](https://assets.publishing.service.gov.uk/media/551948b8e5274a142b000186/phoenix_natural_gas_limited_price_determination.pdf).

<sup>11</sup> Ofgem (2010) Consultation on strategy for the next transmission price control - RIIO-T1 Overview paper, paragraph 6.14.



failing to do so could “*potentially undermine the regulatory stability associated with an eight year price control and make companies less likely to commit to long term strategies that benefit consumers...[and] increase the cost of finance from investors as they could perceive this as creating additional regulatory risk.*”<sup>12</sup>

48 The principles set out by Ofgem for the RII0-1 MPR are not new. Ofgem has had a long-standing commitment to avoiding retrospective action since the RPI-X controls. For example, Ofgem was explicit about its commitments to “*not making retrospective adjustments to revenue*”<sup>13</sup> in the RPI-X control. Ofgem also stated that it understood the “*importance of maintaining regulatory certainty*”<sup>14</sup> during the RPI-X@20 review, which would serve as the basis for subsequent network price controls.<sup>15</sup>

## 2.4 Conclusions on Ofgem's Option 4

49 It follows from the discussion above that there is a clear rationale, both in theory and precedent, for Ofgem to rule out any retrospective action. Retrospective action would send a powerful signal to investors that *any* apparently agreed elements of the regulatory framework should be seen as conditional on Ofgem's ad hoc judgement and discretion. Investors and management teams will inevitably assume that the same logic *could* apply anywhere within the framework, and all future decisions will be taken on that risk adjusted basis.

50 This is particularly true in the present case since the indexed RAV plus real return construct has been a cornerstone of UK regulation from the very beginning, underpinning investor confidence in the regime. Ofgem itself in the CFI articulated the risks and potential harm to consumers – and we agree fully with the risks as described by Ofgem.

51 The fact that Ofgem has not ruled out retrospective change could already have created some disturbance to investor confidence. Any harm that may result from this can best be mitigated by Ofgem now signalling that:

- it is fully alive to the importance of stability and predictability in regulation;
- it will not stray into retrospection in its consideration of how to address the leverage effect; and
- it will adhere to well established regulatory best practice when framing, consulting on and implementing its proposals.

<sup>12</sup> Ofgem (2015) Consultation on a potential RII0-T1 and GD1 mid-period review, paragraphs 1.23 – 1.25. More details are set out in Annex A.

<sup>13</sup> Ofgem (2010) Handbook for implementing the RII0 model, paragraph 10.3.

<sup>14</sup> Ofgem (2009) Regulating energy networks for the future: RPI-X@20 Principles, Process and Issue, page 12.

<sup>15</sup> Ofgem (2010) Handbook for implementing the RII0 model, paragraph 5.6.

- 52 We therefore consider that in the interests of consumers and investors, this option should be removed from the suite of policy options under consideration as soon as possible. To avoid these harms and maintain confidence in its arrangements, Ofgem must now reassure investors that any changes it makes to its regulatory arrangements will be made only prospectively, and not retrospectively.



### 3 Ofgem's possible changes to future price control design

53 In its CFI Ofgem outlines under its third potential policy response a range of potential changes that it could make to elements of its price control arrangements when it sets the next round of network price controls, which could “*reduce or remove the out/underperformance effect or enhance the calibration of the control*”.<sup>16</sup>

54 Ofgem's CFI notes the following set of potential changes, observing that other options are available.<sup>17</sup>

- (a) “*Creating a CoD allowance for fixed rate debt and deflating this by forecast inflation and including an end of period true up to outturn*”;
- (b) “*Providing a nominal allowance for fixed rate debt*”;
- (c) “*Deflating the CoD by another long-run assumption*”; and
- (d) “*Implementation of a Return Adjustment Mechanism (“RAM”) type threshold for inflation to cap or share outperformance and underperformance*”

55 In this section, we comment on the set of changes that Ofgem has put forward here. But it is worth noting at the outset that since the options set out in the CFI are described at only a high level,<sup>18</sup> understandably given the complexity of the topic and stage Ofgem is at in its process, it is not possible at this stage to undertake a thorough and complete analysis of their relative merits versus the existing arrangements. In order to do so, it would be necessary for Ofgem to articulate much more fully exactly how it would design, calibrate and implement these changes in order for their effect to be understood. For most if not all of these options, granular choices on design and calibration will determine the effect of each option on the leverage effect and the price control, and hence on companies and consumers. It would be necessary to think through carefully how these changes may impact all aspects of the price control, to understand whether there would be further consequential effects that may need further change, in order to determine the overall effect of these changes. We have tried to illustrate these points in our comments below.

56 Before turning to discussion of the potential changes, it is helpful first to set out how the existing arrangements operate, and their effects, including their wider effects beyond just the leverage effect. We agree with Ofgem that the pros/cons of

---

<sup>16</sup> CFI page 8.

<sup>17</sup> Ibid.

<sup>18</sup> We note that the extent of the detail set out in the CFI is limited to what is reproduced in paragraph 54 above.

any changes being considered must be assessed relative to the merits of retaining the existing arrangements.

### 3.1 The existing regulatory arrangements

#### 3.1.1 Key components of the existing arrangements

- 57 In August 2022 Frontier was commissioned by the ENA to provide a paper on the leverage effect.<sup>19</sup> That paper set out a brief description of the existing arrangements which for convenience we reproduce here, with only minor changes to reflect process updates.
- 58 Under the existing RIIO arrangements, Ofgem changes the value of past investments (i.e. RAV) by outturn inflation each year (Ofgem uses CPI-H for RIIO-2, previously it used RPI). This means that those past investments are worth the same in real terms, regardless of what happens to inflation. Consistent with this, the allowed rate of return is specified in real terms. Using a real (as opposed to nominal) WACC means investors are only compensated for inflation once, through the indexation of RAV to CPI-H.
- 59 Indexing the RAV to outturn inflation has been a fundamental component of the regulatory model since privatisation – not just for energy networks, but across regulated infrastructure sectors generally. This approach has been a key underpinning of investors' understanding of the risks associated with investing in network assets, and business decisions will have been taken over decades in reliance on this long standing indexation treatment.
- 60 To set an allowed real cost of debt, Ofgem starts by calculating a nominal benchmark debt cost allowance based on an iBoxx index. This is converted into a real debt cost allowance using a contemporaneous CPI expectation – for example in RIIO-ED2 Ofgem uses the year-5 OBR CPI forecast.<sup>20</sup> In RIIO-GD1/T1 Ofgem explained that:<sup>21</sup>

*“The approach used to calculate the cost of debt index implicitly assumes that all network debt is index-linked. In reality, only a small proportion of the networks' debt is index linked and the networks are exposed to inflation risk on the rest of their debt profile.”*

<sup>19</sup> Frontier Economics (2022) Inverse Inflation Exposure – Response to ED2 Draft Determination. Section 2.

<sup>20</sup> The OBR does not produce a CPIH forecast. For the purpose of operationalising the cost of debt mechanism, Ofgem assumes that CPI is a sufficient proxy for CPI-H, as set out in its discussion of inflation issues in the RIIO-2 FD. See for example Ofgem (2022) RIIO-2 Final Determinations – Finance Annex (REVISED), paragraphs 1.6 – 1.8.

<sup>21</sup> Ofgem (2011) Decision on strategy for the next transmission and gas distribution price controls - RIIO-T1 and GD1 Financial issues, paragraph 3.55.

- 61 In short, by using a real WACC and indexing RAV to inflation, Ofgem has hitherto implicitly assumed that companies in theory could issue entirely index-linked debt, for which the principal of the debt and hence interest payments will vary with inflation. The same effect may also be achieved by taking on derivatives or other financial instruments which have the effect (in financial terms) of converting fixed-coupon debt to index-linked debt.
- 62 In a system with RAV indexation, companies with debt portfolios comprised solely of index-linked debt (or derivatives which achieve that effect) would be fully hedged against outturn inflation risk on their debt costs, although in reality it may be challenging for companies to perfectly hedge due to practical limitations in the capital market.
- 63 In addition, companies with network assets can choose, if they wish, to issue fixed coupon nominal debt. The principal and interest paid on this nominal debt are fixed at issuance and do not change with inflation over the life time of the instrument (unlike index-linked debt). If a network issues fixed coupon nominal debt it therefore takes on a “net inverse inflation exposure” – i.e. if outturn inflation in a given year is higher (lower) than long-term inflation expectations, any company that has issued fixed coupon nominal debt will receive a higher (lower) level of RAV indexation than is needed to match the profile of debt costs arising from its debt book in that year. Compared to issuing index-linked debt, where equity holders and debt holders are separately shielded from inflation risk, taking on nominal debt exposes both debt and equity holders to opposite sides of an inverse inflation risk. The inflation exposure of the equity investor is the leverage effect as described above in this paper, and by Ofgem in its CFI. The debt investor that purchases fixed coupon debt issued by the company takes on the other side of the exposure of the equity investor, i.e. the purchaser of a fixed rate debt product experiences a lower real return when inflation is high and a higher real return when inflation is low. So when inflation is different than expected, there is no real terms impact on consumers, but there is a value transfer between the debt holders and the equity holders. We do not see any leverage here in the traditional sense of the word, although we have adopted Ofgem’s terminology of “leverage effect” to avoid unnecessary confusion.
- 64 In expectation, there is no reason to believe that the long-run inflation assumption used in setting the cost of debt will systematically over/under-forecast inflation over time, since the Bank of England has the mandate to keep inflation (as measured using CPI) stable and at the target rate of 2%. We therefore see no reason to believe that the potential existence of a leverage effect will lead to companies expecting to receive more or less than Ofgem’s intended level of allowed return over time, regardless of the make-up of debt portfolios as between fixed and index-

linked debt.<sup>22</sup> Further, the effect of lower or higher outturn inflation in any given year will only flow through into cashflows (and hence customer bill levels) over a long time horizon i.e. accruing in the RAV before being released through depreciation of and return on RAV. We note that Ofgem has in its CFI published bill impact estimates, and consider this a very helpful way of placing the consequences of the leverage effect in context.

- 65 As Ofgem's statement from GD1/T1 (referenced above in paragraph 60) makes clear, the extent of the leverage effect borne by any individual company depends on its proportion of fixed to indexed linked debt (including derivatives) i.e. its chosen financial risk management strategy. While the leverage effect can give rise to a transfer of value between the equity holders and the nominal debt holders (as a result of the financing arrangement that they enter into) when inflation is different from expectation, the primary effect of inflation on all costs exists regardless of how the company is financed and how customers pay for that cost.
- 66 The leverage effect should therefore not be considered a value transfer between the company and the customer. There is nothing inherent in the system that creates this exposure, i.e. it is not arising as a result of any flaw in the underlying policy of indexation – it arises on a company-specific level and is a discretionary choice for each company when deciding how to finance its business. Hitherto (and as we explain further below) Ofgem has been clear that choices around how to finance were a matter for the company, subject to ensuring adherence to standard licence conditions.
- 67 For RIIO-ED2, Ofgem assumed that the notional company holds 25% index-linked debt and 75% nominal debt. For the other RIIO-2 price controls (GD/GT/ET) Ofgem assumed 30% index-linked debt. Given the presence of fixed rate debt in the assumed notional company debt portfolio, the leverage effect will be present for the notional company, but it will not reflect the position of any actual company (except by coincidence).

### 3.1.2 Track record of the existing arrangements

- 68 The existing arrangements outlined above are foundational aspects of the existing price control arrangements that have endured in broadly this form since vesting. This stable regulatory regime has helped to keep the cost of capital low, and brought forward a large quantum of investment over time to address the need for network renewal, expansion and enhancement. Confidence in the regime has also allowed network companies to invest resources in seeking efficiencies and

<sup>22</sup> We note that on page 1 of Ofgem's CFI, Ofgem states that it has a key policy objective of keeping stable "*real equity returns stable relative to inflation*." Ofgem then notes that "*where inflation deviates from long run assumption, real equity returns can vary in a manner inconsistent with the policy intent*." We are not aware of Ofgem having set out such a policy intent hitherto, and observe that there is no mention of this policy intention on the page that Ofgem cites in the CFI, from the RIIO-ED2 FD (see CFI footnote 7).

innovations.<sup>23</sup> Given this set of outcomes, we consider that the existing arrangements have served the sector well over decades to the benefit of both investors and consumers.

69 In particular the existing arrangements give rise to two highly attractive properties for investors:

- (a) The value of a network's past investments are protected against inflation, through RAV indexation. Moreover the existing arrangements make this outcome certain, not conditional in any way and not subject to regulatory discretion.
- (b) Since Ofgem has hitherto focused solely on the notional company, licensees have hitherto been free to finance their assets as they wish and in so doing have been able to choose whether to take on a negative inflation exposure (through issuing fixed rate debt) or hedge this risk away (through issuing index linked debt and/or taking on other instruments). Companies will have developed their investment plans and approach to financing their business cognisant of this, over a long period of time and typically using instruments with long tenors, in anticipation that these long-standing arrangements would endure. It was also understood that companies were responsible for their decisions (and exposed to the consequences of them), and must at all times adhere to the strict terms found in their Standard Licence Conditions (e.g. regarding ensuring the availability of necessary financial resources).

70 The leverage effect has always existed, but it has hitherto not given rise to any concern at Ofgem or elsewhere. Over the majority of the last two decades, inflation has been generally low and outturn never far from expectation (noting the volatility that can be observed during the GFC period). One needs to look back to May 1992 to find the last time that the annual observed CPIH exceeded 5%. In periods where outturn inflation was lower than expected, the notional equity investor will have experienced underperformance versus baseline allowances.

71 Ofgem states in the CFI that a similar symmetrical shock below the long run assumption may have compelled Ofgem to intervene, to protect consumers from the potential consequences of systemic underperformance of licensees and consequent instability in the sector. It is not clear what hypothetical intervention Ofgem refers to here.

- (a) It may be that Ofgem means that, in an extremely low inflation environment, where low RAV indexation leads to financeability difficulties, Ofgem would employ cash lock up to ensure all businesses run normally to protect consumers. If so, then we are unclear how Ofgem considers the possibility of

---

<sup>23</sup> See for example, Jamasb T., & Pollitt, M. (2007), Incentive regulation of electricity distribution networks: Lessons of experience from Britain. *Energy Policy*, 35(12), 6163-6187;

removing upside from the leverage effect to be symmetric from the perspective of shareholders. On the contrary, under this kind of intervention it seems that equity investors are materially exposed to the downside of the leverage effect, and symmetry requires them to benefit from the upside

- (b) If Ofgem means that if a similarly large loss due to leverage effect were to materialise Ofgem would put in measures to compensate for the lack of inflation log up on the RAV (e.g. to index RAV over a period by a number higher than actual outturn inflation to protect shareholders), then there is little evidence that this would have indeed happened. Ofgem's own modelling of the historic leverage effect shows that the cumulative loss due to past leverage effects on the T/GD sectors throughout RIIO-1 was similar in size to the current gain,<sup>24</sup> yet no intervention was contemplated by Ofgem during T1/GD1 when the inflation experience had been against equity.

72 We do not consider that this point, as Ofgem has framed it, has merit.

73 The current inflation environment is of course relatively volatile, more so than during other periods since the Bank of England acquired its independence. Despite this current volatility however, the leverage effect as estimated by Ofgem remains relatively small, in terms of its overall effect on bills. The Bank of England has expressed its commitment to returning CPI inflation to levels consistent with the target set by Government, i.e. 2%, and at the time of writing has increased base rates 14 times since December 2021, from a record low of 0.1% to 5.25%. Care needs to be taken therefore to ensure that effective and proven long run arrangements are not changed in response to one off events.

74 We consider that any potential change to the existing regulatory arrangements that could be made should be carefully weighed against the merits of the current options given:

- (a) the benefits that the existing, simple and transparent arrangements have secured over a long period of operation;
- (b) the still relatively small scale of the leverage effect when this is placed in context, e.g. in terms of bill impact and the scale of future needed investment; and
- (c) the unusual nature of the recent episode of high inflation and the events that triggered it.

---

<sup>24</sup> According to Ofgem's modelling, the total cumulative loss in RIIO-1 for the T/GD sectors (2013/14 – 2020/21) was -£1.4bn. The cumulative gain for the historic RIIO-2 years was £1.8bn. We observe that the gains and losses over the historical RIIO years are in the same order of magnitude.

### 3.2 Ofgem's set of potential price control design changes

- 75 As described above, Ofgem has set out in its CFI a non-exhaustive list of potential changes to price control design, each of which may modify the leverage effect in some way. Ofgem notes that while making a future change to arrangements would not address the past impact of the leverage effect, it would address the consequences of this effect in future, and would “*have a lower impact on the perception of regulatory stability and cascading impact on the cost of capital borne by the consumer*”.<sup>25</sup> We agree that Ofgem should avoid retrospective action for the reasons provided in Section 2.
- 76 As also already noted, the options set out in the CFI are described at only a high level, which is understandable given the complexity of the topic and the stage we are at in respect of Ofgem's process. However, as a result it is not at this stage possible to undertake a thorough and complete analysis of their relative merits versus the existing arrangements, since granular choices on design and calibration will be key to determining the effect of each option on the price control, and hence companies and consumers.
- 77 To provide an example of why detailed and definitive comment is not possible, we consider the fourth design change included in Ofgem's list, i.e. introducing a RAM to cap/share out/under performance. We consider RAMs because such a mechanism was recently introduced to the RIIO framework, to place limits on operational over/under performance, and the sector therefore has recent experience of considering the detailed design questions that emerge with such a mechanism. We note however that one could prepare a similar list of relevant questions for all of the other sub-options suggested by Ofgem under its policy Option 3. In respect of a RAM, the list of detailed design questions that would need to be considered includes the following.
- (a) Would this involve expanding the existing RAM, introduced at RIIO-2, to cover not just operational out/under performance but also the leverage effect? Or would this be a second RAM introduced separately with the sole purpose of sharing any effect arising from unanticipated inflation?
  - (b) Would the RAM be applied to the actual company structure, or would it apply to the notional company (and if so, how)?
  - (c) How wide would the bands of the RAM be set?
  - (d) How would sharing rates be determined when some threshold was passed?
  - (e) Would there be one set of thresholds created, or would there be multiple thresholds with progressively different sharing rates?<sup>26</sup>

<sup>25</sup> CFI page 9

<sup>26</sup> The operational RAMs in RIIO-2 have different sharing factors depending on the level of outperformance.



- (f) Would the mechanism be calibrated to be symmetric in expectation, and how might Ofgem calibrate such a mechanism?
- (g) Would any adjustment triggered by the RAM be applied annually with an end-of-period true up, or only at the end of the price control?
- (h) Would any adjustment triggered by the RAM be made to RAV or to revenues?

78 Without answers to these questions, detailed and rigorous analysis of the effect of this change is not possible, for example in respect of how a RAM might affect the evolution of customer bills, RAV, revenues (and hence cashflow) within period, revenue/cashflow volatility, the areas where companies are free to take financing decisions, and the potential spread of equity returns over time and what may cause those to change. Again, we note that a similar set of questions would need to be developed for each of the other sub-options, and the effect of those options may differ markedly depending on the answers.

79 It is however possible to provide high level observations on the options in Ofgem's CFI and their likely consequences. What is clear is that almost all of these proposed interventions, however they are designed, will lead to profound changes in the operation of the GB energy network regulatory regime, and could fundamentally alter many of the features and consequences of the existing arrangements that have underpinned the confidence of debt and equity investors hitherto.

80 Adopting some of these changes could come with significant challenges and far-reaching implications for how the price controls are run. The potential consequences/implications of the proposed options include:

- (a) Fundamentally altering price control mechanics and the basis on which the cost of capital is set:
  - (i) Under most of these proposals, RAVs will, in effect, no longer be fully indexed to inflation, and hence the value of past investments would no longer be fully inflation protected. Under some of these proposals tranches of RAV may not be inflation indexed at all. This in and of itself would be a major change to the existing regime and one that may change the appetite of investors to deploy capital in the sector. This would inevitably change investors' and consumers' exposure to inflation risk.
  - (ii) Under some of these options, the WACC may no longer be set in real terms, but parts of it may be nominal. This again represents a major change to the regime that investors will have reviewed when they entered the sector and the basis on which they have made investments over time.
  - (iii) Some of these options will cause the allowed rate of return to be set at different levels across companies, not because of some



underlying difference in the nature of the company, but as a result of the financing choices that have been taken, contrary to the existing principle that there is one cost of capital ).

- (iv) Under some of these options, it seems likely that the regime would switch from one that is anchored to a notional company, to one that operates entirely (or at least to a greater extent) on an actual company basis. Again, this would represent a major change in approach, and one that would reverse a long standing Ofgem position (i.e. that networks are free to choose their own financial structure).
- (b) Risks of unintended or detrimental consequences;
  - (i) Some of these proposals have the potential to induce significant further revenue volatility relative to the status quo, through for example the need to adjust and true up revenues, and this effect would need to be studied to understand if this was acceptable to consumers and whether it resulted in a construct that might harm financial metrics.
  - (ii) Some of these proposals may cause Ratings Agencies to change their approach to appraising companies and/or the wider sector, with knock on consequences for the actual cost of debt.<sup>27</sup>
  - (iii) Some proposals will have important consequences for the speed of money. Some seem certain to materially accelerate cash flow and could have the effect of markedly increasing bills in the short run.
- (c) Creating practical complexities and additional regulatory burden in implementation;
  - (i) Some of the options require setting a WACC allowance that has a nominal component to it. This may also create additional complexity in the price control regime, e.g. regarding how to determine headline WACC when moving costs/revenues from one time period to another in an NPV neutral manner.
  - (ii) Certain of these options seem to require Ofgem to split the RAV into further tranches, treated differently according to how they are financed. This is of course the case at present to some extent, in respect of the notional company being regarded as being funded in part by debt and in part by equity. But some of these proposals

<sup>27</sup>

We observe that such an outcome has already occurred in respect of utility infrastructure in Northern Ireland, following the introduction of an inflation true up for the allowed cost of debt as part of the GD23, a mechanism that appears consistent with Ofgem's sub-option 3(i). In respect of this change in arrangements by UR, Moody's commented "*PNG's credit quality is constrained by a deterioration in the stability and predictability of the regulatory regime. Significant changes to the framework were introduced without consultation late in the process relative to the 2023-28 regulatory period (known as GD23), including a novel inflation adjustment.*" See Moody's (2023) Phoenix Natural Gas Limited, Update to credit analysis following final determination.

go beyond such labelling into potentially requiring full RAV segmentation, with different segments being indexed differently, creating a new level of complexity.

- (d) It is not entirely clear whether any option can truly eliminate the leverage effect.
- (i) Ofgem has assessed the leverage effect at the notional gearing level with an assumed proportion of nominal debt (broadly based on current sector average), and presumably most of the options presented here would be calibrated in line with those assumptions.
  - (ii) However, if companies prefer to maintain some level of leverage effect as a part of their financing choices, they can still choose to increase the proportion of their actual nominal debt relative to this assumption and be subject to the leverage effect.
  - (iii) If many companies choose to deviate from the current assumptions, then the industry average actual proportion of nominal debt would change, which Ofgem could reflect at the next price control, thereby a dynamic where Ofgem is constantly chasing a moving target but never eliminates the leverage effect entirely.

81 In setting out the list of potential consequences above, the intention is not to signal that the changes contemplated by Ofgem under its Option 3 are too complex to be modelled or impossible to implement. That is not the case. But it is important to signal just how fundamental some of these changes would be to the regulatory construct, even if at first glance they may appear to be seemingly innocuous technocratic changes. The implications of some of these changes may be very large, and in our view it is not possible to judge whether stakeholders would find certain of these changes beneficial or harmful, or whether there would be a consensus among stakeholders. It is therefore essential that stakeholders are fully consulted on the detail of any changes proposed to the design of future price controls.

### 3.3 Consequences of our observations for Ofgem's future process

82 We understand that Ofgem is still at an early stage in its thinking. If Ofgem wishes to consider changes at the next price control, a lot more work is needed to flesh out these options. Careful analysis must be undertaken to fully understand the potential ramifications of each, across multiple dimensions, in order to understand whether any of these changes are likely to lead to better outcomes for consumers and/or may alter the extent to which investors are willing to deploy capital in GB energy networks. Ofgem will need to provide sufficient opportunity for stakeholders to undertake their own analysis. Since changes made in the areas discussed above may make further consequential changes to the arrangements necessary, we consider that any potential changes made here should be analysed

alongside other changes that may be made, e.g. following the recent FSNR process.

- 83 There would be substantial risks to Ofgem rushing to take a decision without having completed an appropriate depth of analysis, and for this reason we recommend that, should Ofgem decide that some adaptation may be needed, it should take this forward as part of a wider and more thorough package of work, i.e. as part of its work on Sector Specific Methodology Consultation.
- 84 As already noted, any potential changes should be assessed against the existing arrangements, given that these arrangements have underpinned good outcomes over a number of decades hitherto.

## Annex A Case studies on the negative effects of retrospective regulation

### A.1 Phoenix Natural Gas Competition Commission (CC) 2012

- 85 The issue of retrospection was explored thoroughly by the CC as part of its redetermination of PNG's price control in 2012.
- 86 As part of its price control, UR had determined that it would make retrospective changes to PNG's TRV (i.e. its RAV), to lower the return of and return on capital that PNG would be allowed to recover going forward. This involved proposals to change the way in which historical outperformance and capex deferral were treated within TRV, despite those treatments having been established as part of a coherent package at the preceding price control on the basis of lengthy consultation, a well-considered appraisal of the overall compensation that would flow to PNG, the overall balance of risk and the good incentives for efficiency and investment that the package would create.
- 87 The CC concluded that the long standing arrangements for PNG in respect of outperformance and deferred capex<sup>28</sup> did not operate against the public interest, and consequently ruled that the UR's retrospective deductions from TRV should not be applied. We note that the CC reached this judgement despite the TRV reduction being likely to lead to material short run benefits to consumers. The CC reported that UR's proposals would have led to an approx. 20% reduction in TRV<sup>29</sup>, and that this would have given rise to an approx. £16 reduction in annual gas customer bills<sup>30</sup>.
- 88 In reaching this judgement, the CC noted that two considerations were important:<sup>31</sup>
- *“whether these actions would create a perception of regulatory instability and whether this would have a significant effect in deterring future*

<sup>28</sup> We note that there were some components of PNG's deferred capex that the CC did consider it reasonable to deduct, since the sums related to projects that had been deferred originally in expectation that they would be delivered at some point in the future, but that in the intervening decade the needs case for these had become highly uncertain, i.e. it was not clear that these investments would ever be needed. Since it is general regulatory practice to true up RAV to reflect actual sums spent, the CC considered it appropriate to remove from TRV the element of capex deferral that related to those longer deferred projects that were now not needed. The CMA further noted that PNG could apply for funding afresh if it later transpired that these investments were needed. See CC (2012) Phoenix Natural Gas Limited Price Determination, paragraph 6-21 onwards

<sup>29</sup> [https://assets.publishing.service.gov.uk/media/551948b8e5274a142b000186/phoenix\\_natural\\_gas\\_limited\\_price\\_determination.pdf](https://assets.publishing.service.gov.uk/media/551948b8e5274a142b000186/phoenix_natural_gas_limited_price_determination.pdf). Paragraph 2.72..

<sup>30</sup> Ibid. Paragraph 2.70.

<sup>31</sup> Ibid. Paragraph 31.

*investment and/or increase the cost of future funding of existing and additional investment in gas distribution and other regulated sectors in Northern Ireland; and*

- *what the effect on future network expansion might be.”*

89 While the CC recognised the challenge in measuring any such harm, it ultimately concluded that the harm to investor confidence from retrospective adjustment would be sufficiently material to more than offset any benefit to consumers that may arise from the retrospective confiscation of RAV.

90 In reaching this view, the CC gathered a range of evidence from stakeholders, but it is clear that the views of Ratings Agents proved particularly influential. For example, the CC quoted directly from Fitch published analysis:

- *“Fitch understands that the retrospective clawing back of value for the benefit of customers is inconsistent with PNG’s existing license dated 26 June 2009 and represents an unexpected change in Ureg’s communicated regulatory approach. The regulator’s move to propose a retrospective TRV adjustment relating to outperformance dating from the years 1996-2006 is not considered by the agency to be good regulatory practice.”<sup>32</sup>*
- *“As the agency considers transparency and predictability of the regulatory regime to be a key rating driver for gas distribution networks, the outcome of the draft proposals could have further implications for how Fitch views the regulatory framework for gas distribution in Northern Ireland.”<sup>33</sup>*
- *“Given the retrospective TRV adjustment that includes a clawback of £59.6m of operating and capital expenditure outperformance, which is inconsistent with PNG’s existing licence, Fitch could change its view on predictability and supportiveness of the regulatory regime in Northern Ireland and revise the applicable ratio guidelines for PNG’s ‘BBB’ IDR.”<sup>34</sup>*

91 The CC further set out similar views expressed by Moody’s:

- *“Moody’s believes, that major changes to either the form of the price control or to one of its key components (e.g., the TRV) should be well communicated and explained with sufficient time for consultation among relevant stakeholders. This increases both the transparency and predictability of the regulatory framework. If UR’s position is that it always intended to make an adjustment to TRV, it is surprising that that was not communicated well in advance of the Initial Consultation Paper publication in August 2011. Given that the proposed amendments were introduced at such a late stage, Moody’s believes that UR’s actions fall somewhat short*

---

<sup>32</sup> Ibid. Paragraph 8.39.

<sup>33</sup> Ibid. Paragraph 8.41.

<sup>34</sup> Ibid. Paragraph 8.44.

*of transparent and predictable regulation. It could be argued, therefore, that UR's chosen approach has negatively impacted the perception of regulatory risk for PNG."*<sup>35</sup>

92 It is also worth noting that DETI – the relevant department responsible for energy policy in NI – provided a submission to the CC. While this submission was not directly critical of UR's actions, it did emphasise the importance of ensuring that the business environment in NI was attractive to support the efficient expansion of the gas network in NI.

- *"In this context, DETI's submission highlighted that 'the development and maintenance of an overarching business environment which is attractive to investors, both indigenous and international, and across all sectors, is crucial—especially in the current economic climate'."*<sup>36</sup>
- *"DETI recognized that given the scale of investments made by existing, and future, investors in the energy market, an important element was the delivery of a stable regulatory environment, consistent with good practice elsewhere in the UK. This sent appropriate signals not only to the players in the energy domain, but also to investors in the wider economy."*<sup>37</sup>

93 There are clear parallels here to the current case, where there is a need to attract a large quantum of capital into the energy network sector in order to support Net Zero policies.

94 In documenting its findings, the CC also provided summary advice to regulators on how they should contemplate making changes to regulatory arrangements.

*"In line with normal regulatory practice, our view is that any revision of previous regulatory determinations should be: well reasoned, properly signalled, subject to fair and effective consultation, clear and understood, and, normally, forward-looking."*<sup>38</sup>

## A.2 RIIO-1 Mid Period Review

95 The design and execution of the Mid Period Review (MPR) at RIIO-1 provides an example of Ofgem having been aware of the dangers of retrospection in the past, and consciously choosing not to act in such a manner.

96 At RIIO-1 Ofgem decided to set the duration of its price controls to be 8 years, whereas almost all energy network price controls before that had a duration of 5

---

<sup>35</sup> Ibid. Paragraph 8.49.

<sup>36</sup> Ibid. Paragraph 8.68.

<sup>37</sup> Ibid. Paragraph 8.69.

<sup>38</sup> Ibid. Paragraph 32.

years. While Ofgem noted that it hoped this would lead to more longer term planning, and greater efficiency savings and innovation, it noted that such a long period without a review also brought with it some new risks, e.g. that circumstances might change more substantially over a longer period, and that this might render aspects of the price control no longer fit for purpose.

97 In order to address this concern, Ofgem decided to put in place an MPR, to allow it to revisit some aspects of its decision. However, Ofgem was clear from the outset that the scope of the MPR should not, de facto, slip towards a full re-examination of all aspects of the price control in order to avoid the “*risk that it could undermine the purpose of setting a longer control period*”.<sup>39</sup> Consequently, Ofgem committed to a limited MPR, and also noted the need for a clear set of rules to be created to guide its operation.

- *We intend that the following rules should apply:*
  - *the review will only be used to adjust output measures or introduce or amend incentives linked to new or modified outputs where changes in circumstance meet the tightly defined scope of the mid-period review*
  - *if changes to outputs are necessary, we will not alter key price control parameters (for example incentive mechanisms and the allowed return) other than as required to accommodate the change to outputs*
  - ***we will not make retrospective adjustments at the mid-period review***
  - *we will look to apply the latest information available to set the level of incremental revenue*
  - *we will consult with stakeholders before making any changes.*<sup>40</sup>  
[emphasis added]

98 Ofgem subsequently stuck to these rules when it consulted on whether and how to implement the MPR during the respective price controls.

99 For RIIO-GD1/T1, Ofgem consulted on the MPR in November 2015<sup>41</sup> and reached its decision in May 2016.<sup>42</sup> In its consultation Ofgem reiterated that retrospective adjustments would not be considered:

<sup>39</sup> Consultation on strategy for the next transmission price control - RIIO-T1 Overview paper, Ofgem, December 2010. Paragraph 6.14.

<sup>40</sup> Decision on strategy for the next transmission price control - RIIO-T1, Ofgem, March 2011. Paragraph 6.22.

<sup>41</sup> <https://www.ofgem.gov.uk/publications/consultation-potential-riio-t1-and-gd1-mid-period-review>

<sup>42</sup> <https://www.ofgem.gov.uk/publications/decision-mid-period-review-riio-t1-and-gd1>



*"We made it clear that we would not use an MPR as an opportunity to re-open the price controls. We committed to not alter incentive mechanisms, other than as required to accommodate changes to outputs. We also ruled out making retrospective adjustments as part of the MPR, for example, to 'clawback' gains made from delivering the outputs set at the price control at lower cost than expected."*<sup>43</sup>

*"Changes to the key financial parameters (eg cost of capital) or to clawback outperformance are out of scope and we consider that any such changes could be harmful to consumers' long-term interests.*

*If we initiate an MPR for RIIO-T1 or GD1 and make changes to outputs, we are committed to not making retrospective adjustments, eg allowances related to previous years of the price control. We will also not make any changes to the cost of capital or change the totex (total expenditure) sharing factor.*

*As stated above, we think such issues are out of scope as they could potentially undermine the regulatory stability associated with an eight year price control and make companies less likely to commit to long term strategies that benefit consumers. Such changes could also increase the cost of finance from investors as they could perceive this as creating additional regulatory risk. We are therefore conscious of the need to balance the reduction of costs to consumers in the short term with the introduction of regulatory risk and uncertainty, which could ultimately lead to higher costs for consumers. When deciding which, if any, issues to take forward, we will be mindful of the potential risks and downsides of any changes being considered."*<sup>44</sup>

- 100 In response to its consultation, Ofgem noted that some stakeholders had suggested the scope of the MPR should be widened in order to *"consider output and funding requirements more generally in response to company forecasts of strong financial performance and also consider value for money to customers."* – noting in particular *"the role outputs are playing in delivering financial windfall for networks."*<sup>45</sup> However Ofgem ruled this out, stating *"Changing the framework by changing the scope of the MPR would damage confidence in the regulatory regime. Increasing regulatory risk in this way would lead to higher financing costs and costs to consumers. Given the significant sums invested in our energy networks, a small increase in the cost of capital would have a significant impact on*

<sup>43</sup> GD1/T1 MPR consultation, Executive Summary page 4.

<sup>44</sup> GD1/T1 MPR consultation, paras 1.23 – 1.25.

<sup>45</sup> GD1/T1 MPR Decision, Appendix 5.



consumers. *We think this impact would outweigh any short-term gains to consumers by clawing back money from areas beyond our proposed scope.*"<sup>46</sup>

- 101 While the above suggestions appeared to relate primarily to outperformance arising from output incentives, we note that Ofgem did not consider reopening its allowed cost of capital, despite having already decided to lower markedly allowed returns for electricity distribution networks at RIIO-ED1. At RIIO-ED1, following the publication of a pivotal review of allowed returns for UK infrastructure by the CMA as part of its redetermination of NIE's price control, Ofgem had decided to provide an allow cost of equity of 6% at 65% gearing. In contrast, at RIIO-T1 Ofgem had allowed NGET a cost of equity of 7% at 60% gearing. Notwithstanding potential differences in risk profile, it was clear that had Ofgem redetermined allowed returns at the Mid Period Review, it would have found a markedly lower number to be appropriate. However, it chose to maintain its FD commitment not to do so, despite the potential reduction in customer bills that would have resulted.
- 102 For RIIO-ED1, Ofgem consulted on the MPR in December 2017<sup>47</sup> and published its Decision in April 2018.<sup>48</sup> Ofgem framed this review in the context of returns that had been earned by the networks to-date in ED1<sup>49</sup> and expressly consulted on the possibility of a *"significant extension of scope"* of the MPR beyond what had been envisaged at the time of the FD, in order to *"capture financial and incentive performance and design"*.<sup>50</sup> In effect, this would have amounted to a retrospective amendment of the ED1 FD, which Ofgem noted was linked to *"a recent focus on what constitutes an acceptable level of financial return for network companies."* Ofgem noted the allowed cost of equity was on the table as being potentially subject to review<sup>51</sup> and noted the possibility of *"making changes to incentives or to the DNOs' baseline allowances, or by amending key price control parameters."*<sup>52</sup>
- 103 In its decision Ofgem noted that *"We have rejected an approach that would have provided for a wider extension of the scope of the MPR (Option 3). This is because we are concerned that this could undermine regulatory confidence and weaken incentives on DNOs to perform efficiently. This could result in increased costs, offsetting any short-term benefits, which would ultimately be borne by*

<sup>46</sup> GD1/T1 MPR Decision, page 4. See also paras 2.5 – 2.7.

<sup>47</sup> [https://www.ofgem.gov.uk/sites/default/files/docs/2017/11/ed\\_mpr\\_consultation.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2017/11/ed_mpr_consultation.pdf)

<sup>48</sup> <https://www.ofgem.gov.uk/publications/decision-mid-period-review-riio-ed1>

<sup>49</sup> See Consultation paras 1.8 – 1.22. See also Decision paras 1.7 – 1.17.

<sup>50</sup> See Consultation Chapter 3.

<sup>51</sup> Consultation para 3.4

<sup>52</sup> Consultation page 26

consumers.”<sup>53</sup> Ofgem was also clear that “...we said clearly that the MPR would narrowly focus on changes to output requirements. It would not be used as an opportunity to re-open the price control more widely or change any of the key financial parameters (such as the cost of capital).”<sup>54</sup>

---

<sup>53</sup> Mid-period review decision, Ofgem, February 2017. Page 5. See also paragraph 2.4: “We support retaining the scope of the MPR as defined. We believe that the potential costs of extending the scope to re-open the price control at this stage could offset any short-term benefits to consumers, primarily through reduced regulatory confidence and a weakening of incentives. A stable regulatory framework will allow us to maximise savings for consumers at the next round of controls under RII0-2. Deviating from the clearly signalled scope of the MPR could undermine this stability, weaken confidence and increase costs for consumers.”

<sup>54</sup> Mid-period review decision, Ofgem, February 2017. Paragraph 1.4.

## Annex B Observations on Ofgem's estimation of quantum

- 104 In respect of its general approach to estimating the leverage effect, we consider that Ofgem's method is broadly reasonable. However, it is important to caveat any empirical estimate of the effect, and we note that Ofgem itself was careful to do so in its CFI.
- 105 Ofgem states it took into account the following factors when arriving at its estimate of the "leverage effect"
- (a) The "counterfactual" and forecast levels of inflation;
  - (b) The length of the evaluation period;
  - (c) Consideration of notional and actual capital structure assumptions with respect to gearing and ILD levels;
  - (d) Treatment of inflation basis risk between the Retail Price Index ("RPI"), Consumer Prices Index ("CPI") and CPIH indices; and,
  - (e) The discount rate used to present outputs in net present value terms.
- 106 Ofgem acknowledges that there is a degree of judgement associated with the factors listed above which can have a material impact on the quantum. In particular, Ofgem discusses the "*length of the evaluation period*" and sensitivity of the estimated quantum to the counterfactual and forecast levels of inflation' assumed. We agree that these are important concerns, and we discuss these in the sections that follow.

### B.1 Overview of Ofgem's modelling approach

- 107 Ofgem's model is based on modelling the outturn nominal RAV based on actual and forecast outturn inflation, and comparing this against a counterfactual RAV set by relying on the long-run inflation expectations used to set the allowed cost of debt.
- 108 First, Ofgem models the value of **outturn RAV** due to RAV indexation. This means that over a period of multiple years, the RAV value increases by the compounded effect of annual inflation. For example, if inflation has been 2%, followed by 3%, the RAV increases by  $(1.02 \times 1.03) - 1 = 5.06\%$  over two years. We note that Ofgem's model relies on forecasts of outturn inflation for future years, which are inherently uncertain.
- 109 Then, Ofgem models what the RAV would have been (**counterfactual RAV**) had Ofgem's long-run expectation of inflation actually come to pass. In doing so, Ofgem has ensured that RAV additions made over time are treated appropriately. As such, the counterfactual RAV in any year is the previous year's RAV times the long-run inflation expectation, plus RAV additions uplifted with outturn inflation.

- 110 Ofgem's model reports the leverage effect on an annual basis. As both the outturn and counterfactual RAV are growing at the compounded rate of inflation (outturn vs long-run expected inflation, respectively), Ofgem isolates the marginal annual impact by taking the difference between the outturn and counterfactual RAV less the same difference in the previous year, to avoid double counting of the leverage effect in any given year.
- 111 As we discussed in Section 3.1.1 above, the leverage effect is driven by only the portion of the RAV which is funded by fixed rate nominal debt. As a final step in estimating the leverage effect, Ofgem isolates the portion of the annual impact pertaining to the portion of RAV funded by nominal debt only; for example, for the T and GD sector, this portion is, on average, 48% in RIIO-1. This is derived through the notional financing assumptions which assume that across T/GD companies, the notional gearing is 62% on average, and of this, 22% comprises of index-linked debt.
- 112 The annual leverage effect estimated by Ofgem is in nominal terms. In order to consistently express the leverage effect over a number of years, Ofgem converts these nominal impacts to real terms using its inflation series and the allowed WACC in RIIO-1 and RIIO-2.<sup>55</sup>

## B.2 Quantitative assessment should incorporate a sufficiently long period

- 113 As discussed above, Ofgem's model allows it to estimate the net leverage effect in consistent prices across a number of years, and to discount those back to a common point in time. With respect to the timeframe over which the quantum is estimated, Ofgem contemplates a variety of different time periods in its CFI. The quantum of the leverage effect naturally differs with the timeframe.
- 114 Any timeframe will only provide a 'snapshot' of the leverage effect, and it is moot which provides the most appropriate and balanced view. Outturn inflation has been high relative to expectations in recent years but the opposite has been true in the past e.g. in the majority of the RIIO-1 period. The analysis period needs to adequately consider periods of high and low outturn inflation, relative to forecast, in order to provide an adequately balanced view of gains and losses due to the leverage effect. For example, the option to base policy on only RIIO-2 would not

<sup>55</sup> In order to present leverage effect in a consistent price base (in 2023 terms), Ofgem takes a number of steps. First, Ofgem takes the real allowed WACC for RIIO-1 and RIIO-2. This is a weighted average figure for T/GD. Then, Ofgem uplifts this real WACC by outturn inflation, to ensure the annual stream of nominal RAV impacts is discounted with a nominal discount rate as required. Third, Ofgem derives a discount factor by taking the nominal WACC plus 1, with the entire series rebased to 2023 (i.e. 2023 – 1). Using these discount factors, Ofgem is able to express the aggregate leverage effect consistently in 2023 prices, while also accounting for the time value of money.

be appropriate as it would not adequately reflect the balance of experience with the leverage effect over time.

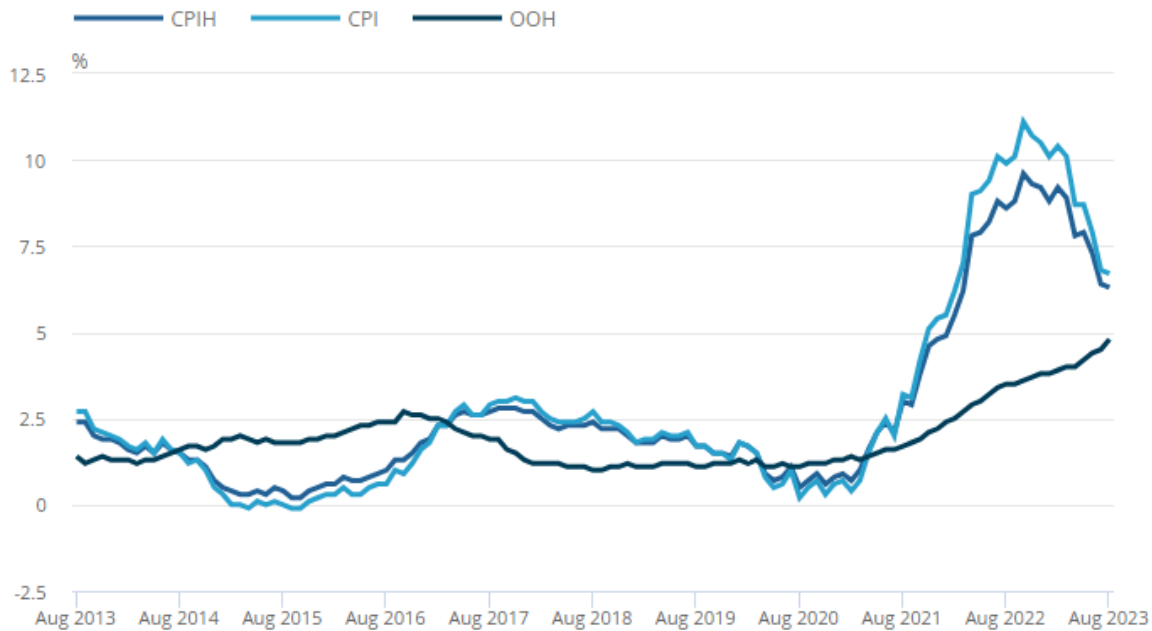
### **B.3 Ofgem has not taken account of basis risk between CPI and CPIH**

- 115 We consider Ofgem's list of factors for the quantitative assessment to be relatively complete, but we note that Ofgem did not account for basis risk between CPI and CPIH in its quantification of the leverage effect (although we note this was listed as one of the factors considered).<sup>56</sup>
- 116 The regulatory convention hitherto has been to assume that CPI and CPI-H are sufficiently close equivalents to be used interchangeably without giving rise to any concern. While this may have been a fair assumption in the past (and may be overall in the long run), recently, there has been a more material gap between the two series which has widened, especially from the period following September 2021. This is shown in the figure below. The average gap between CPI and CPI-H prior to September 2021 was 0.1%, and this widened to an average of 1% in the following period up to August 2023.

---

<sup>56</sup> CFI page 4, fourth bullet at the top of the page.

**Figure 1** CPIH, OOH component and CPI annual inflation rates for the last 10 years, UK, August 2013 to August 2023



Source: ONS, <http://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/consumerpriceinflation/july2023>

- 117 Ofgem has acknowledged that networks face CPI and CPI-H basis risk. In paragraph 2.24 of the Final Determinations for the RIIO-ET2, GT2 and GD2, Ofgem states that it “*considers that networks may want to raise CPI or CPIH debt for the first time in RIIO-2, due to the change in RAV inflation to CPIH. This market is relatively nascent, so we consider it reasonable to provide an additional allowance for new CPI/CPIH debt*”. On this basis, Ofgem provides a 5bps allowance on the cost of new debt as an RPI to CPI issuance/basis mitigation allowance.<sup>57</sup>
- 118 Ofgem has rightly identified that there is a basis risk between RPI and CPI-H. While Ofgem has provided an allowance to cover this risk (the 5 bps cited above), the CPI-H market for financial instruments is nascent, meaning it can be difficult, if not impossible, to manage exposure to this risk. Since the premise of Ofgem’s CFI is to explore the effects of the unusual inflation environment on network price controls, and the un-hedgeable gap between CPI and CPI-H is part of that unusual inflation environment, the exclusion of this exposure from Ofgem’s analysis feels

<sup>57</sup> Ofgem (2021) RIIO-2 Final Determinations – Finance Annex (REVISED), 2.24 – 2.27

inappropriate. If this basis risk was included in Ofgem's modelling, it would have led to a lower overall quantum of estimated benefit.

#### **B.4 The quantum estimated on the notional financing structure is not informative regarding the actual gains of any network**

119 We note that Ofgem's estimates of the leverage effect have been estimated based on notional gearing and notional assumptions of the proportion of index-linked debt. As such, Ofgem's estimates are only accurate to the extent networks align their financing structures to the notional assumptions. For example, if networks have financed themselves with a larger proportion of index-linked debt than assumed under the notional structure, Ofgem's would have over-estimated the leverage effect.

#### **B.5 Concluding comments on Ofgem's quantitative assessment**

120 Overall, we consider that Ofgem has conducted a reasonable, indicative high-level modelling exercise. However, this exercise is inevitably imperfect for the reasons we set out above. As such, any policy that is considered should be appraised cognisant of the inherent limitations of this empirical exercise.



Frontier Economics Ltd is a member of the Frontier Economics network, which consists of two separate companies based in Europe (Frontier Economics Ltd) and Australia (Frontier Economics Pty Ltd). Both companies are independently owned, and legal commitments entered into by one company do not impose any obligations on the other company in the network. All views expressed in this document are the views of Frontier Economics Ltd.