RIIO-3 APPEALS 2026

# Final determination Volume 2: Ongoing efficiency

29 October 2026



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# 5. Ground 1: Ongoing efficiency

## Introduction

5.1 The ongoing efficiency (**OE**) challenge reflects GEMA's assessment of the scope for productivity improvements that even the most efficient company in the sector can achieve, for example, by adopting new technologies or new management practices.

5.2 In practice, it is applied as a reduction to modelled cost allowances. OE differs from catch-up efficiency gains, where companies lagging in efficiency are incentivised to catch-up with the performance of the industry leaders.[1]

5.3 Cadent, NGN, SGN and WWU's appeals contained grounds relating to the OE challenge. Permission to appeal was granted on condition that the appeal grounds in relation to OE be considered together. We therefore discuss all the Appellants' arguments relating to OE in this chapter.

## Background to the RIIO-3 decision on OE

5.4 In its FD, GEMA set the OE challenge at 1% per year applied as a post-modelling adjustment to GEMA's modelled efficient costs (including opex, capex and repex) for all of the GDNs.

### GEMA sector specific methodology consultation and decision

5.5 In December 2023, GEMA consulted on its methodology for setting the OE challenge in RIIO-3. In its sector specific methodology consultation document, GEMA noted that at RIIO-2 it set the OE challenge at 1% per year based on Total Factor Productivity (**TFP**) estimates produced using EU KLEMS (EU KLEMS stands for EU level analysis of capital (K), labour (L), energy (E), materials (M) and service (S) inputs) data and other considerations. GEMA stated that its initial thinking was that it considered its RIIO-2 approach to be broadly suitable for RIIO-3 but welcomed stakeholder views on whether the approach was suitable, whether any specific methodological aspects could be improved or whether additional data sources or evidence could be used to inform setting the OE challenge.[2]

5.6 Having considered the responses to that consultation, in its sector specific methodology decision in July 2024, GEMA stated that it intended to use a wide range of evidence to set the OE challenge, including:[3]

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[1] Catch-up efficiency is the challenge set on less efficient companies to reduce costs learning from more efficient companies.
[2] GEMA (December 2023), RIIO-3 sector specific methodology consultation – overview document, paragraph 9.5.
[3] GEMA (July 2024), RIIO-3 sector specific methodology decision – overview document, paragraph 9.31.

(a) EU KLEMS data;

(b) network companies' historical performance;

(c) forward-looking productivity forecasts for the UK economy; and

(d) any other data sources that might inform its analysis.

5.7 GEMA also stated that it would consider whether the OE assumption of 1% per annum at the totex level implemented in RIIO-2 was still a reasonable starting point for RIIO-3.[4]

**Grant Thornton June 2025 report**

5.8 GEMA commissioned consultants Grant Thornton to assess OE evidence and produce a report with recommendations for the appropriate OE range for RIIO-3.

5.9 Grant Thornton stated that its approach was to:[5]

(a) consider historical evidence of productivity growth and what that could imply in terms of a plausible range for future OE;

(b) consider wider sources of evidence – particularly stakeholders' views, wider economic projections and regulatory precedent – which may also be relevant to GEMA in setting OE targets; and

(c) test whether GEMA's initial starting point proposed for the OE target (of 1%, contained in its Sector Specific Methodology Decision and consistent with RIIO-2) was consistent with the range of evidence.

5.10 First, Grant Thornton developed a broad OE range of -1.0% to 4.2% based on analysis of the EU KLEMS 2023 dataset. To derive this range, Grant Thornton considered a variety of different choices around:[6]

(a) the productivity metric (in particular, the choice of 'gross output' (**GO**) versus 'value added' (**VA**));

(b) comparator sectors (which sectors to use as comparators for regulated energy companies); and

(c) the time period used (whether to focus on more recent or longer time frames, and whether to exclude specific years).

[4] GEMA (July 2024), RIIO-3 sector specific methodology decision – overview document, paragraph 9.31.
[5] Grant Thornton (June 2025), Independent Report on Ongoing Efficiency, p3.
[6] Grant Thornton (June 2025), Independent Report on Ongoing Efficiency, p4.

5.11 Grant Thornton then narrowed its OE range to 0.1% to 1.3% based on the following factors.

### Choice of productivity measure

5.12 Grant Thornton chose to rely on the GO measure in its narrowed range. Grant Thornton stated that the GO measure is more consistent than VA with how the OE challenge is applied in practice as part of the regulatory framework, as GO relates to the total value of production rather than just the VA component and is therefore consistent with the application of the OE target to total expenditure.[7]

5.13 However, Grant Thornton also noted that regulators have typically considered both the GO and VA metrics in setting OE targets.[8]

### Choice of sectors

5.14 Grant Thornton considered three different combinations of comparator sectors which were based on analysis from CEPA (GEMA's adviser at RIIO-2) or proposed by the regulated companies in their RIIO-3 business plan submissions.[9] These are shown in Figure 1.1 below.

**Figure 1.1: Grant Thornton analysis of TFP VA and TFP GO Estimates for three time periods and nine sectors as proposed by CEPA, Economic Insight, Oxera and Frontier Economics[10]**

| Comparator sectors | Productivity Metric | 1970-1996 | 1997-2007 | 2010-2019 | *1970-2019 (excluding 2008 and 2009)* |
|---|---|---|---|---|---|
| Sectors used at RIIO-2:<br>1. Construction<br>2. Wholesale and retail trade; repair of motor vehicles and motorcycles<br>3. Transportation and storage<br>4. Financial and insurance activities | Value Added | 1.0% | 0.5% | ***-1.0%*** | *0.6%* |
| | Gross Output | 0.5% | 0.3% | -0.5% | *0.3%* |
| Sectors 1-4 above, plus:<br>5. Average of 6 selected Manufacturing subsectors<br>6. Information and communication<br>7. Professional, scientific and technical activities; administrative and support service activities | Value Added | 1.0% | 2.6% | 0.2% | 1.4% |
| | Gross Output | 0.5% | 1.3% | 0.1% | 0.7% |
| Sectors 1-4 above, plus:<br>6 Selected Manufacturing subsectors with each given equal weight relative to other sectors (5a, 5b, 5c, 5d, 5e, 5f)[1]<br>6. Information and communication<br>7. Professional, scientific and technical activities; administrative and support service activities | Value Added | 1.4% | ***4.2%*** | 0.3% | 2.0% |
| | Gross Output | 0.6% | 1.8% | 0.2% | 1.1% |

*Source: Grant Thornton, June 2025 Ongoing efficiency report for GEMA, Table 1.*

[7] Grant Thornton (June 2025), Independent Report on Ongoing Efficiency, p20.
[8] Grant Thornton (June 2025), Independent Report on Ongoing Efficiency, p20.
[9] Grant Thornton (June 2025), Independent Report on Ongoing Efficiency, p17.
[10] The sectors proposed by CEPA were from CEPA's RIIO-2 methodology for GEMA. The sectors proposed by Economic Insight, Oxera and Frontier Economics were proposed alongside the network companies' business plan submissions.

5.15 Grant Thornton noted that the choice of comparator sectors was a subjective exercise and that arguments could be made for the inclusion or exclusion of each of the sectors that were considered. Grant Thornton concluded that there was no compelling reason for the exclusion of specific sectors/sub sectors that should be considered as part of the broad OE range.[11]

5.16 Grant Thornton also decided to treat the combination of the manufacturing sub sectors as a single overarching sector, hence giving the combination of the sub sectors the same weight as other main sectors. It noted that all the sectors share some features with regulated energy companies, but it was not possible to determine, with greater precision, how much each sector has in common with regulated energy companies.[12] Throughout this document we refer to Grant Thornton's choice of comparator sectors (using the middle row of potential comparator sectors set out in Figure 1.1 above) as the '**Comparator Sectors**'.

**Choice of time period**

5.17 Grant Thornton considered three different time periods (1970-1996, 1997-2007 and 2010-2019).[13] It noted that the choice of time period sought to strike a balance in terms of granularity and breadth of evidence considered. It also noted that it did not identify individual business cycles, but that the time span covered by each of these three time periods is large enough to contain multiple full business cycles.[14]

5.18 For each of the time periods, Grant Thornton noted the following.[15]

(a) 1970-1996: many of the changes that happened in the period, including the 1970s energy crisis, de-industrialisation and shift towards a service sector economy, and privatisation and deregulation of several economic sectors, were unlikely to be repeated.

(b) 1997-2007: may have parallels with the current wave of investment in artificial intelligence (**AI**), and trend towards greater digitisation of the economy.

(c) 2010-2019: economic and productivity growth during the period was influenced by the aftermath of the Global Financial Crisis (**GFC**), an unusually long and deep recession by recent historical standards that had repercussions across multiple sectors of the economy.

[11] Grant Thornton (June 2025), Independent Report on Ongoing Efficiency, p20.
[12] Grant Thornton (June 2025), Independent Report on Ongoing Efficiency, p20.
[13] Grant Thornton excluded the years of the GFC (2008 and 2009) and of the Covid-19 pandemic (2020 and 2021) given that these were (1) outliers in terms of productivity growth; (2) unprecedented events in recent history that have a low likelihood of being repeated in the near future.
[14] Grant Thornton (June 2025), Independent Report on Ongoing Efficiency, p20.
[15] Grant Thornton (June 2025), Independent Report on Ongoing Efficiency, p20-21.

5.19 Grant Thornton concluded by using average productivity estimates from the three different time periods to arrive at a plausible range, but it did not make a recommendation on how much weight should be given to each of the different time periods. Grant Thornton noted that this is something that would need to be considered by GEMA, with reference to a wider evidence base.[16] Grant Thornton proposed a range of 0.1% to 1.3% to GEMA. This range was derived using the GO measure and the average of the Comparator Sectors. The 0.1% used the time period 2010-2019 and the 1.3% used the time period 1997-2007.[17]

## GEMA draft determination

### Overall OE range

5.20 In its DD in July 2025, GEMA noted that it considered Grant Thornton's OE range of 0.1% to 1.3% to be too broad to reflect the specific factors that it considered are relevant for the energy sectors.[18]

5.21 GEMA therefore considered the network companies' business plan assumptions on OE to inform its range. GEMA noted that National Grid Electricity Transmission (**NGET**) was the most ambitious company, proposing OE of 0.7% per year for RIIO-3.[19] GEMA also noted that regulated companies and their consultants all have an incentive to aim down in their OE proposals and to make analytical choices which favour lower growth accounting outcomes.[20]

5.22 GEMA concluded that the bottom half of the range identified in the Grant Thornton report, including the proposals made by the majority of companies (including the 0.5% proposed by the GDNs in their business plans submitted to GEMA), was not sufficiently challenging for a company operating in a regulated environment and would represent a significant departure from regulatory precedent.[21] GEMA's view was that 0.7% was an appropriate lower bound for its plausible range within which the OE challenge should be set.

5.23 GEMA set the upper bound of its plausible range at 1.3%, using the upper bound of Grant Thornton's range (set out in paragraph 5.11 above).

5.24 GEMA considered that a range of 0.7%-1.3% would better reflect the potential for above-average technological change and the need to provide for a sufficiently strong incentive to improve productivity.[22]

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[16] Grant Thornton (June 2025), Independent Report on Ongoing Efficiency, p21.
[17] Grant Thornton (June 2025), Independent Report on Ongoing Efficiency, p21.
[18] GEMA (July 2025), RIIO-3 Draft Determinations Overview Document, paragraph 8.29.
[19] GEMA (July 2025), RIIO-3 Draft Determinations Overview Document, paragraph 8.30.
[20] GEMA (July 2025), RIIO-3 Draft Determinations Overview Document, paragraph 8.31.
[21] GEMA (July 2025), RIIO-3 Draft Determinations Overview Document, paragraph 8.31.
[22] GEMA (July 2025), RIIO-3 Draft Determinations Overview Document, paragraph 8.32.

**Selecting the OE challenge within the plausible range**

5.25 GEMA noted that using EU KLEMS data is a useful source of information on productivity trends in the UK, but that relying solely on historical productivity data has limitations when forecasting future gains. GEMA stated that it therefore considered a range of factors in determining the proposed OE challenge for RIIO-3.[23]

(a) Potential for both embodied and disembodied technical change.

(b) Potentially lower measurement in the VA metric, which tends to produce higher TFP estimates compared to the GO metric.

(c) Companies' strong ambition to deliver significant technological change through their information technology and telecoms (**IT&T**) and data and digitalisation (**D&D**) activities in RIIO-3.

(d) Companies' ability to benefit from efficiency gains resulting from historical innovation funding in RIIO-2.

(e) The time period used in the EU KLEMS analysis, which includes the period of slower UK productivity growth since 2009.

(f) Recent UK regulatory precedent.

(g) Company OE submissions.

(h) Independent forecasts of economy-wide productivity trends over RIIO-3.

5.26 GEMA also stated that setting a suitably stretching OE target - reflecting the scale of new investments, as well as efficiency gains and innovation in the wider economy - helps ensure value for money by encouraging continued efficiency improvements.[24]

5.27 GEMA stated that it considered an OE target on totex across its plausible range:[25]

(a) 0.7%: the bottom-end of GEMA's plausible range. GEMA noted that this represents the highest OE target proposed by the companies, representing a relatively pessimistic view of the outlook for the OE improvements possible in RIIO-3. GEMA stated that this approach places weight only on quantitative factors, with little consideration given to qualitative evidence.

(b) 1.3%: the top-end of GEMA's plausible range. GEMA noted that this represents an immediate return to the highest levels of average productivity

[23] GEMA (July 2025), RIIO-3 Draft Determinations Overview Document, paragraph 8.33.
[24] GEMA (July 2025), RIIO-3 Draft Determination Overview Document, paragraph 8.22.
[25] GEMA (July 2025), RIIO-3 Draft Determination Overview Document, paragraph 8.34.

growth observed historically. GEMA added that this target places significant weight on the delivery of strong productivity gains through: disembodied technical change; historical and planned IT&T; D&D; and innovation project investments. GEMA stated that while not impossible, given the inherent uncertainty about the future of the economy, it did not consider it reasonable as an OE target for RIIO-3.

5.28 Taking account of the above points, GEMA concluded that the 1% mid-point of its plausible range represented a balanced view which was grounded in quantitative analysis while also giving appropriate weight to the qualitative considerations (which include those noted above in paragraphs 5.25 and 5.26).

### GEMA final determination decision

5.29 In its FD in December 2025, GEMA set a 1% per year OE challenge for RIIO-3. GEMA stated that OE was applied as a post-modelling adjustment to its view of modelled efficient costs. GEMA noted that it set the OE from the first year of forecast costs (ie 2024/25) and compounded across the remainder of the forecast to the end of RIIO-3 (2030/31).[26]

5.30 GEMA referred back to its DD approach and then addressed comments from the network companies in the following areas:[27]

(a) time period of the analysis;

(b) comparator sectors;

(c) specific sector considerations; and

(d) GEMA's decision making process.

#### Time period of the analysis

5.31 GEMA noted that defining business cycles, and the metrics on which they are based, entails a degree of judgement. GEMA stated that its decision was made on the basis of alignment with external sources.[28] GEMA defended the use of the 1997-2007 period as robust and appropriate and noted that it may be appropriate to include 2008 and 2009 within the last time period (making that period 2008-2019). Further, GEMA stated that the inclusion of 2008 and 2009 did not alter Grant Thornton's narrowed range of 0.1-1.3%.[29]

[26] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.21.
[27] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.23.
[28] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.31.
[29] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.30.

### Comparator sectors

5.32 GEMA decided to use a simple average to weigh its Comparator Sectors (consistent with those included in Grant Thornton's analysis) within the growth accounting analysis that informs its FDs. GEMA noted that it remained concerned about using differentiated weights for different sectors because of the risk of introducing spurious accuracy.[30]

### Sector specific considerations

5.33 GEMA set the OE challenge at the same level for all sectors across its RIIO-3 price controls (gas distribution, gas transmission and electricity transmission). GEMA took the view that all network companies start the price control with the same opportunity to exploit as yet unknown productivity gains.[31]

5.34 GEMA did not agree with Cadent's submissions that the declining demand outlook for the gas network makes realising improved economies of scale more challenging, with investments to improve efficiency requiring a faster payback than previously.[32]

### GEMA's decision-making process

5.35 GEMA stated that its decision to set OE at 1% for RIIO-3 reflected its regulatory judgement on an appropriate level of OE challenge for regulated energy network companies. GEMA added that OE is an important part of the regulatory toolkit when setting ex ante cost allowances, and GEMA concluded that it is important that companies are challenged to deliver productivity gains on an ongoing basis, particularly with record levels of investment expected during RIIO-3.[33]

5.36 While GEMA did not consider independent forecasts of wider UK productivity in the DDs, it referenced economy wide independent productivity forecasts as part of its evidence base in the FDs. GEMA noted that while it had given qualitative consideration to independent forecasts of wider UK productivity growth from the Office of Budget Responsibility (**OBR**) and Bank of England (**BoE**) in coming to its OE target, its approach did not tie the outcome directly to such forecasts, noting that:[34]

(a) GEMA would expect regulated companies to be able to outperform the average UK firm, which such forecasts represent; and

[30] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.32.
[31] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.38.
[32] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.39.
[33] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.43.
[34] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.47.

(b) these forecasts are uncertain and are liable to change in the future, as the economy develops and indicators are updated.

5.37 GEMA noted the OBR's November 2026 downgrade of the UK productivity forecasts, which resulted in a 0.3% decrease to the medium-term outlook for UK productivity since its previous forecast from 1.3% to 1%. GEMA noted that this forecast sits 'within at the top-end' [sic] of the narrow range it used to set the OE challenge in RIIO-3.[35]

5.38 GEMA stated that network companies have greater potential to outperform the wider economy because they operate within the RIIO price control frameworks. GEMA noted that it considered that this insulates the network companies from the wider economic productivity slowdown due to higher certainty over revenues and returns than for companies operating in competitive sectors. GEMA noted that this allows for greater management focus on cost savings and cost efficiency.[36]

5.39 GEMA stated that giving qualitative consideration to VA measures of productivity and the potential for both embodied and disembodied technical change is appropriate. GEMA noted that considering embodied technical change (ie related to quality improvements in inputs) is important when setting the efficiency challenge, as the potential for productivity growth may be underestimated if it is excluded.[37]

5.40 GEMA also noted the allowances for IT&T and D&D investments in its FDs, which include ambitions to leverage AI and machine learning to drive efficiencies, deliver world-leading technology to remain at the frontier of efficiency, foster cultures of continuous improvement, and adopt coordinated approaches to drive efficiency across business units.[38]

5.41 GEMA concluded that setting an OE challenge is an exercise of regulatory judgement and involves taking account of multiple factors as well as assessing the relevance of different evidence sources in the context of regulated network companies. GEMA added that it considered that regulated companies are afforded protection through the regulatory framework, and it considered this supported setting a stretching but achievable OE target for RIIO-3.[39]

## The grounds of appeal

5.42 We set out below the overarching grounds of appeal from each of the Appellants.

[35] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.49.
[36] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraphs 8.50 and 8.51.
[37] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.52.
[38] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.53.
[39] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.55.

5.43 Cadent submitted that, in wrongly determining the OE challenge of 1%, GEMA made a series of errors:[40] [41]

(a) GEMA erred in moving the lower bound or 'floor' of the 'plausible range' up from 0.1% to 0.7%, thereby entirely disregarding the lower part of the 'plausible range' found by its own appointed experts;

(b) GEMA's decision to set the OE challenge at 1% was inconsistent with, and/or failed to take account of, and/or failed to have sufficient regard to, the slowdown in productivity growth since 2008 (for which the economic evidence is clear);

(c) GEMA's decision to set the OE challenge at 1% was inconsistent with, and/or failed to take account of, and/or failed to have sufficient regard to, independent productivity forecasts evidencing that the OE challenge should fairly and realistically be set at a rate well below 1%;

(d) GEMA erred in assuming that regulated network companies are insulated from wider productivity slowdowns in the UK economy; and

(e) GEMA's decision to pinpoint the OE challenge (within GEMA's plausible range) at 1% was not reasonably open to it on its assessment of the qualitative factors cited in the FD.

5.44 NGN submitted that GEMA was wrong for the following reasons:[42]

(a) **Error 1**: An OE parameter of 1% was not compatible with the evidence of the UK's sustained and ongoing structural productivity weakness:

(i) **Error 1A**: GEMA mistakenly and erroneously relied upon the OBR's labour productivity growth forecast (ie output per hour) instead of TFP growth forecasts; and

(ii) **Error 1B**: GEMA erred in concluding that having regard to the latest OBR forecast requires in-period adjustments;

(b) **Error 2**: GEMA's assertion that energy networks are 'insulated' from and can 'outperform' the economy-wide slowdown in productivity is unevidenced and flawed;

[40] Cadent NoA, paragraph 63.
[41] We describe below the statutory grounds of appeal into which Cadent, and each Appellant, said the errors they alleged fall.
[42] NGN NoA, paragraph 42.

(c) **Error 3**: GEMA inappropriately relied on a single piece of evidence (NGET's 0.7% business plan assumption) as an absolute floor on its OE assessment and disregarded other relevant evidence; and

(d) **Error 4**: GEMA relied on qualitative factors in support of its OE figure that are unsubstantiated and/or spurious.

5.45 SGN submitted that GEMA erred in imposing an OE challenge of 1.0%. SGN said that the available evidence does not support such an OE challenge, which is inconsistent with the prevailing macro-economic backdrop, and GEMA's reasoning is flawed. SGN contended that GEMA erred in the following respects:[43]

(a) **Error 1**: GEMA erred in setting a 1.0% OE challenge that is incompatible with the rate of UK productivity improvement since 2008 and/or is incompatible with and misinterprets recent, independent forecasts. SGN notes that:

(i) a 1.0% parameter is incompatible with the past and future evidence of the UK's sustained and ongoing structural productivity weakness; and

(ii) GEMA's consideration of future forecast-data has been based on incorrect, misinterpreted and incomplete data.

(b) **Error 2**: GEMA's expectation that gas networks are insulated from and therefore can materially outperform the economy wide slowdown is not supported by the evidence and is based on flawed reasoning.

(c) **Error 3**: GEMA erred in finding 0.7% to be the minimum OE companies can achieve and/or that 0.7%–1.3% constitutes a plausible or narrow plausible range. SGN notes that:

(i) GEMA's reasoning that 0.7% is the minimum plausible OE level that all networks can be expected to achieve is based on a single data point and is demonstrably flawed;

(ii) GEMA's 1.3% upper bound is incompatible with recent outturn and forecast data, and on its own DD reasoning, is not 'reasonable'; and

(iii) GEMA has effectively 'aimed up' in setting its 'narrow plausible' range, such that its 'midpoint' in fact materially exceeds the upper bound considered credible by economic experts and data.

(d) **Error 4**: GEMA's assertion that qualitative factors support a 1.0% OE assumption is unevidenced and is based on flawed reasoning.

[43] SGN NoA, paragraph 30.

(e) **Error 5**: GEMA has erred by disproportionately decreasing allowances by setting a higher OE on the basis that the OE should be applied to stretch and incentivise companies to deliver productivity improvements

5.46 WWU submitted GEMA's 1.0% OE challenge should be quashed for three independent and cumulative reasons.[44]

(a) **First**, GEMA's central assumption – that regulated networks are 'insulated' from the economy wide slowdown in productivity and can outperform competitive benchmarks – is wrong because it:

(i) lacks any evidentiary support, repeating an error the CMA corrected at RIIO-2;

(ii) ignores that many of the same structural productivity drivers affecting the UK economy also demonstrably affect gas distribution networks; and

(iii) contradicts basic regulatory economic principles about competitive benchmarking.

(b) **Second**, GEMA committed multiple errors in its quantitative methodology that systematically bias the result upward. It:

(i) used incorrect OBR forecast data (labour productivity instead of TFP);

(ii) failed to take appropriate account of the November 2025 OBR forecast downgrade published before the FD;

(iii) relied on Grant Thornton's analysis containing material errors in external forecast interpretation;

(iv) changed its methodology from RIIO-2 to place less weight on post-GFC data despite stronger evidence of structural productivity weakness that continued to support the approach adopted for GD2;

(v) adopted a flawed 0.7%–1.3% 'plausible range' that excluded outcomes the evidence supported, independently of its selection of 1.0% as the midpoint; and

(vi) treated NGET's challenging business plan OE proposal of 0.7% as the minimum all regulated networks should achieve.

[44] WWU NoA, paragraphs 1.4-1.7.

(c) **Third**, GEMA relied on qualitative factors to justify a 1.0% OE challenge that are either unevidenced, irrational, or repeat errors the CMA has already rejected. It:

(i) mischaracterised OE as an 'incentive' or 'stretching target' when it serves neither function under ex ante regulation;

(ii) invoked innovation funding and IT&T investment without evidence that these create productivity opportunities beyond economy-wide benchmarks and in circumstances where GD3 innovation funding, in common with GD2, is aimed at energy transition rather than 'business as usual' innovation; and

(iii) repeated the flawed 'innovation uplift' logic the CMA rejected at RIIO-2 for lacking evidential support.

5.47 Under section 23D(4) of the GA86 the CMA may allow the appeal only to the extent it is satisfied that the decision under appeal was wrong on one or more of these grounds (the **statutory grounds of appeal**):

(a) GEMA failed properly to have regard to the matters referred to in section 23D(4)(2) of the GA86 (its principal objective and statutory duties);[45]

(b) GEMA failed to give appropriate weight to the matters referred to in (a);

(c) the decision was based on an error of fact;

(d) the licence modifications fail, wholly or partly, to achieve their stated effect; and

(e) the decision was wrong in law.

5.48 The Appellants submitted that the errors described above fell within various of the statutory grounds of appeal, as we describe in the remainder of this section of our final decision. They all give rise, one way or another, to an overall matter for determination of whether GEMA's decision was wrong because GEMA erred in setting the OE challenge at 1%.

5.49 Having carefully considered the Appellants' NoAs, it appears to us that their submissions fall into three broad matters which, alone or cumulatively,[46] vitiate GEMA's decision. Namely, was the decision wrong because GEMA erred:

[45] The matters referred to in section 23D(4)(2) GA86 are those to which GEMA must have regard: (a) in the carrying out of its principal objective under section 4AA GA86; (b) (b) in the performance of its duties under that section; (c) in the performance of its duties under sections 4AB and section 4A; and (d) in the performance of its duties under section 132 (1) and (2) of the Energy Act 2013.
[46] Which means that, as well as considering each of these bases separately, we should consider if the effect of all three together is such that it makes the Decision wrong on any of the statutory grounds.

(a) in treating regulated network companies as insulated from wider productivity slowdowns in the UK economy (the **Insulation Matter**);

(b) in its use of quantitative data in setting the OE challenge (the **Quantitative Matter**); and / or

(c) in its use of qualitative factors in setting the OE challenge (the **Qualitative Matter**)?

5.50 We have considered each of these matters in turn below. We have also considered the interaction between them and whether, given that interaction, GEMA erred in setting its OE challenge.

5.51 In respect of each matter, we have identified the statutory grounds of appeal on which the Appellants rely and their supporting submissions. We consider, in light of those grounds and submissions:

(a) the statutory question(s) for determination;

(b) subsidiary questions to be determined in order to answer the question(s) in (a); and

(c) relevant analytical issues which we need to assess to answer the questions in (a) and (b).

5.52 We structure our assessment by first considering the relevant analytical issues, namely, the Insulation Matter, the Quantitative Matter and the Qualitative Matter, and then by concluding with our overall assessment on each of the subsidiary questions for determination.

## The Insulation Matter: insulation of network companies

### Statutory question for determination on the Insulation Matter

5.53 NGN submitted that GEMA's decision was wrong, owing to GEMA's incorrect treatment of regulated network companies as insulated from wider productivity slowdowns in the UK economy, on statutory grounds (a), (c), (d) and (e) in paragraph 5.47 above. SGN[47] and Cadent[48] submitted so by reference to statutory grounds (c) and (e), and WWU by reference to (a), (b), (c) and (e) in that paragraph.[49]

[47] Inferred from SGN NoA, section 7.5 heading 'Error 2: GEMA's expectation that gas networks are insulated from and therefore can outperform materially the economy wide slowdown is not supported by the evidence and based on flawed reasoning' read together with paragraph 473.
[48] Cadent NoA, paragraphs 94 and 95.
[49] WWU NoA, paragraphs 4.17, 4.24 and 4.41.

5.54 Accordingly, the statutory question for our determination of the Insulation Matter is:

> Was the decision wrong because, in treating regulated network companies as insulated from wider productivity slowdowns in the UK economy, GEMA failed to have proper regard to, or give appropriate weight to, the matters in section 23D(4)(2) of the GA86 (its principal objective and its statutory duties); made the decision based on an error of fact; made licence modifications that failed to achieve the stated effect; or the decision was wrong in law.

**Subsidiary questions**

5.55 Taking account of the Appellants' submissions, the subsidiary questions for our assessment, in order to determine the statutory question on the Insulation Matter, are whether, in its assessment that regulated network companies are insulated from the wider economic slowdown in productivity and can be expected to deliver higher rates of improvements in productivity, did GEMA:

(a) fail properly to have regard to, and/or to give appropriate weight to its **statutory duties** because, in failing to evidence that regulated network companies will outperform wider economy productivity growth and/or in making an assessment which is not supported by economic theory,[50] GEMA breached its duties to have proper regard to:

(i) its principal objective to protect the interests of existing and future consumers under section 4AA(1) GA86.[51] The interests of consumers require that GDNs are able to fund the cost of their activities needed to perform essential functions.[52] Regulatory error ultimately manifests in higher financing costs passed to consumers;[53]

(ii) the principles of best regulatory practice under which regulatory activities should be transparent, accountable and consistent under sections 4AA(5A) GA86;[54]

(iii) the need to act in a manner best calculated to promote efficiency and economy (under section 4AA(5)(a) GA86),[55] by failing to allow recovery of efficiently incurred costs without proper justification and creating

[50] That, in the absence of competition, regulated networks should be able to deliver high rates of improvement in productivity compared with the wider economy.
[51] NGN NoA, paragraph 43(b).SGN NoA, paragraph 473(iv)(a), WWU NoA, paragraph 4.17(c).
[52] SGN NoA paragraph 473(iv)(a).
[53] WWU NoA, paragraph 4.24(c).
[54] NGN NoA, paragraph 43(b)(ii). WWU NoA, paragraph 4.17(c).
[55] NGN NoA, paragraph 43(b)(ii). SGN NoA, paragraph 473(iv)(a).

perverse incentives on networks to aim down when including OE assumptions in business plans;[56]

(iv) the need to secure a diverse and viable long-term supply of gas (under section 4AA(2) GA86),[57] by failing to allow the recovery of efficiently incurred costs without proper justification and in creating perverse incentives on GDNs to aim down when preparing business plans.[58]

(b) Make licence modifications that failed to achieve the **stated effect** in that:

(i) the OE figure failed to achieve its stated effect of setting an efficiency parameter to reflect the productivity improvements that GEMA considers even the most efficient company can achieve.[59]

(c) Make **errors of fact** in that:

(i) there is no evidence that regulated network companies will outperform wider economy productivity growth and/or that GEMA did not have regard to, or gave insufficient weight to, evidence provided to it prior to its FD that they would not outperform wider economic growth;[60]

(ii) GEMA's assessment is not supported by economic theory that, in the absence of competition, regulated network companies should be able to deliver high rates of improvement in productivity compared with the wider economy.[61]

(d) Make a decision that **was wrong in law** because GEMA's assessment was not supported by economic evidence and/or economic theory such that it acted irrationally in that:

(i) there is no evidence that regulated network companies will outperform wider economy productivity growth and/or that GEMA did not have regard to, or gave insufficient weight to, evidence provided to it prior to its FD that they would not outperform wider economic growth;[62]

(ii) GEMA's assessment is not supported by economic theory that, in the absence of competition, regulated network companies should be able to

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[56] SGN NoA, paragraph 473(iv)(a).
[57] NGN NoA, paragraph 43(b)(iii).
[58] SGN NoA, paragraph 473(iv)(a).
[59] NGN NoA, paragraphs 43(c) and 180. NGN cites GEMA's FD Overview, paragraph 8.20 as describing the stated effect.
[60] NGN NoA, paragraphs 172-179 and 180. SGN NoA, paragraphs 406-408 and 473((ii). Cadent NoA, paragraphs 95 to 97 and 100(c). WWU NoA, paragraphs 4.17(a), 4.24(a), 4.41(a) and (b) and 4.42(a), (b) and (c).
[61] NGN NoA, paragraphs 172-179 and 180. SGN NoA, paragraphs 406-408 and 473(ii). Cadent NoA, paragraphs 95 to 97 and 100(c). WWU NoA, paragraphs 4.17(a), 4.24(a), 4.42(a), (b) and (c).
[62] NGN NoA, paragraphs 172.-179 and 180. SGN NoA, paragraph 428 and 473(1)(a) and (b). Cadent NoA, paragraph95. WWU NoA, paragraphs 4.17(a) and (b), 4.24(a) and (b), and 4.41(a) and (b) and 4.42(b)

deliver higher rates of improvement in productivity compared with the wider economy.[63]

**Our analytical approach**

5.56 The Appellants' arguments that GEMA erred in respect of the Insulation Matter, on the statutory grounds described above, fall into the following areas:

(a) certainty afforded by the RIIO framework;

(b) countervailing factors;

(c) quantification of insulation; and

(d) regulatory precedent.

5.57 The Appellants also submitted arguments related to whether GEMA's position was that GDNs are fully or partially insulated from the wider economic slowdown in productivity.

5.58 As explained earlier, we start our assessment with considering these analytical issues before returning to the statutory questions for determination. Our assessment of GEMA's approach to insulation is in two parts. The first part, in this section of our decision, concerns whether GEMA was wrong to consider the insulation effect in principle and in setting the plausible range within which it set the OE challenge. The second part, set out later in this decision in relation to the Qualitative Matter, concerns the way in which GEMA considered the insulation effect as a qualitative factor when judging where to set the OE challenge within that range.

5.59 The conclusions we go on to reach, for the reasons we set out, are as follows ((a) and (b) of which are in this section, whereas (c) is set out later in relation to the Qualitative Matter):

(a) GEMA was not wrong to consider the insulation effect in principle; and

(b) that effect was relevant in considering the bottom end of the plausible range within which to set the OE challenge, and GEMA did not err in its consideration of the insulation effect in that context; but

(c) whilst the insulation effect was also relevant in principle in setting the specific point at which it set the OE challenge, GEMA did not take account, when making its judgement about that point, of relevant considerations relating to:

[63] NGN NoA, paragraphs 172-179 and 180. SGN NoA, paragraph 428 and 473(1)(a) and (b). Cadent NoA, paragraph 96. WWU NoA, paragraphs 4.17(a) and (b), 4.24(a) and (b) and 4.42(a), (b) and (c).

(i) the extent and implications of GEMA's use of any insulation effect at the stages of (a) setting the plausible range of the OE challenge; and (b) the specific point of the OE challenge within that range; and

(ii) the likelihood and extent of any insulation effect occurring in the period of the RIIO-3 price control.

**Was GEMA wrong in its view that regulated network companies are insulated from the wider economic slowdown in productivity and can be expected to deliver higher rates of improvements in productivity in the RIIO-3 period compared with the Comparator Sectors?**

*Appellants' submissions*

**Certainty afforded by the RIIO framework**

5.60 Three of the Appellants, NGN, SGN and Cadent, submitted that GEMA's assumption that better productivity outcomes can be expected by virtue of being in a regulated rather than competitive sector is inconsistent with standard economic theory that competitive markets drive the best long-term consumer outcomes (ie productively efficient outcomes).[64]

5.61 Three of the Appellants, NGN, SGN and WWU, submitted that GEMA was wrong because:

(a) the link between revenue predictability and enhanced TFP growth is vague, and GEMA has not further elaborated how or why this link exists. There is no reason to conclude that the RIIO framework can be expected to result in TFP growth greater than the wider economy. This contradicts the view that competition drives the best productivity outcomes.[65]

(b) GEMA has not sought to provide any evidence that regulated network companies have historically delivered productivity improvements at levels above the average of the wider economy or relevant sector benchmarks. Furthermore, the same three Appellants submitted that GEMA acknowledges the challenges in measuring historical efficiency.[66]

5.62 The Appellants submitted that GEMA was wrong in assuming that regulated network companies are insulated from wider productivity slowdowns in the UK economy because the underlying drivers of the productivity slowdown since 2008 (such as infrastructure quality, quality of human capital stock, supply chain

[64] SGN NoA paragraph 406. Cadent NoA paragraph 95, 95(c) and 99(e). NGN NoA paragraph 174(b).
[65] NGN NoA paragraph 174(a). SGN NoA paragraphs 408-409. WWU NoA paragraphs 5.8-5.9 and paragraphs 5.51-5.53.
[66] NGN NoA paragraph 174(b), SGN NoA paragraph 406. WWU NoA paragraphs 4.3, 4.6 and 4.11-4.13.

constraints, legislative and administrative burdens, planning consent and delays, and availability of public and private investment) will not be mitigated by the presence of regulation.[67]

5.63 In their closing statement to the hearing, the Appellants referred to a question from the CMA about whether aspects of the RIIO framework, specifically the inclusion of known costs in totex forecasts; and changes to totex allowances in-period via real price effects (**RPEs**) or re-openers afforded GDNs some protection from productivity headwinds due to inelastic demand.[68] These features, they submitted, do not create incremental TFP growth opportunities beyond what competitive sector benchmarks already capture. The regulatory framework simply allows GDNs to recover justified and efficient costs. The Appellants further submitted that the position is analogous to competitive markets where firms must pass through common input cost increases over time.[69]

5.64 The Appellants submitted that the role of re-openers is to fund new requirements and that they are limited in scope by the licence and subject to a minimum expenditure threshold. The Appellants said that re-openers will only fund incremental totex that is evidenced and justified and that re-openers seek to mimic the outcomes of competitive markets, in which firms delivering higher outputs will typically charge more.[70]

5.65 The Appellants submitted that the role of RPEs is to adjust allowances in-period for input price inflation, just as firms in competitive markets can adjust prices when their input prices change. RPEs, which can move up or down, do not increase the scope for regulated companies to make productivity gains. The Appellants further submitted that RPEs help to maintain alignment between totex allowances and prevailing wage and materials rates, whereas productivity improvement reduces the quantities of inputs deployed relative to the outputs produced. They submitted that RPE indexation neither reduces the quantity of inputs used (labour, materials, etc.) nor increases output and that reopeners and RPEs aim to protect both GDNs and consumers from volatility, not to enhance productivity.[71]

5.66 The Appellants also stated that the known effects of both GDNs' productivity gains and the headwinds they face are included in their business plans. The Appellants added that setting OE above those benchmarks double counts the productivity

[67] Cadent NoA paragraph 95(a), 96; NGN NoA paragraph 175-178 ; SGN NoA paragraph 405-429; WWU NoA paragraph 4.25-4.32
[68] The Appellants' Closing Statement, June 2026, paragraph 15.
[69] The Appellants' Closing Statement, June 2026, paragraph 15.
[70] The Appellants' Closing Statement, June 2026, paragraph 16.
[71] The Appellants' Joint Reply to GEMA's Response, dated 8 May 2026, paragraph 33(a). The Appellants' Closing Statement, June 2026, paragraph 16.

improvement observed in competitive sectors which goes in the opposite direction to GEMA's partial insulation hypothesis.[72]

5.67 In their joint response to our PD, the Appellants contended that the PD appeared to misunderstand the nature of productivity growth which relates to more efficient utilisation of labour, capital and intermediate inputs (eg materials and services). The Appellants submitted that productivity growth is not linked to the pass-through or otherwise of input price increases/shocks. It is fundamentally about quantities, rather than values and/or prices.[73] The Appellants submitted that productivity growth – as measured in EU KLEMS and as widely recognised in the academic literature and expert commentary – is fundamentally about the quantities of inputs and outputs. The Appellants added that productivity growth measures the rate at which a firm, sector or economy is able over time to produce more quantity of output from a given quantity of inputs – or equivalently, the same quantity of output using fewer inputs.[74]

5.68 The Appellants stated that there is no sound basis to conclude that GDNs can pass through 'more' costs and do so more quickly than firms in Comparator Sectors due to 'cost certainty' mechanisms such as RPEs. This, the Appellants submitted, is contrary to standard economic theory and raises logical inconsistences with our other provisional findings.[75] The Appellants also stated that RPEs do not enable GDNs to pass cost increases through to customers immediately and can take up to two years to be reflected in allowed revenue.[76]

5.69 The Appellants also stated that demand inelasticity and revenue certainty do not allow GDNs to deliver higher productivity growth compared to firms in competitive sectors. To the extent that market frictions (eg a firm's inability to immediately reduce its inputs or exit the market in light of a shock) could cause some distortion to measured productivity, the effect would only be fleeting compared to the many years over which EU KLEMS analysis is conducted, or the seven years over which the OE challenge is applied.[77]

5.70 The Appellants additionally submitted that our PD drew an arbitrary and conceptually flawed distinction between the 'long-term' (where GDNs are not insulated) and the 'short-term' (where they are partially so).[78]

5.71 They also said that even if our PD's claimed relationship between RPEs and productivity growth were not conceptually flawed, our PD overstates the relative efficacy of 'cost certainty' measures in the RIIO-3 framework compared to the

[72] The Appellants' Closing Statement, June 2026, paragraph 17.
[73] Appellants' Joint Response to RIIO-3 OE PD, paragraph 53(a).
[74] Appellants' Joint Response to RIIO-3 OE PD, paragraph 61.
[75] Appellants' Joint Response to RIIO-3 OE PD, paragraph 53(b).
[76] Appellants' Joint Response to RIIO-3 OE PD, paragraph 96(a).
[77] Appellants' Joint Response to RIIO-3 OE PD, paragraph 53(c)
[78] Appellants' Joint Response to RIIO-3 OE PD, paragraph 53(d).

Comparator Sectors. They added that no empirical support was provided for the PD's conclusion that RPE indexation enables the GDNs to pass through 'more' costs and to do so 'more quickly' than competitive sectors over such a 'short-term' period, with the Appellants suggesting that our PD overstated the efficacy of RPEs in passing through increases in input costs to customers.[79]

**Countervailing factors**

5.72 Two of the Appellants, Cadent and WWU, submitted that the complex regulatory environment in which they operate constrains their ability to achieve scope efficiencies as GDNs are less able to choose whether to prioritise activities where efficiency and/or profitability can be driven over ones where it cannot.[80]

5.73 The Appellants also submitted that the maintenance of safety across their networks is a countervailing qualitative factor to insulation which GEMA should have considered.[81]

5.74 In their joint response to our PD, the Appellants submitted that the PD did not engage with relevant countervailing evidence that they submitted, including detailed evidence that GDNs are exposed to the headwinds affecting UK productivity growth.[82]

5.75 The Appellants made a number of submissions about '…relevant countervailing factors that should be considered in any assessment of hypothetical insulation.'[83] Those included that:

(a) GDNs' core activities (mains laying, connections, excavation, and reinstatement) are construction activities and these activities are constrained by the same productivity drivers as apply in the construction sector;

(b) GDNs are exposed to shortages in skilled labour and specialist contractors;

(c) there is policy uncertainty in the long-term future role of gas;

(d) there is an impact of long-term underinvestment in infrastructure by UK firms; and

(e) GDNs are subject to regulatory burdens, including regulatory reporting and assurance burden materially in excess of that faced by comparable UK firms.

[79] Appellants' Joint Response to RIIO-3 OE PD, paragraph 53(e).
[80] Cadent NoA paragraph 95(b); WWU NoA paragraph 4.27(e), 4.33.
[81] WS1 of Dean Pearson, paragraph 27, WS1 of Richard Court, paragraph 71(a), WS1 of Carly Evans, paragraph 4.19, WS1 of David Handley, paragraph 70.
[82] Appellants' Joint Response to RIIO-3 OE PD, paragraphs 53(i) and 123-125.
[83] Appellants' Joint Response to RIIO-3 OE PD, paragraphs 53(i) and 123-125.

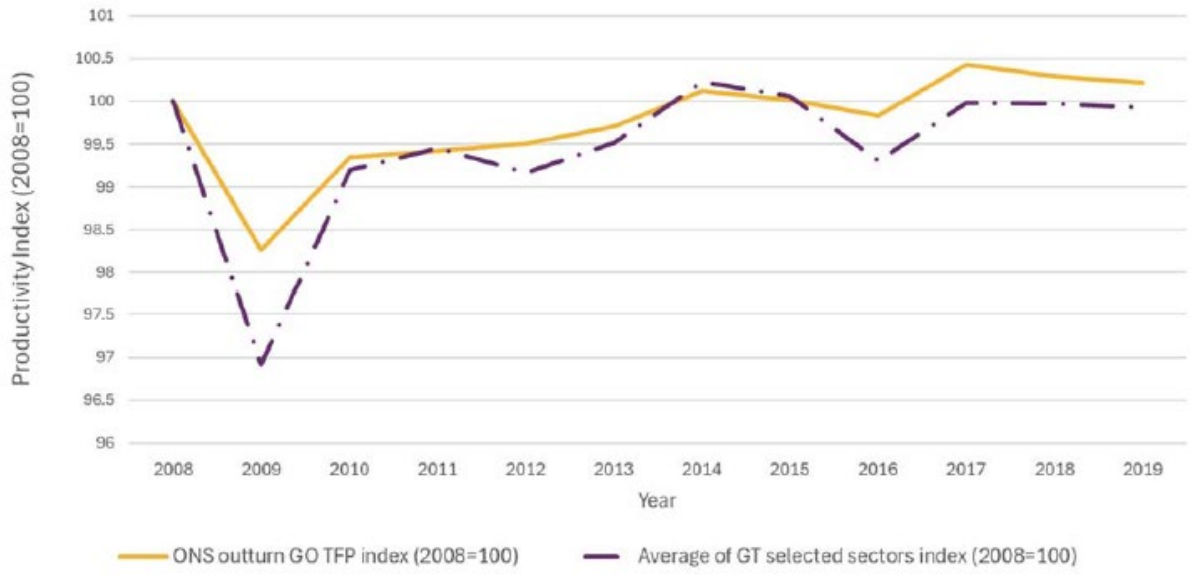
5.76 Three of the Appellants also submitted that the end of the 2030 mains replacement programme should have been considered by GEMA as a qualitative factor.[84]

### Quantification of insulation

5.77 The Appellants also stated that GEMA had performed no comparative analysis of historical network productivity vs economy-wide or sector benchmarks, nor did GEMA quantify the alleged 'insulation effect' on productivity.[85]

5.78 NERA, Cadent's adviser, submitted analysis comparing historical TFP of Grant Thornton's Comparator Sectors to ONS outturn TFP from 2008 to 2019 (shown in Figure 1.2). NERA concluded that productivity changes from year-to-year in Grant Thornton's Comparator Sectors have been highly correlated with productivity improvement in the wider economy, as measured by the ONS, since the GFC.[86]

**Figure 1.2: NERA analysis comparing Grant Thornton's Comparator Sectors to ONS Outturn TFP (2008-2019)**




*Source: Nera (2026), Expert Report on GEMA's Approach to Ongoing Efficiency at RIIO-GD3, Figure 3.5.*

5.79 NERA also performed analysis comparing trends in historical productivity between Grant Thornton's Comparator Sectors and electricity and gas sectors (shown in Figure 1.3). NERA added that historical productivity growth in the electricity and gas sectors shows evidence of systematic underperformance relative to Grant Thornton's Comparator Sectors since the GFC. NERA concluded that historical evidence suggested that the productivity growth of energy and utility companies is

[84] Transcript of the hearing for Ongoing Efficiency session on 17 June 2026, p125 lines 20-25, WS1 of Dean Pearson, paragraph 23, WS1 of David Handley, paragraph 74.
[85] WWU NoA, paragraph 4.21(a) and (b); NGN NoA, paragraph 174; SGN NoA, paragraph 408; Cadent NoA, paragraph 97
[86] NERA (2026), Expert Report on GEMA's Approach to Ongoing Efficiency at RIIO-GD3, paragraph 90.

in fact likely to have been lower than that seen in comparable, competitive industries.[87]

**Figure 1.3: NERA analysis comparing electricity and gas historical TFP to Grant Thornton's Comparator Sectors (2008-2019)**




*Source: NERA (2026), Expert Report on GEMA's Approach to Ongoing Efficiency at RIIO-GD3, Figure 3.6.*

5.80 The Appellants also submitted that the PD's conclusion inappropriately shifted the burden for undertaking empirical assessment from GEMA to the Appellants. The Appellants submitted that the principles of regulatory best practice, and public law requirements of rationality, dictate that GEMA should not set important regulatory parameters without the necessary supporting evidence.

5.81 In response to our PD, the Appellants also submitted new empirical evidence to support their insulation arguments. This is discussed in more detail in our assessment section below.

### Regulatory precedent

5.82 The Appellants submitted that in relation to demand inelasticity, the CMA found in the RIIO-2 appeals that 'this does not necessarily imply that the network should be

[87] NERA (2026), Expert Report on GEMA's Approach to Ongoing Efficiency at RIIO-GD3, paragraph 93.

able to achieve higher productivity growth rates'.[88] Overall, the Appellants submitted, GEMA's insulation hypothesis cannot plausibly bridge the gap from a near-zero productivity assessment to the setting of a 1% OE challenge.[89]

5.83 In response to our PD, the Appellants submitted that the provisional conclusions on insulation were incompatible with the position that the CMA reached in the RIIO-GD2 appeal and, most recently, in the PR24 redeterminations. The Appellants submitted that there is no objective basis for this divergence.[90]

5.84 The Appellants submitted that in the RIIO-2 appeal, the CMA had rightfully recognised that there is no clear link between protection from macroeconomic fluctuations and productivity growth. They further submitted that there is no objective basis for the difference in the CMA's view between RIIO-2 and RIIO-3 and that the main element of the RIIO framework that the PD considers give rise to the insulation effect (eg RPEs) has not changed.[91]

5.85 As to the PR24 redetermination, the Appellants submitted that the CMA considered and rejected a similar insulation hypothesis in that context. They acknowledged that the CMA's finding at PR24 was in relation to a redetermination rather than an appeal framework but submitted that that this does not explain why the CMA's finding should carry no weight in RIIO-3. The Appellants submitted that gas and water networks have regulatory frameworks which share many of the features the CMA and GEMA consider provide insulation – such as revenue predictability, inelastic demand and uncertainty mechanisms. The Appellants submitted that neither the CMA nor GEMA has provided any explanation for why the impact of these would materially differ for GDNs.[92]

### Whether GDNs are fully or partially insulated

5.86 The Appellants submitted that GEMA has conceded that any insulation would only be partial and that regulated sectors should not outperform long-term productivity trends in competitive sectors in the wider economy, with any insulation only relevant to 'short-term fluctuations'. They submitted that the post-GFC slowdown reflects deep-rooted structural factors, not short-term distortions.[93]

5.87 The Appellants further submitted that GEMA reaffirmed that the insulation argument applied only to the post GFC period, which they consider is fatal to GEMA's case because GEMA's own advisers estimated benchmark post-GFC

[88] The Appellants referenced this quote as coming from the RIIO-GD2 ELM appeals, FD Volume 2, paragraph 7.440. See also the Appellants' Joint Reply to GEMA's Response, dated 8 May 2026, paragraph 33(b).
[89] The Appellants' Closing Statement, June 2026, paragraph 16.
[90] Appellants' Joint Response to RIIO-3 OE PD, paragraph 53(h).
[91] Appellants' Joint Response to RIIO-3 OE PD, paragraphs 120 to 121.
[92] Appellants' Joint Response to RIIO-3 OE PD, paragraph 122.
[93] The Appellants' Closing Statement, June 2026, paragraph 14. The Appellants' Joint Reply to GEMA's Response, dated 8 May 2026, paragraphs 27-28.

TFP growth in selected Comparator Sectors to be 0.1%. The Appellants re-iterated that GEMA's unquantified, unevidenced and speculative insulation adjustment cannot plausibly bridge the gap from a near-zero productivity assessment to the setting of a 1% OE challenge.[94]

5.88 The Appellants also submitted that GEMA seeks to confine the relevance of its insulation assumption to a factor in its qualitative assessment. However, the Appellants further contended, it is clear that this assumption holds a central role in GEMA's final decision, both in its reasoning as to the appropriateness of a 1% OE challenge and in relation to its use of external forecast evidence. The Appellants stated that it is wrong for GEMA to suggest that this insulation assumption is not essential to its case. The Appellants said that to the extent that GEMA is moving away from this assumption (that GDNs can outperform the wider economy), we should still consider whether GEMA has sufficient grounds for setting the OE challenge at a level that is manifestly out of line with productivity growth in relevant benchmarks.[95]

5.89 In response to our PD, the Appellants submitted that the PD does not engage meaningfully with the size of the benefit that any 'partial' insulation confers. They submitted that neither GEMA nor the CMA has made any attempt to assess the magnitude of the alleged insulation effect, despite insulation forming a critical part of the PD's reasoning.[96]

5.90 The Appellants submitted that their case is that GEMA erred in failing to substantiate the scale of insulation and whether it was capable of supporting GEMA's overall OE parameter (having referred to this at the hearing).[97] Even if GEMA's hypothesis were valid from a theoretical perspective (which the Appellants have submitted is not accepted), the question of whether GEMA is wrong in relation to insulation crucially also depends on the size of any 'partial' insulation and whether it justifies the way in which it was used by GEMA in arriving at 1% OE. In failing to address this point, the Appellants argued, our PD perpetuated this crucial failing in GEMA's approach.[98]

*GEMA's submissions*

5.91 GEMA submitted that the insulation hypothesis is one of a number of qualitative considerations which it assessed in the round.[99]

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[94] The Appellants' Closing Statement, June 2026, paragraph 13.
[95] The Appellants' Joint Reply to GEMA's Response, dated 8 May 2026, paragraph 31.
[96] Appellants' Joint Response to RIIO-3 OE PD, paragraph 53(g).
[97] During the OE hearing, the Appellants submitted that GEMA did not have the evidence to support its view on insulation, having stated in its FD that the Appellants were fully insulated, with GEMA subsequently amending its position to there being partial insulation. Transcript of the hearing for Ongoing Efficiency session on 17 June 2026, p10 lines 18-22.
[98] Appellants' Joint Response to RIIO-3 OE PD, paragraph 114
[99] GEMA Response to Appellants' NoAs, p31, paragraph 66.

### Certainty afforded by the RIIO framework

5.92 GEMA submitted that it was entitled to take the view that the RIIO-3 framework provides stability which, in the short-term context of instability and volatility in the wider economy, provided certainty and protection for GDNs, notwithstanding the long-term expectation that non-regulated sectors would outperform regulated sectors.[100]

5.93 In the hearing, GEMA explained the theoretical reasoning for its approach to insulation. It said that the gross output of regulated energy networks is not exposed to all the drivers of lower, wider economy productivity in the same way as firms operating in competitive markets.[101]

(a) KLEMS data is about the productivity of the wider economy. KLEMS data and the other measures of wider economy productivity show sluggish productivity since 2008, and the Appellants have suggested it should be given more weight in GEMA's decision.

(b) KLEMS productivity data is the residual in a calculation that compares changing gross outputs to a series of inputs, K, L, E, M, and S. If gross output increases relative to inputs, there is a positive residual, and productivity is improving. If gross output declines relative to the inputs, then the residual is negative, and productivity is declining.

(c) Since 2008, this residual for Grant Thornton's Comparator Sectors has been close to zero, implying that these sectors produce almost no more output now than 18 years ago for the same value of inputs.

(d) This is due to specific factors (GFC, Brexit, Covid, Russia-Ukraine war) and wider factors around declining quality of inputs (declining infrastructure, skill shortages).

(e) The specific factors can have two impacts on productivity (1) reduction in demand or (2) an increase in costs. These factors adversely affect gross output relative to inputs for the wider economy as companies are not able to fully pass higher costs on to customers without reducing demand and therefore gross output.

(f) However, it is not the same for GDNs: if demand goes down for GDNs, because they have a revenue cap, they can put up their prices and their gross output is unchanged. Effectively, GDNs do not see a reduction in their productivity in the same way as the wider economy does.

[100] GEMA Response to Appellants' NoAs, p34, paragraph 74.
[101] Transcript of the hearing for Ongoing Efficiency session on 17 June 2026, p79, line 10 to page 82 line 15.

(g) Similarly, if GDNs' costs go up then there are mechanisms (eg RPEs indexation) which means that many of the factors that drive up costs and drive down productivity for the wider economy, do not drive down productivity for GDNs because they are allowed to increase prices to reflect higher costs.

5.94 GEMA submitted that the Appellants mischaracterise GEMA's position by suggesting it believed that GDNs were 'insulated' from all challenges in the wider economy. GEMA was of the view that GDNs were partially protected through the regulatory regime.[102]

5.95 GEMA stated that it was wrong for the Appellants to suggest that it had applied an insulation hypothesis which treated the regulated energy sector as a thing apart from the general economy. GEMA contended that it was appropriate to consider other elements of the RIIO-3 price control and broader regulatory environment that reduced GDNs' exposure to some of the drivers of low wider economy productivity when considering how to interpret that evidence of the wider economy, as well as reasons why GDNs might outperform the Comparator Sectors. GEMA submitted that there were no grounds for finding its approach to be irrational or otherwise wrong in law.[103]

5.96 GEMA said that it was entitled to take the view that the RIIO-3 framework provides stability, which it stated, in the short-term context of instability and volatility in the wider economy, provided certainty and protection for GDNs, notwithstanding the long-term expectation that non-regulated sectors would outperform regulated sectors.[104]

5.97 GEMA stated that demand for gas distribution services is largely inelastic, with changes in wider economic conditions having little or no effect on the volume of services GDNs are required to provide or on the revenues they recover under the RIIO framework. GEMA added that as RIIO-3 is a revenue control, GDNs are also protected against volume decline.[105]

5.98 GEMA submitted that the RIIO framework substantially insulates GDNs from underinvestment in their own sector. GEMA added that this is because efficient capex/repex/opex is funded ex-ante, investors receive a regulated return, and financeability is assessed as part of the price control.[106]

5.99 GEMA stated that GDNs occupy a comparatively advantaged position relative to competitive firms as they benefit from mechanisms such as RPEs, unit-cost adjustments and financial adjustments, as well as operating without direct

[102] GEMA Response to Appellants' NoAs p30, paragraph 63.1.
[103] GEMA Response to Appellants' NoAs p37, paragraphs 85 to 86.
[104] GEMA response to Appellants' NoAs, p34, paragraph 74.
[105] Steven McMahon, WS2 (April 2026), paragraph 186.
[106] Steven McMahon, WS2 (April 2026), paragraph 198.

customer-driven competitive pressure. GEMA added that this means that GDNs benefit from a set of protections within the regulatory framework.[107]

5.100 In response to our PD, GEMA stated that it welcomed our view on RPEs. GEMA added that the question is not whether RPEs improve productivity itself, but whether regulated network companies are exposed to the same consequences of economy-wide shocks as firms operating in competitive markets. GEMA concluded that the answer to this question was no.[108]

### Countervailing factors

5.101 GEMA stated that it did not dispute that there are some wider economic factors that are outside of the Appellants' control and that affect the Appellants in a similar way to other businesses, for example poor quality transport links. GEMA, however, added that it anticipated there being scope for network companies to achieve efficiencies on matters within their control, as a result of the level of investment and the expected management focus on securing such efficiencies for the benefit of consumers.[109]

5.102 GEMA accepted that price control processes, licence obligations and compliance requirements consume management time. However, GEMA submitted that this did not undermine the distinct point that the RIIO framework also removes some of the burdens that would be placed on management in a competitive market.[110]

5.103 GEMA submitted that the Appellants overstated GEMA's original point. GEMA added that it did not suggest that RIIO removes management burdens but that RIIO gives management relatively greater scope to focus on cost efficiency than would be the case in a competitive market, because GDNs do not face customer churn, market-share risk, the need to adopt pricing strategies, or the need to defend revenues through marketing and other commercial activity.[111]

5.104 GEMA also stated that the correct comparison is not between a GDN and an unconstrained firm free of reporting obligations, but between a GDN operating under a stable ex-ante regulatory settlement and a competitive firm the management of which must also devote substantial time to demand risk, customer acquisition, margin protection and financing risk. GEMA added that, on that comparison, it considered it appropriate to conclude that, although RIIO imposes regulatory burdens, it also removes a distinct set of commercial distractions and

[107] Steven McMahon, WS2 (April 2026), paragraph 199.
[108] GEMA's Response to CMA RIIO-3 OE PD, paragraph 29.
[109] Steven McMahon, WS2 (April 2026), paragraph 189.
[110] GEMA response to Appellants' NoAs p35, paragraph 79.
[111] Steven McMahon, WS2 (April 2026), paragraph 191.

thereby permits a greater relative focus on cost control and operational efficiency burdens.[112]

5.105 GEMA did not make any specific submissions about the end of the 2030 mains replacement programme, although it submitted at the hearing that it will consider if additional totex allowances for repex are required in the next RIIO-GD4 price control period, to reflect the end of the repex programme.[113]

### Quantification of insulation

5.106 GEMA acknowledged that it did not seek to measure empirically the extent to which it could be said that GDNs were protected from challenges that have caused wider economic productivity to be low. It defended its position, however, stating that would be an unrealistic exercise.[114]

5.107 GEMA submitted that recent data including year 4 of the RIIO-2 price control highlights an overspend by 1.8% on average, with two GDNs expecting to underspend across the 5 years. GEMA added that overall, this suggested that, while acknowledging under and overspend can be driven by different factors, there was not systematic under performance (ie overspend) across energy networks, which could have indicated that GEMA's RIIO-2 OE target of 1% was set too high.[115]

5.108 With regard to NERA's analysis of historical productivity, Grant Thornton (GEMA's economic adviser) submitted that:

(a) as a matter of principle, in forming a view on OE, it is inappropriate to consider benchmarks from the sector itself. This is because energy networks are natural monopolies and considering historic performance in this manner risks perpetuating underperformance and ignoring potential future productivity gains;[116] and

(b) the sectors NERA used in its analysis are much narrower in scope compared to Grant Thornton's selection of Comparator Sectors and, while the activities of some of the sectors align with those of network companies, some activities (such as generation of electric power and the provision of steam, hot water, and air-conditioning through permanent infrastructure) do not align with the activities of those companies.[117]

[112] Steven McMahon, WS2 (April 2026), paragraph 192.
[113] Transcript of the hearing for Ongoing Efficiency session on 17 June 2026, p126, lines 13 to 18.
[114] GEMA Response to Appellants' NoAs p33, paragraph 71.
[115] Steven McMahon, WS2 (April 2026), paragraph 119.
[116] Grant Thornton (April 2026), Report on Ongoing Efficiency issues raised by RIIO-3 Appeals, paragraph 3.5.
[117] Grant Thornton (April 2026), Report on Ongoing Efficiency issues raised by RIIO-3 Appeals, paragraph 3.10.

### Regulatory precedent

5.109 GEMA noted in its Response that in the RIIO-2 appeals the CMA accepted that 'energy networks are less exposed to macroeconomic fluctuations' and that the 'lack of competitors for each network may imply that management does not have to engage in some common business tasks [which] could lead to lower costs'.[118]

*Intervener's submissions*

5.110 Citizens Advice submitted that while estimating productivity is challenging, it is likely that economy and sector wide productivity estimates based on non-regulated companies situated within competitive markets will be too low for regulated network companies, which is contrary to the Appellants' claims.[119]

5.111 Citizens Advice also submitted that regulated network companies are likely to out-perform the productivity of competitive companies since every network company within a regulated sector can benefit from a single company's productivity initiative due to there being mechanisms to share best practice that cannot exist in a competitive market. Citizens Advice further submitted that the collaborative nature of the regulated sector means network companies' expected efficiency improvements must sit above competitive benchmarks.[120]

5.112 Citizen's Advice added that the uncertainty within the productivity evidence makes it vital that these estimates are balanced with the real-world context of the regulated monopoly network sector.[121]

*CMA assessment*

5.113 GEMA's decision stated that the RIIO price control framework insulates network companies from the wider economic productivity slowdown.[122] GEMA considered the insulation effect in its assessment of the EU KLEMS quantitative evidence (ie in setting its plausible range of 0.7-1.3%) and also as a qualitative factor when selecting the 1% OE challenge from within that range.[123]

5.114 GEMA submitted in its closing statement to the hearing that its insulation hypothesis was correct and confirmed that it had used it in two stages.[124]

(a) First, at stage 1, GEMA took the view that the bottom half of the Grant Thornton range, especially the lower bound and the figures adjacent to it,

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[118] Steven McMahon, WS2 (April 2026), paragraph 180.
[119] Citizens Advice application for permission to intervene April 2026, paragraph 2.
[120] Citizens Advice application for permission to intervene April 2026, paragraphs 26, 27.
[121] Citizens Advice application for permission to intervene April 2026, paragraph 21.
[122] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraphs 8.50 and 8.51.
[123] GEMA Response to Appellants' NoAs, p31-32, paragraphs 66-68.
[124] GEMA's Closing Statement, June 2026, paragraph 8, footnote 7.

were divorced from what could be expected of the energy networks. It considered that the top half of the range was consistent with what networks could realistically achieve, not least given NGET's proposal, which itself gave limited if any consideration to qualitative factors (and none to any insulation effect). Thus, at stage 1, GEMA had regard to insulation only as part of satisfying itself that figures lower than 0.7 were unrealistic for energy networks. (See paragraph 5.118).

(b) Second, at stage 2, GEMA then chose a point estimate from the narrower range considering all the relevant factors, which included the networks' partial insulation from the wider economy post-GFC slowdown.[125]

5.115 GEMA explained during the hearing that, when it referred to network companies' insulation compared to the productivity of the wider economy, it considered this in the context of interpreting the EU KLEMS data.[126] Accordingly, we have considered the Appellants' insulation arguments in the context of a comparison between the network companies and the average of the Comparator Sectors (used by Grant Thornton in its EU KLEMS analysis).

5.116 As to the period in which it considered that the networks benefit from insulation, we note that GEMA's decision alludes to the period covered by the RIIO-3 price control (and therefore to the expected insulation from the post-GFC productivity slowdown in the RIIO-3 period). It said:

> It is important to consider the specific context in which regulated energy network companies operate when setting an appropriate forward-looking OE target **for RIIO-3.** These companies have greater potential to outperform the wider economy because they operate within **the RIIO price control frameworks, which we consider insulates them from the wider economic productivity slowdown** due to higher certainty over revenues and returns than for companies operating in competitive sectors.[127] (emphasis added)

5.117 The position in the previous paragraph is consistent with the Parties' submissions above (see paragraph 5.60 for the Appellants' and paragraph 5.92 for GEMA's) that, in general, regulated network companies would not be expected to have higher levels of productivity than the average of the Comparator Sectors. This is consistent with economic theory that, overall, competitive firms would have stronger incentives for dynamic efficiency and regulated firms would not be expected to deliver greater productivity improvements.

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[125] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraphs 8.23 (fifth bullet).
[126] Transcript of the hearing for Ongoing Efficiency session on 17 June 2026, p79, lines 10 to 18.
[127] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.50.

5.118 In this section we consider whether GEMA erred in its reasoning with respect to its insulation hypothesis, and in how it used insulation in setting its plausible range (stage 1 above). We consider GEMA's reliance on the insulation effect in its assessment of the qualitative factors as part of the Qualitative Matter later in this decision.

5.119 Our focus is on whether GEMA was wrong in relation to its assessment that, owing to an insulation effect, the GDNs could, all else equal, be expected to deliver greater productivity gains over the period in which the RIIO-3 OE challenge applies (ie 2024-2031) than the average of the Comparator Sectors have delivered post-GFC. Throughout this section, we refer to insulation over the RIIO-3 period, meaning 2024-2031.

5.120 The Appellants' arguments that GEMA erred in respect of insulation over the RIIO-3 period can be broadly summarised into the following areas:

(a) Certainty afforded by the RIIO framework.

(b) Countervailing factors.

(c) Quantification of insulation.

(d) Regulatory precedent.

5.121 We address each of those matters and others that appear to us relevant, and end this section by setting out our conclusions on GEMA's reliance on an insulation effect in setting the OE challenge.

**Certainty afforded by the RIIO framework**

5.122 In response to our PD, the Appellants contended that we had fundamentally misunderstood what productivity is. They provided simple examples to illustrate this. We do not agree with the Appellants.

5.123 While productivity is fundamentally about how much output is produced for a given level of inputs, it is important to consider how the available productivity statistics are computed in practice. In growth accounting, output is measured using either the GO or VA measures, which take into account both prices of goods and services as well as their quantities. Similarly, inputs reflect their real marginal cost (eg wages for labour).[128]

[128] For example, see page 14 of Bontadini et al EUKLEMS & INTANProd: industry productivity accounts with intangibles (February 2023) which states 'First, we compute the volume of the services provided by each type of asset (ie, its productive capital stock) and the corresponding asset price (ie, its user cost); then, the second step entails the calculation of an aggregate measure of the productive contribution of the different types of assets (ie, of the aggregate flow of capital services).'

5.124 EU KLEMS GO TFP measures the difference between gross output of a sector after subtracting the value of the inputs used. If gross output increases relative to inputs, there is a positive TFP residual. If gross output decreases relative to input, there is a negative TFP residual. All else equal, economic shocks tend to reduce output and subsequently productivity.

5.125 In paragraphs 8.50 and 8.51 of the FD, GEMA stated that it treated the companies as insulated from the slowdown in productivity in the wider UK economy in the context of instability and volatility (post-GFC), due to their higher certainty of revenues and returns compared with companies operating in competitive sectors. GEMA treated such insulation, derived in part from the cost and revenue certainty measures in the regulatory framework, as a factor to which it should have regard when setting the OE challenge for the network companies.

5.126 Although they draw on wider points than just the relevant cost certainty measures, paragraphs 8.50 and 8.51 of the FD bear repeating in full in this context (with our emphasis showing that the insulation effect GEMA identified was relative, not absolute):

> It is important to consider the specific context in which regulated energy network companies operate when setting an appropriate forward-looking OE target ***for RIIO-3***. We maintain the view from our Draft Determinations that it is reasonable to set a stretching but achievable efficiency challenge for regulated energy networks. These companies have ***greater potential*** to outperform the wider economy because they operate within the RIIO price control frameworks, which we consider insulates them from the wider economic productivity slowdown due to ***higher certainty*** over revenues and returns than for companies operating in competitive sectors. This allows for greater management focus on cost savings and cost efficiency.
>
> Cadent, drawing on EI's initial report on OE, reiterated its position that regulated network companies are ***fully impacted by wider productivity slowdowns*** driven by a lack of public and private investment, infrastructure quality, quality of human capital stock and management quality. ***We do not accept this argument***. Our Final Determinations have enabled at least £28.7bn of investment across RIIO-3 and include the potential for around an additional £60bn through UMs. This represents record levels of investment into UK energy network infrastructure. Across RIIO-1 and RIIO-2, network companies have spent around £770m on operational and non-operational training, to enhance the quality of their human capital and help improve the efficiency of their workforces. In the ET sector, we have allowed the TOs' operational training asks in

full in our Final Determinations. We expect regulated network companies to drive high managerial standards, consistent with network companies being able to outperform the 'average' UK firm.

5.127 The rationale which GEMA explained at the hearing is consistent with what it said in its FD and with the way in which it treated the insulation effect. It indicates that GEMA treated the network companies as partially insulated from the wider economic slowdown in productivity on account of the relevant regulatory mechanisms, not wholly insulated to, nor immune from, that slowdown. We do not find that GEMA was wrong in principle to have done so.

5.128 During the appeal, GEMA explained its rationale further, stating that one of the reasons the post-GFC TFP numbers for the Comparator Sectors are relatively low is due to economic headwinds which do not necessarily impact regulated networks. GEMA cited the GFC, Brexit, Covid and the war in Ukraine as some of the factors which have had the effect of reducing demand or increasing input costs in the wider economy (see paragraph 5.93(d)).

5.129 We agree that assuming firms in the wider economy have a downward-sloping demand curve and an upward-sloping supply curve, both effects (ie a reduction in demand or an increase in costs) would tend to reduce output and reduce measured TFP. Even if competitive firms are generating productivity gains from the more efficient use of inputs, these productivity gains could be offset by reductions in output due to economic headwinds. Similarly, even if competitive firms pass on higher costs, this could happen in parallel to a reduction in output.

5.130 As far as the GDNs are concerned, GEMA's insulation hypothesis can be tested by considering the implications for the GDNs in the event of one of these shocks. The GDNs have relatively inelastic demand (with a revenue cap) and various mechanisms which allow them to pass on higher costs, either through ex ante allowances (where certain cost pressures are known) or in-period adjustments.

5.131 The features described in the previous paragraph can, in GEMA's view, mitigate the impact of economic headwinds on GDN productivity. Our view is that it was appropriate for GEMA to take this into account when considering how to interpret the historical and forward-looking productivity evidence from the wider economy and the average of the Comparator Sectors. There are two key bases for that view.

5.132 First, with regard to revenue certainty, we agree that the relatively inelastic demand, taken together with the design of the RIIO framework, is economically consistent with the view that the networks are relatively less exposed to macroeconomic fluctuations. This means that GDNs' output would be expected to be less affected than the average of the Comparator Sectors' output in the event of a macroeconomic shock.

5.133 Second, with regard to various cost certainty mechanisms (such as RPEs), there is agreement between GEMA and the Appellants that their presence in themselves do not give rise to greater productivity, all else equal. We also agree with the Appellants' arguments (set out in paragraph 5.63) that, in practice, firms operating in competitive markets would be expected to pass through some cost increases to their customers, rather than absorbing all of those increases.

5.134 However, owing to the RPEs mechanism (including both the true-up mechanism and the ex ante forecast of known headwinds when the price control is set), network companies will, with a higher degree of certainty, be able to pass through more of these costs, and to pass them through to customers more quickly, than the average firm operating in the Comparator Sectors. GEMA's decision was consistent with that point.

5.135 The Appellants challenged our view (about the extent and speed of cost pass through) in response to our PD (see paragraph 5.71). Having considered their response, we maintain that view for the following five reasons.

5.136 First, we recognise that industry-wide cost increases would be passed through to customers in more competitive markets. However, the certainty afforded to the network companies by the RIIO framework is a reasonable basis to conclude that they will be able to recover cost increases through higher revenues, with a higher degree of certainty, and more quickly than firms operating in competitive sectors.

5.137 In reaching that conclusion, we have taken into account the additional evidence the Appellants submitted on the level of pass through in competitive markets. In response, GEMA submitted that the literature cited by the Appellants was not conclusive and did not represent a consensus view. We agree with GEMA because there are varying conclusions on cost-pass through, as can be seen by the differing evidence referenced by GEMA and the Appellants.

(a) The Appellants cited:[129]

(i) Sangani (2026)[130] – which found that cost pass-through is close to complete in U.S. manufacturing, retail food, and retail gasoline companies.

(ii) Ampudia et al. (2024)[131] – which found almost complete pass-through (c. 96% after one year) of intermediate input price increases to producer prices in industrial sectors (mining, manufacturing and utilities), with approximately full pass-through persisting over longer horizons.

[129] Appellants' Joint Response to RIIO-3 OE PD, paragraph 98.
[130] Sangani, Kunal (2026), Complete Pass-Through in Levels. The Quarterly Journal of Economics, 141(2), 1077–1135.
[131] Ampudia, M., Lombardi, M.J. and Renault, T. (2024), The wage-price pass-through across sectors: evidence from the euro area (herein: "Wage-price pass through"), BIS Working Papers, No. 1192, Bank for International Settlements.

(iii) BoE 2025 Monetary Policy Report[132] – which noted recent survey by the Bank's Agents suggests that almost all firms have passed on some of the recent cost increases through to prices, and most firms have passed on a majority of the increase.

(b) GEMA referenced:[133]

(i) Bunn et al. (2026)[134] – a Bank of England staff working paper that uses survey evidence from over 4,200 UK firms to show that cost pass-through differs materially even amongst firms within the same sector;

(ii) CMA (2023)[135] – a market study of UK food and grocery manufacturing which found that even where the CMA identified no significant competition problems, pass-through was partial, delayed and varied sharply by cost type, contract structure and manufacturer type; and

(iii) RBB Economics (2014)[136] for the Office of Fair Trading and (2016)[137] for the European Commission – two studies that found empirical evidence that pass-through rates vary with the nature of the cost shock, demand and supply elasticities, cost structure and substitutability.

5.138 We note, too, that, while the implementation of the RPE mechanism involves a 2-year lag, it is only the true-up of any differences between projected and actual levels of the indices which take two years. Any forecast movements in RPEs are included ex ante in the price control.

5.139 We also note that the above reasoning is not inconsistent with our observation that the Comparator Sectors are competitive, with lower potential efficiency gains from catch-up efficiency. We agree with the Appellants that whether firms choose to tolerate input price pressures, for example, to preserve market share, and at a cost to their profits, is a separate issue from productivity. Our view, however, is a narrower one. Namely, that, when costs rise, competitive firms can increase prices (and the value of their output) but typically at the expense of lower quantity. This is the impact on output (and hence productivity) that network companies are partially insulated from.[138]

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[132] Bank of England (November 2025), Monetary Policy Report: Box A, pp. 30-31.
[133] GEMA's response to CMA's admission of new evidence, paragraph 14.1.
[134] Bunn, Bloom, Menzies, Mizen, Thwaites and Yotzov (2026), State- and time-dependent pricing, Bank of England Staff Working Paper No. 1,166
[135] CMA (2023), Price inflation and competition in food and grocery manufacturing and supply.
[136] RBB Economics. (2014). Cost pass-through: Theory, measurement, and potential policy implications, A report prepared for the Office of Fair Trading (OFT1493).
[137] RBB Economics & Cuatrecasas, Gonçalves Pereira. (2016). Study on the passing-on of overcharges: Final report.
[138] The separate issue of how cost shocks can impact on financial performance of network companies compared to the wider economy is something which could be relevant to the regulator's overall judgement about the appropriate level of stretch when deciding on an OE target.

5.140 Second, we agree with the Appellants' that GEMA's decision, and our PD, focused on the effect of cost increases, rather than decreases. However, our view is that it was open to GEMA, considering the productivity outlook in the context of shocks such as the GFC, Brexit, Covid and the war in Ukraine, to be more concerned about the potential impact of upward cost shocks over the RIIO-3 period and whether these might continue to weigh on wider economy productivity.

5.141 Third, we recognise that RPE indexation does not reflect the GDNs' actual cost structures and only covers part of totex. However, whilst this may reduce the insulation benefit of the network companies, it does not remove it.

5.142 Fourth, we agree with the Appellants that GEMA's analysis of the EU KLEMS data captured historical productivity up to and including 2019 only. That means the impact of some shocks which GEMA referenced (namely, Covid-19 and the war in Ukraine) will not be captured in its analysis of the EU KLEMS data.

5.143 However, GEMA referred to these shocks also in the broader context of the continued weakness of economy wide productivity post 2019 (as can be seen in the ONS historical TFP data and the OBR and BoE forecasts of future productivity).[139] Over the RIIO-3 period, given these productivity forecasts, GEMA took the view that, to the extent that economic headwinds continue to have an impact on productivity, GDNs would not be adversely affected to the same extent as the average of the Comparator Sectors and companies in the wider economy. That, in principle, was not an unreasonable view.

5.144 Fifth, we note the Appellants' arguments (see paragraph 5.66) about the double counting of efficiencies within GDNs' business plan submissions and the interaction with insulation. We agree that, to the extent efficiency gains are known, these should already be reflected in business plan totex. However, OE seeks to capture future, unknown efficiency gains which are not reflected in those plans.[140]

5.145 Accordingly, we do not find that GEMA was wrong to identify, at least in principle, that the GDNs are liable to be partially insulated from economic headwinds and to take that into account in setting the OE challenge. Nor do we find that it erred in considering the insulation effect in the way it did at stage 1 of its OE assessment (as described in paragraph 5.58 above).

5.146 At that stage 1, neither NGET nor other GDNs had taken account of any insulation effect in their business plans. The plausible possibility of such an effect was something GEMA properly took into account in taking the view that less weight

[139] See the section on Independent Forecasts in the Qualitative Matter section.
[140] This is consistent with GEMA's view. In its FD, GEMA referred to 'unknown OE gains' as distinct from catch-up efficiency. See GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.53.

could be placed on post-GFC productivity data than pre-GFC data and that 0.7% was at the bottom end of the range of OE that the GDNs could achieve.

5.147 As to whether GEMA erred in placing further reliance on the insulation effect, at stage 2 in assessing the qualitative factors and setting the specific point of the OE challenge (ie at 1%), we come back to that in relation to the Qualitative Matter later in this volume.

### Countervailing factors

5.148 Some of the factors identified by the Appellants (set out in paragraphs 5.72 to 5.76) would not necessarily operate as countervailing factors to any insulation effect. For example, health and safety requirements must be met by firms in both economically regulated and competitive sectors. While the requirements of the RIIO regulatory framework place burdens on management time which may not be present in competitive sectors, the GDNs receive ex ante totex allowances for significant management time spent on regulatory processes. Firms in competitive sectors do not.

5.149 It also appears that GEMA did have regard to some of these factors in its FD and has also expanded on its reasoning during the course of the appeal. For example:

(a) With respect to paragraph 5.75 (a) and (b), GEMA did consider arguments that network companies are fully impacted by wider productivity slowdowns driven by a lack of public and private investment, infrastructure quality, quality of human capital stock and management quality. However, GEMA concluded that it did not agree with the submissions given the level of investment allowed in its RIIO-3 FDs.[141] GEMA also noted during the appeal that it accepted that GDNs cannot escape economy-wide shortages of engineers and specialists, but the RIIO framework makes workforce planning, recruitment and training materially easier.[142]

(b) With respect to paragraph 5.75 (c), GEMA noted in its FD that declining gas demand could potentially lead to fewer leaks on the network, contributing to lower opex costs and that it disagreed that a declining demand outlook for gas results in fewer opportunities to drive efficiencies in the future.[143]

(c) With respect to paragraph 5.75 (d), in its Response, GEMA noted that RIIO substantially insulates GDNs from underinvestment in their own sector

[141] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.51.
[142] Steven McMahon, WS2 (April 2026), paragraph 198.
[143] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.39.

because efficient capex/repex/opex is funded ex-ante, investors receive a regulated return, and financeability is assessed as part of the price control.[144]

(d) With respect to paragraph 5.75 (e), GEMA noted that the Appellants overstated GEMA's original point (that operating in a non-competitive sector frees up management time). GEMA added that the correct comparison is not between a GDN and an unconstrained firm free of reporting obligations, but between a GDN operating under a stable ex-ante regulatory settlement and a competitive firm the management of which must also devote substantial time to demand risk, customer acquisition, margin protection and financing risk. GEMA concluded that on that comparison, it considered it appropriate to conclude that, although RIIO imposes regulatory burdens, it also removes a distinct set of commercial distractions.[145]

5.150 We note GEMA's position, expressed above, that changes in the 2030 mains repex programme will be reflected in RIIO-GD4 totex allowances. We also note that this potentially limits the relevance of this countervailing qualitative factor to the productivity levels the GDNs can achieve during the RIIO-GD3 price control period.

5.151 We note in addition our finding that GEMA treated the GDNs as partially insulated. Such treatment may be consistent with it taking into account some countervailing factors. GEMA's finding of partial insulation is consistent with its positioning that the factors pleaded by the Appellants may reduce the extent to which GDNs are insulated but will not fully offset GEMA's reasoning relating to characteristics of the RIIO framework.

5.152 We do not, therefore, find that GEMA erred on account of having failed to take account of countervailing factors relating to the insulation effect.

### Quantification of insulation

5.153 The Appellants argued that GEMA erred as it did not quantify the impact of insulation on the OE challenge. It is the case that GEMA did not undertake any empirical analysis of that impact. It has submitted that it did not do so because it was concerned by the potentially low accuracy of sector-specific historical productivity estimates.[146]

5.154 The Appellants have also acknowledged the difficulties in performing analysis which quantifies the impact of insulation on the OE challenge.[147] Nonetheless, Cadent's adviser, NERA, provided two pieces of empirical analysis in its

[144] Steven McMahon, WS2 (April 2026), paragraph 198.
[145] Steven McMahon, WS2 (April 2026), paragraphs 191 to 192.
[146] GEMA response to GEMA RFI 01, question 2(a).
[147] Transcript of the hearing for Ongoing Efficiency session on 17 June 2026, p117, lines 7 to 11.

submissions to seek to demonstrate that network companies are not insulated from the post-GFC slowdown in productivity in the wider UK economy (see paragraphs 5.78 and 5.79). Additionally, in response to our PD, the Appellants' advisers (Frontier and NERA) prepared analysis and referenced studies of the GDNs' historical productivity.

5.155 For the reasons that follow, we do not consider that the Appellants' advisers' analyses mean GEMA was wrong to have regard to an insulation effect in principle, nor that GEMA was wrong in the way it applied its insulation hypothesis at stage 1 of its OE assessment.

*NERA analysis comparing gas and electricity sectors to Grant Thornton's Comparator Sectors*

5.156 We have considered NERA's analysis of Grant Thornton's Comparator Sectors TFP compared with economy wide outturn TFP. As we set out in paragraph 5.115, GEMA used its reasoning on insulation to assess how to interpret the TFP figures for Grant Thornton's Comparator Sectors.

5.157 In our judgement, NERA's observation that these sectors exhibited similar TFP growth to the wider economy does not invalidate GEMA's reasoning that, in principle, network companies are expected to be partially insulated from the wider economic slowdown in productivity, over RIIO-3. The relevant question is whether the GDNs will be insulated compared with those sectors over that period and whether GEMA erred in its assessment that they would be. NERA do not analyse the GDNs' past productivity and instead compare historical productivity of the wider economy to historical productivity of the average of the Comparator Sectors.

5.158 We have also considered NERA's analysis comparing trends in historical productivity between the average of Grant Thornton's Comparator Sectors and 'electricity and gas' sectors. NERA contends that its analysis shows that historical productivity of 'electricity and gas' sectors is lower than the average productivity of Grant's Thornton's Comparator Sectors.

5.159 We note, however, that NERA's 'electricity and gas' sectors included in its analysis do not just include regulated network companies. The analysis also includes steam and air conditioning supply; and water supply, sewerage and waste management. NERA has not sought to analyse the impact of including these other sub sectors which do not benefit from the same regulatory protections as the regulated network companies. That being so, the analysis is of limited value when considering whether network companies are partially insulated from the post-GFC slowdown in productivity in the wider UK economy during the RIIO-3 period.

*Analysis of the GDNs' historical productivity*

5.160 In our PD, we stated that neither GEMA nor the Appellants had performed empirical analysis to show whether GDNs are insulated from the wider economic slowdown. In response to our PD, the Appellants referenced an academic study of the GDNs' historical productivity by Ajayi and Pollitt (2022)[148] and commissioned analysis from their advisers, NERA and Frontier Economics.

5.161 Directionally the three sets of analysis all find that GDNs have delivered relatively low and often negative rates of TFP growth in the recent past.

(a) In their base model, which they describe as being most like Ofgem's approach in corresponding price controls, Ajayi and Pollitt estimate annual TFP of 0.4% between 2008/09 and 2012/13, followed by −10.4% between 2013/14 and 2018/19. Over the entire period, they estimate annual TFP growth of −6.2%. This comprises 0.2% p.a. catch-up efficiency and -6.4% shift in the technological frontier. Extending the model to include quality adjustments they estimate annual TFP growth of −5.4% over the whole period.[149]

(b) NERA applies to GB gas distribution modified versions of an approach developed by the CMA for its PR24 water price redeterminations to measure frontier productivity growth in the water sector. Depending on the modified approach used, NERA finds that the GDNs' average, historical productivity growth ranged between -0.77% and 0.42% over GEMA's historical modelling period 2014 to 2024.[150]

(c) Frontier Economics uses a Törnqvist indexing procedure to estimate TFP growth based in the GB gas distribution sector.[151] It finds that TFP grew modestly from FY2014 to FY2018, before declining in FY2018 to FY2024. Frontier estimates that average TFP growth over the entire period was −0.77% without quality adjustments and −0.56% with quality adjustments. Because its estimates capture catch-up efficiencies as well as frontier shift, Frontier argues that they are likely to represent an upper bound on the OE achieved by the GB gas distribution sector from 2014 to 2024.[152]

5.162 The TFP growth estimates for the GB gas sector from the cited academic study and both commissioned analyses vary substantially: from -6.4% to 0.42% p.a.. This wide range of TFP growth estimates is the result of the different modelling

[148] Ajayi, V., & Pollitt, M. G. (2022). *Changing times: Incentive regulation, corporate reorganisations, and productivity in Great Britain's gas networks.*
[149] Ajayi, V., & Pollitt, M. G. (2022). *Changing times: Incentive regulation, corporate reorganisations, and productivity in Great Britain's gas networks,* p 18 & 19.
[150] Supporting Analysis to Appellants' joint RFI response (Confidential) – Nera, page 2.
[151] Supporting Analysis to Appellants' joint RFI response (Confidential) – Frontier, paragraph 2.
[152] Supporting Analysis to Appellants' joint RFI response (Confidential) – Frontier, Table 1 and paragraphs 19 to 21.

techniques and assumptions being applied to similar sets of historical data. Clearly understanding how the different modelling assumptions interact with similar historical data sets to produce TFP estimates is central to our ability to assign material evidentiary weight to these findings for our final determination.

5.163 In their submissions, NERA and Frontier both highlight potential limitations with their own analysis.

(a) NERA highlights challenges of recovering TFP growth estimates linked to the presence of time trends and the potential omission of relevant input prices. It conducts a range of related sensitivities that explore alternative assumptions but notes that underlying concerns may remain.[153]

(b) Frontier notes that given the time available, it has adopted a pragmatic approach and used readily available information from price control data to proxy for (i) the wide variety of inputs used; and (ii) the complex outputs produced from them.[154]

5.164 Similarly, in the peer reviewed version of the Ajayi and Pollitt study,[155] the authors conclude that: 'On the whole, we believe that our study is not conclusive; hence, we recommend that future research could explore the determinants for the productivity growth declines even after quality adjustment'.[156]

5.165 In its response to these submissions, GEMA submitted that neither NERA nor Frontier directly measured insulation and that both firms' analyses are highly sensitive to modelling choices, assumptions and sample periods. It also stated that the academic literature cited by the Appellants was not designed to test insulation and does not do so. GEMA's view was that the new evidence illustrated the inherent difficulties in attempting to derive a robust quantitative estimate of insulation from historical productivity data.[157]

5.166 Citizens Advice submitted that the wide range of results produced by NERA's analysis demonstrates that the results are unstable and should not be relied upon for informing ongoing efficiency. Further, Citizens Advice considered that the productivity figures presented by Frontier reflect methodological limitations of its underlying model that arise due to the challenges identified by Frontier with applying the Törnqvist TFP approach to the price control data. More generally, Citizens Advice emphasised the risk that the presented modelling sensitivities are

[153] Supporting Analysis to Appellants' joint RFI response (Confidential) – Nera, page 2.
[154] Supporting Analysis to Appellants' joint RFI response (Confidential) – Frontier, paragraphs 6 to 12.
[155] Victor Ajayi & Michael G. Pollitt (2025) Changing times: incentive regulation, corporate reorganizations, and productivity growth in the Great Britain's gas networks, Applied Economics, 57:4, 453-470, DOI: 10.1080/00036846.2024.2305158
[156] Victor Ajayi & Michael G. Pollitt (2025) Changing times: incentive regulation, corporate reorganizations, and productivity growth in the Great Britain's gas networks, Applied Economics, 57:4, 453-470, DOI: 10.1080/00036846.2024.2305158, p469.
[157] GEMA's response to CMA's admission of new evidence, paragraph 2.

selected to favour the GDNs and that academic papers chosen by GDNs might not represent academic consensus.[158]

*Conclusions on quantification of insulation*

5.167 Our view, accordingly, is that the findings in the Appellants' advisers' analyses, suggesting that the GDNs delivered relatively low productivity gains over the last ten years, should be considered with caution. The uncertainty which attaches to them appears to confirm the difficulty of quantifying any insulation effect. That uncertainty means that the analyses do not show that GEMA's view - that, in principle, the GDNs benefit from an insulation effect – was wrong.

5.168 The same uncertainty, however, suggests that, in making any assumption of an insulation effect, GEMA should proceed with care. It should have, but does not appear to have, turned its mind to the question of where in its plausible range it should set the OE challenge in light of that uncertainty. This is a matter to which we return in relation to the Qualitative Matter below.

**Regulatory precedent**

5.169 The arguments in front of the CMA at RIIO-2 primarily focused on GEMA's RIIO-2 FD reasoning that 'network companies were less exposed to negative shocks and the lack of competitive pressure meant they should be able to place greater management focus on driving high efficiency gains'.[159]

5.170 We take into account that GEMA's reasoning on insulation has evolved since RIIO-2, with it putting greater emphasis on the partial insulation of network companies in the context of ongoing instability in the wider economy post-GFC and the effect of the cost certainty measures in the regulatory framework. In other words, the likelihood that, in the RIIO-3 price control, network companies would not be adversely affected by economic headwinds to the same extent as the average of the Comparator Sectors.[160]

5.171 It is important, however, that GEMA has regard to relevant considerations as set out in the paragraphs above, when considering the implications of the insulation effect for the setting of the OE challenge. That is what the principles of best regulatory practice require.

5.172 In that connection, in response to our PD the Appellants contended that we had not considered the relevance of the CMA's PR24 insulation reasoning in our assessment. There are some similarities between the RIIO and water regulatory frameworks which may have implications for productivity (for example, RPEs,

[158] Interveners' response to CMA's admission of new evidence.
[159] GEMA (2020), RIIO-2 Final Determinations –- Core Document, paragraph 5.21.
[160] On that basis, our conclusions can be reconciled with, rather than contradict, those the CMA reached in RIIO-2.

inelastic demand and revenue certainty discussed above). The issue before is, however, is whether GEMA's RIIO-3 decision was wrong, specifically in the present context, of whether GEMA had proper regard and gave appropriate weight to the principles of best regulatory practice.

5.173 As its FD makes clear, in paragraphs 8.44 – 8.46, GEMA did have regard to the CMA's (then provisional) decision in PR24 when setting the OE challenge. As set out in those paragraphs of the FD, it considered a number of points that distinguished PR24 from RIIO-3. We, too, observe that the CMA's PR24 decision also explored a number of water sector specific considerations (such as water technological progress and overlap between outcomes and frontier shift) which are not directly transferrable to RIIO-3. Accordingly, we do not consider GEMA's approach to have been wrong in this specific regard.

### Conclusions on GEMA's reasoning for insulation

5.174 We agree with the Appellants' arguments that the RIIO framework does not give network companies full insulation from the post-GFC slowdown in productivity in the wider UK economy. We do not, however, find that GEMA's decision was based on, nor theoretically underpinned by, there being such full insulation. Nor do we find that GEMA's approach confounded or was inconsistent with standard economic theory that competitive markets drive the best consumer outcomes.

5.175 Rather, GEMA had a view that network companies are partially insulated from economic headwinds which have impacted the Comparator Sectors' productivity post-GFC. We find that the insulation effect, while hard to quantify, provided a reasonable basis in principle for GEMA placing less weight on post-GFC productivity data and supported the setting of the bottom end of the plausible range at 0.7%. We do not find it to have been wrong in either of these respects.

5.176 We have considered the quantitative analysis provided by the Appellants on the historical productivity of GDNs but find that there is too much uncertainty in the analysis to draw clear conclusions (and to find that GEMA was wrong in principle).

## Conclusions on the Insulation Matter

5.177 The points in the preceding paragraphs support the following conclusion. Namely that, where it had a sound view that network companies are partially insulated from the post-GFC slowdown in productivity in the wider UK economy, but there was a lack of reliable empirical evidence, GEMA was entitled to make a judgement that such partial insulation was one factor indicating that those companies, during the RIIO-3 price control period, could be expected to deliver greater productivity gains than the average of the Comparator Sectors have delivered post-GFC, and as a result place less weight on post-GFC data. Such a judgement was at least as good as an alternative judgement to the opposite effect.

5.178 It does not follow that any such insulation would have itself lifted the expected productivity gains of the companies from, for example, 0.1% to 1%. GEMA did not, however, treat it as having that effect (see paragraph 5.175).

5.179 Our view, accordingly, is that GEMA did not err in its view that regulated networks will be partially insulated from the post-GFC slowdown in productivity in the wider UK economy during the RIIO-3 price control period insofar as this concerns its quantitative assessment (stage 1). We return to the way in which GEMA considered insulation as a qualitative factor at stage 2 of its assessment below, where we consider the Qualitative Matter.

## The Quantitative Matter: use of quantitative evidence in setting the OE challenge

### Statutory question for determination on the Quantitative Matter

5.180 Each of the Appellants submitted that GEMA's decision was wrong on account of GEMA's approach to quantitative evidence, under statutory grounds (a), (c) and (e) in paragraph 5.47 above. Cadent, SGN and WWU also submitted that the decision was wrong, owing to that approach, under statutory ground (b), and NGN and SGN said it was wrong under statutory ground (d).

5.181 Accordingly, the statutory question for our determination of the Quantitative Matter is:

> Was the decision wrong because, on account of its approach to quantitative evidence, GEMA failed to have proper regard to, or to give appropriate weight to, the matters referred to in section 23D(4)(2) of the GA86; made the decision based on an error of fact; failed to achieve the stated effect; or, because of that approach, the decision was wrong in law.

### Subsidiary questions

5.182 Taking account of the Appellants' submissions, the subsidiary questions for our assessment, in order to determine the statutory question on the Quantitative Matter, are whether the decision was wrong because, in its approach to quantitative evidence, GEMA:

(a) Failed properly to have regard to, and/or to give appropriate weight to the following matters to which it must have regard pursuant to the duties mentioned at section 23D(2):

(i) The need to secure that the Appellants were able to finance their regulated activities (s.4AA(2)(b)), in that it set an OE challenge that was

not in line with the available economic evidence, which means that the Decision underfunds the Appellants' efficient costs, thus discouraging investors from supporting the sector.[161]

(ii) The desirability of promoting economic growth[162] in that, in setting an unreasonable OE challenge, GEMA discourages investors from supporting the sector, which impedes growth.[163]

(iii) The carrying out of its functions in the manner best calculated to promote economy and efficiency and to secure a diverse and viable long-term energy supply (s.4AA(5)(c)), in that, by underfunding efficient costs, it discouraged investors from supporting the sector, raising financing costs in the future, which is not conducive to securing a diverse viable long-term energy supply.[164]

(iv) The principles of best regulatory practice[165] (section 4AA(5A)(b)) in that:

(1) GEMA changed methodology since RIIO-2 to place less weight on post-GFC data thus failing to adopt an approach that was consistent and transparent.[166]

(2) It did not adequately explain the consistency of its OE conclusion in the face of changing evidence and thus failed to adopt a transparent approach.[167]

(3) It took an approach to the latest OBR forecasts that differed from its approach to using the latest data in other areas of the price control, thus not being consistent.[168]

(4) Its approach of taking NGET's 0.7% OE estimate as the minimum level of OE improvement, on the basis that network companies are incentivised to aim down, did not provide consistent regulation, took an approach that ran contrary to GEMA's own guidance, and created perverse incentives for companies to aim down in their business plans.[169]

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[161] Cadent NoA paragraph 84; NGN NoA paragraph 71.
[162] Deregulation Act 2015, s.108, as applied to GEMA by the Schedule to the Economic Growth (Regulatory Functions) Order 2017.
[163] Cadent NoA paragraph 84; NGN NoA paragraph 64.
[164] Cadent NoA, paragraphs 64, 84 and 100; NGN NoA paragraph 73.
[165] The principles of best regulatory practice are defined in s.4AA(5A) as (a) the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed; and (b) any other principles appearing to GEMA to represent the best regulatory practice.
[166] Cadent NoA, paragraphs 85 to 87; NGN NoA paragraph 156.
[167] WWU NoA paragraph 5.31(c).
[168] NGN NoA, paragraph 169.
[169] Cadent NoA paragraphs 76 and 79.

(v) The interests of existing and future consumers (section 4AA(1)), in that it imposed an arbitrarily high OE figure that is not supported by the evidence of the UK's sustained and ongoing productivity weakness, and it is contrary to the interests of existing and future consumers for the Appellants not to be able to finance the carrying out of their functions.[170]

(b) Failed to **achieve the stated effect of the modifications** resulting from the Decision, in that GEMA stated that the modifications:

(i) had the effect of setting an achievable and deliverable target, or a 'plausible range' or a 'narrow plausible range' from which to select that target, and they did not;[171] or

(ii) reflected the productivity improvements that even the most efficient company can achieve, when what they actually did was underfund all companies[172].

(c) Made **errors of fact**, in that:

(i) It erred in the weight it placed on pre- and post-GFC data.[173]

(ii) It derived the top end of its OE range solely from the 1997-2007 estimate of 1.3%, effectively discounting all other evidence provided to it by its adviser, Grant Thornton.[174]

(iii) Its use of network company business plan data:

(1) drew incorrect conclusions from NGET's estimate of 0.7%[175], and

(2) incorrectly assumed that energy networks must all have 'aimed down' in arriving at their estimates.[176]

(iv) Its 1% OE figure is not compatible with the evidence of the UK's sustained and ongoing structural productivity weakness[177] and is divorced from current and expected future economic conditions.[178]

(d) Made **errors of law** in that:

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[170] Cadent NoA paragraph 84 ; NGN NoA paragraphs 43(b) and 60.
[171] SGN NoA, paragraphs 444 and 473(iii).
[172] NGN NoA paragraphs 43 and 194.
[173] NGN NoA paragraphs 148-150, SGN NoA paragraphs 442 to 444 and 473.
[174] NGN NoA paragraph 156; SGN NoA, paragraphs 440 and 473; WWU NoA paragraph 5.31(a).
[175] Cadent NoA paragraphs 72 to 79, NGN NoA paragraphs 185 to 187; SGN NoA paragraphs 433 to 438; WWU NoA paragraphs 5.6, 5.7 and 5.42(c).
[176] Cadent NoA, paragraph 75
[177] NGN NoA paragraphs 142 and 157.
[178] Cadent NoA paragraph 64, 72-79, 88-90.

(i) It irrationally changed methodology since RIIO-2 to place less weight on post-GFC data.[179]

(ii) It made irrational use of network company business plan data in that:

(1) It misconstrued the significance of NGET's estimate of 0.7%,[180] and

(2) It irrationally assumed that energy networks must have all "aimed down" in arriving at their estimates.[181]

5.183 We note that the Appellants referred to independent productivity forecasts as a reason why GEMA was wrong in its approach to setting its plausible range from which to select the OE figure. However, GEMA used the independent forecasts as one of a range of qualitative factors when considering what OE point estimate to select from that range. We therefore consider submissions relating to the independent forecasts and set out our corresponding assessment in the section below when we discuss the Qualitative Matter.

**Our analytical approach**

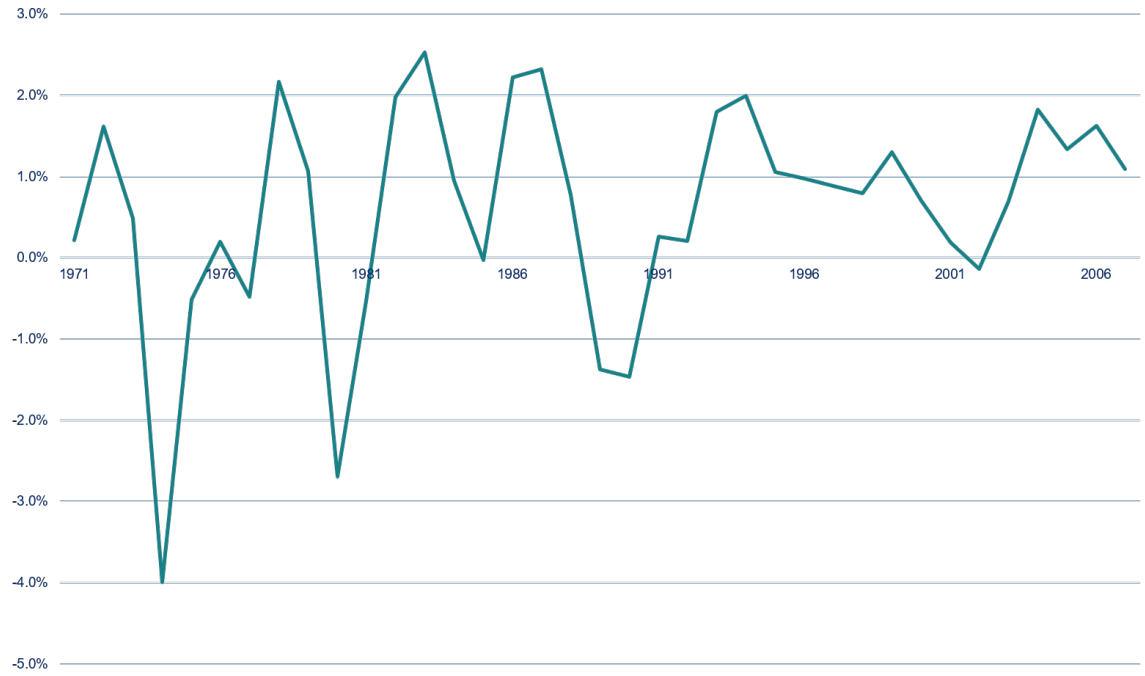
5.184 We do not agree with the Appellants that our PD included an 'analytical misstep' in giving prominence to insulation, rather than using the quantitative evidence as a starting point. Given the nature of GEMA's OE decision making process there are interlinkages between the Insulation, Quantitative and Qualitative Matters.

5.185 We set out below our reasoning for our overall approach to the Quantitative Matter. We consider GEMA's approach to the EU KLEMS data, incorporating our conclusions on GEMA's assessment of the network company business plans and the weight on pre- and post-GFC data.

5.186 We agree with the Appellants and GEMA that the appropriate starting point for GEMA's analysis is the EU KLEMS historical TFP data for the Comparator Sectors. However, we note that setting an OE challenge is a forward-looking exercise, and there is no reason to expect any of the historical numbers to provide decisive evidence on the potential for productivity improvements specifically for regulated networks over RIIO-3. We also note that historical productivity is volatile year-by-year (as can be seen in the chart below) and varies considerably between sectors (as can be seen from the data, for example see Grant Thornton's analysis of the individual Comparator Sectors[182]).

[179] Cadent NoA, paragraphs 80-87 ; NGN NoA, paragraph 156; SGN NoA paragraphs 442 to 444 and 473;
[180] Cadent NoA paragraphs 72 and 74; NGN NoA paragraph 185; SGN NoA paragraphs 433 to 438.
[181] Cadent NoA, paragraph 75.
[182] Grant Thornton (June 2025), Independent Report on Ongoing Efficiency, p21 Table 2.

**Figure 1.4: historical annual average TFP for Grant Thornton's Comparator Sectors**




*Source: CMA analysis of EU KLEMS data submitted by Grant Thornton*

5.187 At step 1 of its decision-making process in setting the OE challenge GEMA did use the quantitative KLEMS data. That is standard regulatory practice. During this step, GEMA also considered the network company business plan submissions on OE, which were themselves based on the network companies' analysis of the EU KLEMS data.

5.188 Grant Thornton's analysis of the EU KLEMS data placed weight on the following variables.[183]

(a) The GO measure only.

(b) The Comparator Sectors (Construction; Wholesale and retail trade, repair of motor vehicles and motorcycles; Transportation and storage; Financial and insurance activities; Manufacturing; Information and Communication; Professional, scientific and technical activities, administrative and support services activities) and did not place any weight on economy wide measures.

(c) Three time periods (1970-1996, 1997-2007 and 2010-2019).

[183] Grant Thornton (June 2025), Independent Report on Ongoing Efficiency, p19, Table 1.

**Figure 1.5: Grant Thornton average TFP GO estimates for selected comparator sectors and time periods**

| Sectors | 1970-1996 | 1997-2007 | 2010-2019 | *1970-2019 average (excluding 2008 and 2009)* |
|---|---|---|---|---|
| 1. Construction | 0.4% | -0.9% | -0.1% | *0.1%* |
| 2. Wholesale and retail trade; repair of motor vehicles and motorcycles | 1.0% | 0.0% | -0.3% | *0.5%* |
| 3. Transportation and storage | 1.3% | 0.7% | -0.6% | *0.8%* |
| 4. Financial and Insurance Services | -0.7% | 1.2% | -1.0% | *-0.3%* |
| 5. Manufacturing (simple average of the six selected sub-sectors) | 0.7% | 2.6% | 0.3% | *1.1%* |
| 6. Information and communication | 1.3% | 5.2% | 2.9% | *2.7%* |
| 7. Professional, scientific and technical activities; administrative and support service activities | -0.4% | 0.0% | -0.3% | *-0.2%* |
| **Simple Average** | **0.5%** | **1.3%** | **0.1%** | ***0.7%*** |

*Source: Grant Thornton, June 2025 Ongoing efficiency report for GEMA, Table 2.*

5.189 We set out below the methodology used by some of the network companies in their business plan submissions, which also used the EU KLEMS data.

(a) Frontier's EU KLEMS analysis, prepared for NGET, used:[184]

(i) Both the VA and GO measures.

(ii) Comparator sectors (Construction; Wholesale and retail trade, repair of motor vehicles and motorcycles; Transportation and storage; Financial and insurance activities; Manufacturing (specifically the subsectors machinery and equipment n.e.c; and electrical equipment); Information and Communication; Professional, scientific and technical activities, administrative and support services activities) and economy wide measures.

(iii) Average time period over 1996-2019.

[184] Frontier Economics (2024), Ongoing efficiency at RIIO-T3, paragraph 6.

**Figure 1.6: Frontier Economics plausible range of productivity growth prepared for NGET**

| Comparator set | Measure | 1996-2019 | 2009-2019 |
|---|---|---|---|
| Targeted | Gross Output | 0.6% | 0.2% |
| | Value Added | 1.3% | 0.2% |
| Economy-wide | Gross Output | 0.2% | 0.0% |
| | Value Added | 0.5% | 0.1% |
| **Average** | | **0.7%** | **0.1%** |

*Source: Frontier Economics (2024), Ongoing efficiency at RIIO-T3, Table 1.*

(b) Economic Insight's EU KLEMS analysis, prepared for the GDNs, used:[185]

(i) The GO measure only.

(ii) Comparator sectors (Manufacturing; Chemicals, basic pharmaceutical products; Manufacturing (specifically the subsectors rubber and plastic products and other non-metallic mineral products; machinery and equipment n.e.c; motor vehicles, trailers, semi-trailers and of other transport equipment; and furniture, jewellery, musical instruments, toys, repair and installation of machinery and equipment); Computer, electronic, optical products; electrical equipment; Construction; Wholesale and retail trade, repair of motor vehicles and motorcycles; Transportation and storage) and economy wide measures.

(iii) Two time periods, 2010-2019 and a weighted average of (i) 1970-2007 and (ii) 1995-2019.

**Figure 1.7: Economic Insight recommended range of productivity prepared for the GDNs**

| Period | Average GO TFP growth (%) |
|---|---|
| **Overall range** | 0.2% to 0.8% |
| **2010-2019** | 0.2% |
| **Weighted average of: (i) 1970-2007; and (ii) 1995-2019** | 0.8% |

*Source: Economic Insight (2024), Ongoing efficiency for gas networks at RIIO-3, p35, Table 2.*

5.190 We note the following regarding GEMA's, and the network companies', quantitative assessment of the EU KLEMS data.

[185] Economic Insight (2024), Ongoing efficiency for gas networks at RIIO-3, Annex 1.

(a) There is no major disagreement about the comparator sectors. There is significant overlap between the comparator sectors used by Grant Thornton (GEMA's adviser) and the network companies' advisers (Economic Insight and Frontier).[186] The main difference on the comparator sectors is that the network companies' advisers (including Frontier's analysis for NGET) also included the wider-economy comparison.

(b) The main driver of difference between Grant Thornton and the network companies' advisers is the choice of time periods. All the network companies' advisers included post-GFC data in the top and bottom ends of their OE ranges. Grant Thornton on the other hand, analysed three different time periods, but ultimately placed weight only on pre-GFC data at the top of its range.

(c) Specifically in relation to Frontier's report for NGET, another difference is that Frontier placed equal weight on GO and VA measures.

5.191 In our assessment, and as we set out in more detail above, the choice of time periods is subjective. Grant Thornton makes a valid point that averaging across multiple business cycles can mask differences in productivity performance over time.[187] We agree with GEMA that the GDNs' advisers' ranges can be described as conservative since post-GFC trends indicate a material shift in productivity and there is uncertainty around whether this trend would continue. We note that the prolonged period of low productivity is, by itself, not evidence of a structural break.

5.192 We also note that, in September 2026, the ONS set out that it would take a revised approach to measuring historical labour productivity.[188] The ONS previously estimated that UK economy-wide labour productivity grew by an average of 0.7% post 2008. Under its revised approach, labour productivity grew at an average of 1.3% from 2009 to 2019. This highlights the instability and variability of historical estimates and, to the extent that such estimates form a basis for making forecasts, it also highlights the uncertainty of such forecasts. We recognise that this relates to labour productivity rather than TFP (which is more relevant to setting the OE challenge) but labour productivity is an input to TFP.

5.193 We have considered the following analytical questions to determine whether, on the statutory grounds described above, GEMA's decision was wrong because of its approach to quantitative evidence:[189]

[186] The advisers use substantively similar comparator sectors with a key difference being the manufacturing subsectors included and the weight placed on these individual subsectors.
[187] Grant Thornton (June 2025), Independent Report on Ongoing Efficiency, p18.
[188] ONS (September 2026), Measuring labour productivity: our new approach | National Statistical.
[189] In our PD, we only considered questions (a) and (b). We continue to consider these to be important issues for consideration and set out our updated conclusions on them below. In light, however, of points raised in the Appellants' response to our PD about our overarching approach to assessing GEMA's use of quantitative data (discussed in further

(a) Did GEMA err in its use of network company business plan data?

(b) Did GEMA err in the weight it placed on pre- and post-GFC data?

5.194 We begin by setting out our assessments of these analytical issues before returning to the statutory questions for determination. The conclusions we go on to reach, for the reasons we set out, are that:

(a) GEMA did not err as alleged by the Appellants:

(i) in either its approach to the network companies' business plan data or in its weighting of pre- and post-GFC data; nor, accordingly,

(ii) in its use of quantitative evidence in setting the OE challenge.

(b) However, we also find that, while GEMA was not wrong in setting its range, the top and bottom ends of that range were not equally reasonable points at which it might set the OE challenge for RIIO-3. An OE challenge at the top end of the range would assume that GDNs can deliver productivity improvements last seen on average pre-GFC. While not impossible, GEMA rightly concluded that an OE challenge set at that end of the range was unlikely to be justified. This finding had implications for GEMA's assessment of the qualitative factors and its judgement of the point at which to set the OE challenge. We consider this further in our assessment of the Qualitative Matter.

**Did GEMA err in its use of network company business plan data?**

5.195 GEMA stated in its FD that the lower bound of its range (0.7%) represents the highest estimate submitted by one of the network companies in its business plan. GEMA added that it considered this to be the minimum level of annual OE improvement all network companies should be able to achieve, given the implicit incentives on network companies to 'aim down' in proposing OE targets.[190]

5.196 The highest estimate, of 0.7%, was submitted by NGET.[191] NGET's submission relied on a 2024 report prepared by Frontier Economics.[192] NGET's 0.7% OE submission reflected the upper bound of Frontier's plausible range, shown in Figure 1.6 above.

5.197 NGET's OE business plan submission was based on Frontier's analysis of the EU KLEMS data with weight placed on:

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detail below), we also address the overarching question of whether GEMA erred in its overall assessment of the quantitative data when setting its plausible range.

[190] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.23.

[191] NGET (2024), RIIO-T3 business plan, p76.

[192] Frontier Economics (2024), Ongoing efficiency at RIIO-T3.

(a) both targeted comparator sectors[193] and economy-wide sectors;

(b) both VA and GO measures; and

(c) two time periods, one capturing pre and post GFC data (1996-2019) and one capturing post GFC data only (2009-2019).

*Appellants' submissions*

5.198 The Appellants' criticisms of GEMA's approach to business plan data focus on two areas – first GEMA's use of the OE figure provided by NGET in its business plan, and second GEMA's use of other energy network companies' business plans.

**Use of NGET's business plan data**

5.199 As to GEMA's use of the NGET business plan OE submission, Cadent, NGN and SGN submitted that GEMA misconstrued NGET's estimate of 0.7% as NGET selected this from the top of the 0.1-0.7% range derived from Frontier Economics' benchmarking exercise of comparator sectors. They alleged that this amounted to an error of fact, in that GEMA misunderstood the basis for NGET's estimate. Cadent and WWU alleged that the 0.7% figure in NGET's business plan can only reasonably be regarded as the ceiling, or maximum estimate, for OE.[194]

5.200 Cadent submitted that GEMA's approach of taking NGET's 0.7% OE estimate as the minimum level of OE improvement, on the basis of the assumption that network companies are incentivised to aim down, is at odds with GEMA's use of energy network estimates in RIIO-2.[195]

5.201 NERA (adviser to Cadent) submitted that an OE forecast of 0.7% is not credible as a lower bound of the range from which GEMA should select the OE figure. NERA stated that the 0.7% figure proposed by NGET represents an alternative estimate of the upper bound of the credible range for an OE forecast because:[196]

(a) An OE forecast of 0.7% overstates the top-end of the range that can be inferred from Grant Thornton's evidence, after discarding its estimates that exclude the post-GFC period.

(b) The OE forecast of 0.7% also sits above the latest OBR productivity forecasts for the wider economy, which averages 0.51% from 2024-2030.

[193] Frontier's targeted comparator sectors are the same as Grant Thornton's Comparator Sectors with the exception that Frontier includes two manufacturing subsectors whereas Grant Thornton includes one manufacturing sector which is comprised as an average of six manufacturing subsectors.
[194] Cadent NoA paragraphs 72 and 74, NGN NoA paragraph 185, SGN NoA paragraphs 433 to 438.
[195] Cadent NoA paragraph 76.
[196] NERA (2026), Expert Report on GEMA's Approach to Ongoing Efficiency at RIIO-GD3, paragraph 59.

5.202 NERA also stated that if GEMA had based its determination principally on macroeconomic TFP data (historical and/or forecast), its approach would not set a precedent that affects network companies' incentive to 'aim up' or 'aim down' in their OE forecasts.[197]

5.203 Frontier (adviser to NGN, SGN and WWU) submitted that the OE figure in NGET's business plan submission was at the top end of the reasonable range identified in the Frontier Economics report which informed NGET's business plan.[198] Frontier added that it was wrong to treat this as a minimum of GEMA's plausible range because:[199]

(a) The 'broad feasible range' developed by Grant Thornton has a lower estimate of 0.1%.

(b) Grant Thonton's estimate over the full EU KLEMS time series (1970-2019) is 0.5%.

(c) The lower end of Frontier's updated EU KLEMS analysis suggests that negative TFP growth could be feasible, at -0.1%.

(d) The OBR's central forecast average TFP growth rate (0.5%) and the BoE's (0.2%) are both below the bottom end of GEMA's range.

(e) NGET's business plan submission was selected from the top of the reasonable range derived in the Frontier 2024 report. This was estimated specifically to allow for the prospect of some reversion towards pre-GFC productivity growth trends in RIIO-3, even though, as noted at the time, such a reversion was unlikely given the trends in the evidence.

5.204 As to the CMA's provisional approach to GEMA's use of the NGET estimate of 0.7% in setting the lower bound of the plausible range, the Appellants submitted, amongst other things, that:

(a) The CMA had not assessed the central issue of whether it was rational for GEMA to use an estimate that NGET selected from the upper end of Frontier Economics' plausible range as the minimum plausible outcome for all GDNs.[200]

(b) The CMA had merely addressed whether NGET had an incentive to aim down, and not whether it had in fact done so, and on the facts before GEMA and the CMA NGET could not be regarded as having done so.[201]

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[197] NERA (2026), Expert Report on GEMA's Approach to Ongoing Efficiency at RIIO-GD3, paragraph 64.
[198] Frontier Economics (2026), Assessment of GEMA's approach to setting ongoing efficiency at RIIO-3, paragraph 1.26.
[199] Frontier Economics (2026), Assessment of GEMA's approach to setting ongoing efficiency at RIIO-3, paragraph 4.62.
[200] Appellants' Joint Response to RIIO-3 OE PD, paragraph 142.
[201] Appellants' Joint Response to RIIO-3 OE PD, paragraph 143 and 145.

(c) The CMA and GEMA had, without proper regard or giving appropriate weight to, the principles of best regulatory practice, created unintended incentive effects for future price controls by treating companies' OE parameters, even where they are described by the network company as "challenging and bold", as the minimum floor.[202]

**Use of other network companies' business plan data**

5.205 Cadent, NGN and WWU submitted that GEMA failed to have any, or any proper, regard to other energy networks' estimates, and incorrectly assumed that all energy networks must have 'aimed down' in arriving at their estimates for OE in their business plans.[203]

5.206 Cadent submitted that GEMA's approach to business plan data was contrary to its own guidance, which sets standards to ensure that business plan submissions are accurate, ambitious, efficient and in the consumer interest. Cadent also submitted that GEMA's approach incentivises companies to underestimate the OE target in future price controls.[204]

*GEMA's submissions*

**Use of NGET's business plan data**

5.207 GEMA submitted that it did not rely on a single data point – the NGET 0.7% estimate – when setting the lower bound for its OE assessment.

5.208 GEMA submitted that it did not misread or misinterpret NGET's business plan. It submitted that it was clear that it had not understood NGET to have characterised 0.7% as being the minimum plausible OE estimate that it thought it could achieve.[205]

**Use of other network companies' business plan data**

5.209 GEMA stated it did not ignore data points below 0.7%. Rather, it concluded that this was the lowest figure that could be justified on a 'properly balanced review' of the evidence, and that any lower figure would be inconsistent with promoting efficiency.[206] It submitted that it carefully considered the evidence in each of the companies' business plans and the supporting evidence contained in their advisers' reports.[207]

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[202] Appellants' Joint Response to RIIO-3 OE PD, paragraph 150
[203] Cadent NoA, paragraph 75; NGN NoA paragraphs 186-187; WWU NoA, paragraph 5.42(c).
[204] Cadent NoA, paragraph 79(d).
[205] GEMA Response to Appellants' NoAs, p48, paragraph 113.1.
[206] Steven McMahon, WS2 (April 2026), paragraphs 242 and 253.
[207] Steven McMahon, WS2 (April 2026), paragraph 233.

5.210 As to the criticism that it wrongly assessed that companies 'aim down', GEMA pointed to several justifications for its view that all network companies aimed down to some degree in their OE proposals.

(a) The fact that there is no single correct way of assessing the scope for OE means that any assessment is based on network companies' judgements, which creates scope for them to provide lower rather than higher estimates, and doing so does not necessarily amount to making misrepresentations to GEMA.[208]

(b) There is little incentive for network companies to propose a stretching OE estimate, or a mechanism to reward ambition in this respect.[209]

5.211 GEMA also denied that its approach incentivises companies to underestimate the OE target in the future. Companies will need to evidence and justify the OE levels they include in their business plans for future price controls.[210]

5.212 As to Cadent's complaint that GEMA's approach was inconsistent with RIIO-2, GEMA argued that this is misplaced. GEMA said its assessment in respect of OE in its decision was specific to the RIIO-3 submissions and grounded in the evidence before it.[211]

*CMA assessment*

5.213 We have considered the parties' submissions. Our finding is that GEMA did not err as alleged in setting the lower bound of the range it used in setting the OE challenge. There are four reasons for that finding.

5.214 First, GEMA did not misconstrue NGET's OE business plan submission when using it to set the lower bound of its plausible range. Network companies are required to submit a single OE figure, and NGET used the upper bound of the plausible range provided by its adviser, Frontier. It is plain that GEMA understood that NGET's OE submission was informed by the top of Frontier's range.[212]

5.215 Nor was GEMA irrational to use NGET's business plan figure in the way it did. GEMA did not consider NGET's business plan OE figure in isolation. It also took account, for example, of the broader Grant Thornton range (of which 0.7% was the mid-point, rather than the top), the methodological choices used by the network companies' advisers in their estimates and regulatory precedent, as well as its

[208] GEMA Response to Appellants' NoAs p47, paragraph 108.
[209] GEMA Response to Appellants' NoAs p47, paragraph 111.
[210] GEMA Response to Appellants' NoAs p47, paragraph 112.
[211] GEMA Response to Appellants' NoAs p47, paragraph 112.
[212] The FD states 'The lower bound of 0.7% represents the highest estimate submitted by one of the network companies in its business plan', GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.23.

view about the GDNs' insulation from economic headwinds (and we find it was not wrong to do so).

5.216 As to the Grant Thornton range, Grant Thornton itself, as expert adviser to GEMA, recommended that its broad range of 0.1-1.3% was relatively wide and that it would be reasonable to set the OE challenge at, at least, the most ambitious level proposed by the companies.[213] GEMA has explained how it had regard to other companies' business plan data submissions and their consultants' evidence which ranged between 0.2 and 0.8%.[214] It did so by considering the methodologies used by the companies (and their advisers) in their submissions and also noting that (with the exception of SHET) none of the companies proposed a figure at or close to the lower bound of Grant Thornton's broad range.

5.217 GEMA did not agree with some of the methodological approaches used by the network companies' advisers, including Frontier. It took the view that the companies' advisers' ranges were conservative.[215] We agree that it was entitled to do so. In particular, it was open to GEMA to take different views from Frontier in developing the range for NGET on, in particular, the use of economy-wide measures in its analysis and the weight to be placed on pre and post GFC data.

5.218 As can be seen by the different approaches taken by the companies' and GEMA's advisers in deriving their OE ranges, the relevant methodological choices are a matter of judgement. The economy-wide measures used by Frontier are – by their nature – less relevant to the GDNs than the targeted comparator sectors. Choosing to use them is, as Frontier's analysis shows, liable to produce a lower productivity estimate than if only more relevant comparators are assessed. Specifically, excluding the economy-wide estimates (while retaining the use of both VA and GO estimates) results in an average of 0.95% productivity gain in the period 1996-2019 which is higher than Frontier's preferred estimate of 0.7% for the same period. Similarly, for the reasons we set out in paragraphs 5.243 to 5.258 below, GEMA was not wrong to place different weights on pre- and post-GFC data in setting different ends of the relevant range.

5.219 One contention the Appellants have made is that GEMA wrongly considered only NGET's incentive to 'aim down' its OE estimate and not whether it did in fact 'aim down' in selecting 0.7% as the estimate in its business plan submission. They said that the NGET figure in fact 'aimed up' (for the reasons set out in paragraph 5.204 above).

5.220 We agree that some of the methodological decisions taken by Frontier (for example, the inclusion of the VA measure) resulted in a higher OE estimate than had it not made those choices. Frontier estimated 0.6% for 1996-2019 on the

[213] GEMA Response to Appellants' NoAs, p23, paragraph 37.5.
[214] GEMA Response to Appellants' NoAs, p43, paragraph 102.4.
[215] Steven McMahon, WS2 (April 2026), paragraph 94.

basis of only targeted sectors and a GO metric of productivity. GEMA was, however, entitled to regard Frontier's inclusion of economy-wide sectors in its analysis as resulting in a significant downwards adjustment to the overall OE range (including the upper bound) that Frontier put forward.[216]

5.221 It does not follow, therefore, that GEMA should have considered the NGET submission as the highest possible OE figure achievable by the network companies. There was other evidence and there were other factors which comprise relevant considerations that GEMA was entitled, indeed needed, to take into account, and it did so. GEMA considered the evidence holistically and did not place weight solely (or inappropriately) on NGET's assessment.[217]

5.222 Second, we do not find that GEMA was wrong in using NGET's estimate as the lower bound of its plausible range on the basis that the estimate discounted post-GFC data. NGET's estimate directly incorporates post-GFC data (see Figure 1.4), so GEMA's use of the NGET estimate as the lower bound of its range did place some weight on such data.

5.223 GEMA was setting a range within which to set the OE challenge. It had a judgement to make about the weight to place on post-GFC data as part of an evaluative exercise taking account of a number of relevant considerations. It was entitled in setting a range to select one point – in this case the upper end of the range – which placed less weight on that data and the other – in this case the lower end of the range – which placed more weight on that data. In that exercise, where it also took account of other quantitative factors (as set out in the preceding paragraphs, for example) and given the uncertainty in measuring historical productivity, not ascribing precise weights to that data at both ends of the range does not make GEMA wrong.

5.224 Third, GEMA took into account that network companies are incentivised to set their OE figure lower to maximise their totex allowance.[218] It was reasonable in the relevant circumstances for GEMA, when considering the weight to give to network companies' business plans, to have regard to the companies' incentives to propose conservative OE figures.

5.225 We do not agree with the Appellants' arguments that GEMA needed to prove that the network companies had in fact 'aimed down'. Setting the OE challenge is not an objectively verifiable factual exercise and instead involves a series of choices and judgements (both by GEMA, and by the network companies in the values they submitted in their business plans). We accept that, given that setting the OE challenge is an exercise of judgement and there is no objectively verifiable single

[216] The inclusion of the economy wide measures results in the upper bound equally 0.7%. If only the targeted comparator sectors were included, then the upper bound would be 0.9-1.0%.
[217] GEMA Response to Appellants' NoAs , p46, paragraph 106.
[218] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.23.

OE 'number', GDNs have an in-principle incentive to maximise their totex allowance by 'aiming down' on their OE estimate.[219] This does not mean that such submissions would misrepresent what the companies consider achievable or amount to regulatory gaming,[220] nor that the business plan process, which requires that GDNs' submissions are accurate and ambitious, is undermined.[221] It is a reflection of the incentives and interests that are relevant when a GDN has to make subjective choices between different, but similarly plausible, alternatives, when formulating their business plans and estimating an OE figure.

5.226 In this case, NGET submitted an OE estimate of 0.7%. That indicates that it thought such a target was achievable. That other network companies submitted lower OE estimates is consistent with them making conservative choices and having aimed down. That, in turn, supports a view that 0.7% is the least that might be expected of the network companies in terms of OE in this case.

5.227 Fourth, neither do we find that GEMA's approach is at odds with its approach at RIIO-2 or otherwise at odds with its statutory duty in respect of regulatory principles.

5.228 GEMA's duty is to carry out its functions having 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 to any other principles appearing to it to represent the best regulatory practice.[222] It is consistent with those principles for GEMA to have regard to the circumstances and evidence that are relevant at a particular time, and it will always be the case that companies will need to evidence and justify the OE estimates they include in their business plans.[223]

5.229 We do not find that GEMA's approach – taking account of an incentive GDNs have to aim down – creates a perverse incentive for GDNs contrary to the relevant regulatory principles. Those principles require GEMA, as it did, to have regard to a range of relevant considerations and evidence. The Appellants for their part have, as they have noted, obligations to submit accurate information in business plans. In those circumstances, it does not follow that GEMA necessarily will assume aiming down, and GDNs should not assume that either.

5.230 On those bases, it was not unreasonable for GEMA to consider that a point estimate of 0.5% (the OE point estimate submitted by all GDNs) is too low and it was not wrong for GEMA to use 0.7% as the lower bound of its range.

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[219] Steven McMahon, WS2 (April 2026), paragraph 247.
[220] Steven McMahon, WS2 (April 2026), paragraph 247.
[221] Cadent NoA, paragraphs 76 to 79.
[222] Section 4AA 5(a) GA86.
[223] Steve McMahon, WS2 (April 2026), paragraph 251.

**Did GEMA err in the weight it placed on pre- and post-GFC data?**

5.231 GEMA placed different levels of weight on pre- and post-GFC data in setting the lower and upper bounds of its plausible OE range:[224]

(a) GEMA's lower bound of 0.7% was set primarily (but not solely) using NGET's OE business plan submission (see paragraphs 5.196 to 5.197 above).

(b) The upper bound was directly informed by Grant Thornton's analysis of TFP growth for the 1997-2007 (pre-GFC) period.[225]

5.232 When assessing this question, we have considered the parties' submissions relating to the weight placed on pre- and post-GFC data in Grant Thornton's analysis of the EU KLEMS data and to the network companies' business plans. We note there are also submissions relating to independent forecasts which cover the weight placed on post-GFC evidence. We have considered these latter submissions when assessing GEMA's approach to independent forecasts as a qualitative factor (see sub-section below in consideration of the qualitative evidence).

5.233 In response to our PD, the Appellants submitted that the approach to independent forecasts described in the preceding paragraph is wrong. They submitted that independent forecast evidence is, alongside the historical productivity analysis, the most important quantitative evidence available to GEMA because:

(a) it comes from reputable economic institutions;[226]

(b) there has been a structural break, driven by economy-wide factors, and economy-wide productivity growth is expected to average 0.38% over 2024-30, increasing to at most 0.49% once accounting for public sector drag;[227]

(c) considering independent forecasts as a qualitative factor was inconsistent with the approach that the CMA took in the PR24 appeal;[228] and

(d) the forward-looking evidence that can be derived from the independent productivity forecasts is highly relevant in circumstances where the fundamental analytical question when reviewing the quantitative historical evidence is the choice of time period on which to base the OE challenge.[229]

[224] Note we set out here how GEMA used the quantitative evidence to set the bounds of its plausible range. GEMA also set out in its FD that where it selected its OE challenge within the range would also depend on its assessment of the qualitative factors. We consider these in more detail below.
[225] NGN NoA paragraph 156; SGN NoA, paragraphs 440 and 473; WWU NoA paragraph 5.31(a).
[226] Appellants' Joint Response to RIIO-3 OE PD, paragraph 138.
[227] Appellants' Joint Response to RIIO-3 OE PD, paragraph 138.
[228] Appellants' Joint Response to RIIO-3 OE PD, paragraph 139.
[229] Appellants' Joint Response to RIIO-3 OE PD, paragraph 164.

5.234 We do not agree that GEMA was wrong to consider independent forecasts as qualitative evidence. It was reasonable for GEMA to consider the Quantitative Matter is about deriving a plausible range using the EU KLEMS data (taking account of the network companies' submitted business plans). In that context, GEMA was not wrong to rely on independent forecasts as part of the qualitative assessment it undertook in order to set the OE challenge within that range. We consider whether the way GEMA used those forecasts in that assessment was wrong in paragraphs 5.383 to 5.400 below.

*Appellants' submissions*

5.235 The Appellants submitted that there is clear economic evidence of a slowdown in productivity growth since 2008 and that GEMA's OE assumption was inconsistent with, failed to take account of, and/or failed to have sufficient regard to, this slowdown.[230] Cadent described the period post-2008 as a new normal of persistent low productivity growth.[231]

5.236 Cadent and NGN both referred to the OBR's Briefing paper No.9 - Forecasting Productivity from November 2025. They noted in particular the OBR's views that:

> [Cadent] [i]t now appears more likely that the slowdown was also underpinned by structural changes with impacts lasting into the medium term. […] given that UK productivity growth remains subdued some 17 years on from the financial crisis, a strong rebound – like those seen after previous shocks – appears increasingly unlikely.[232]
>
> [NGN] continued weakness of [labour] productivity means it becomes less and less likely that the kind of substantive and rapid bounce back to productivity growth rates that the UK has witnessed in the wake of previous shocks is going to materialise over the medium term.[233]

5.237 A particular criticism of GEMA's approach to the use of pre-and post-GFC data – made by all of the Appellants – was that GEMA was said to have derived the top end of its OE range solely from the 1997-2007 estimate of 1.3%. This, the Appellants submitted, effectively disregards all other evidence provided to GEMA by its adviser, Grant Thornton.[234]

5.238 A further specific criticism of GEMA's approach – again made by all of the Appellants – was that GEMA was said to have changed methodology since RIIO-2

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[230] Cadent NoA, paragraph 80; NGN NoA, paragraphs 148 to 157.
[231] Cadent NoA paragraph 81.
[232] Cadent NoA paragraph 81(c).
[233] NGN NoA, paragraphs 151(b).
[234] Cadent NoA paragraph 83. NGN NoA, paragraphs 154. SGN NoA, paragraphs 440. WWU NoA, paragraphs 5.27.

in an important respect. It was contended that, at RIIO-2, GEMA used a longer reference range (1997 to 2016) for the calculation of its OE range and, in using a shorter period in RIIO-3, it wrongly changed methodology so as to place less weight on post-GFC data in RIIO-3 than it did in RIIO-2.[235]

5.239 Cadent and WWU submitted that GEMA's quantitative approach departs from regulatory precedent, and that its methodology differs from that adopted in RIIO-2. They criticised the departure from CEPA's approach in constructing its OE range, and said that, had GEMA updated that methodology from RIIO-2, the resulting range would have been 0.1-0.5%.[236]

5.240 In response to our PD, the Appellants submitted that the CMA had not properly scrutinised GEMA's limited use of post-GFC data.[237] The Appellants submitted that GEMA's approach of placing no weight on post-GFC data at the upper bound relied on two assumptions that ran contrary to the facts and evidence (namely the insulation hypothesis and the assumption that the RIIO-3 period will see productivity benefits from technological developments akin to those observed in the late 1990s and early 2000s). As a result, the Appellants submitted, the top of GEMA's range of 1.3% was unachievable on any reasonable assessment. [238]

5.241 The Appellants contended that it was wrong to use a solely pre-GFC window to set the top of the range given that, in their submission, the relevant data is outdated. Moreover, they said, even if that approach were legitimate, a proper range would also need to use solely post-GFC data at the bottom to avoid an unjustifiable asymmetric skew.[239]

*GEMA's submissions*

5.242 GEMA disagreed that it made an error with regard to the weight it placed on pre- and post-GFC data. It submitted that the upper bound figure (rather than point estimate) was selected on the basis that the 1997-2007 period was a complete business cycle during which productivity growth followed a relatively stable trend.[240] GEMA acknowledged that a full reversal to pre-GFC growth is unlikely and that it did not consider the top-end of its narrow plausible range to be a reasonable OE figure for RIIO-3.[241]

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[235] Cadent NoA, paragraph 85 to 87. NGN NoA, paragraphs 155 to 156. SGN NoA, paragraphs 442 to 444. WWU NoA, paragraphs 5.21 and 5.25.
[236] Cadent NoA, paragraph 86 to 87. WWU NoA, paragraph 5.24.
[237] Appellants' Joint Response to RIIO-3 OE PD, paragraph 155.
[238] Appellants' Joint Response to RIIO-3 OE PD, paragraph 156.
[239] Appellants' Joint Response to RIIO-3 OE PD, paragraph 162.
[240] GEMA Response to Appellants' NoAs, p23, paragraph 49.2.
[241] GEMA (2025) Draft Determinations – Overview p. 94 paragraph 8.34.

*CMA assessment*

5.243 When assessing whether GEMA erred in the weight it placed on pre- and post-GFC data we have considered:

(a) whether GEMA placed any weight on post-GFC data in setting its plausible range; and

(b) if GEMA did place weight on post-GFC data, whether that weight was sufficient.

5.244 As to the first of the points, we have separately considered GEMA's approach to setting the upper and lower bounds of its plausible range.

5.245 GEMA's 1.3% upper bound placed no weight on post-GFC data. In that regard, two points are relevant:

(a) the choice of time periods used when analysing historical TFP data, including the weight given to pre- and post-GFC data, is a subjective methodological choice (as we set out in paragraph 5.191 above); and

(b) GEMA was setting a range within which to set the OE challenge, making judgements about the weight to place on post-GFC data as part of an evaluative exercise taking account of a number of relevant considerations, and in the setting of one end of that range it was entitled to place less weight on that data.

5.246 As to how GEMA exercised that choice, it relied, as it was entitled to do, on input from its expert adviser, Grant Thornton. Grant Thornton's analysis set out what constituted a complete business cycle (1997 – 2007). This informed its, and GEMA's, choice of time periods.

5.247 In using that time period, GEMA drew parallels between the rapid development of the IT sector in the late 90s and early 00s and recent developments in technology (notably AI) which are liable to lead to greater efficiency in the RIIO-3 period.[242] Specifically, the IT sector's productivity improved by 5.2% p.a. in the period 1997-2007 and 2.9% p.a. in the period 2010-2019 (as shown in Grant Thornton's average TFP GO estimates in Figure 1.5 above). For the reasons we set out in paragraphs 5.248 to 5.250 below (where we consider the weight GEMA placed on pre-GFC data), we do not consider that GEMA was wrong to place no weight on the post-GFC average of the Comparator Sectors in setting the upper bound of its range. It was not unreasonable for GEMA in setting one end of the range to take a more optimistic approach.

[242] GEMA Response to Appellants' NoAs, p19, paragraph 44.

5.248 The lower bound of GEMA's range, however, was set with reference to, amongst other things, NGET's business plan submission of 0.7% OE. NGET's submission relied on Frontier Economics' analysis of TFP growth over the 1996-2019 period to derive a part of its range. In taking account of that submission, GEMA necessarily, and rightly, therefore, placed some weight on the post-GFC data that informed that analysis.

5.249 Accordingly, in making its judgement and setting a range GEMA took account of pre- and post-GFC data. In so doing, GEMA took into account relevant considerations to which it was entitled to have, and should have had, regard.

5.250 As to the second of those points, in paragraph 5.243(b), (that if GEMA did place weight on post-GFC data, whether that weight was sufficient) we recognise that GEMA's approach to setting its plausible range varies by using 1997-2007 KLEMS average of the Comparator Sectors in setting the upper bound but using, amongst other things, business plan submissions, which place weight on both pre- and post-GFC data, to set the lower bound.

5.251 We note that GEMA considered neither the lower nor upper bound of its plausible range to be the points at which it should set the OE challenge. This is implied by GEMA in its DD insofar as its states that:[243]

(a) GEMA did 'not consider it [1.3%] reasonable as an OE target for RIIO-3'; and

(b) the lower bound of 0.7% is a 'relatively pessimistic' OE target, placing weight only on quantitative factors.

5.252 GEMA's approach discloses no error, in our view. The pre- and post-GFC data is a relevant consideration to which GEMA must have had regard. It did so.

5.253 In this case, the setting of a plausible range that placed some weight on the post-GFC data at the bottom end and none on the post-GFC data for the average of the Comparator Sectors at the top was a judgement rooted in (i) GEMA's assessment of the quantitative evidence in front of it (including from Grant Thornton and networks' advisers); (ii) its conclusions on insulation and (iii) the potential for future technological developments. We have considered (i) in paragraphs 5.213 to 5.230. We refer to (ii) and (iii) in turn below.

5.254 With regard to insulation, it was open to GEMA to place less weight on post-GFC data on the basis that network companies were partially insulated from the post-GFC slowdown in productivity. We take that view for the reasons we set out above in relation to the Insulation Matter.

[243] GEMA (July 2025), RIIO-3 Draft Determinations Overview Document, p94 paragraph 8.34.

5.255 As to the parallels GEMA drew between future technological developments (in the use of AI) and technological developments observed in the late 1990s and early 2000s.

(a) To support their arguments, the Appellants referred to OBR analysis.[244] That analysis concluded that, in the central estimate, AI could improve TFP by 0.2% per year over a five-year period.

(b) We note that in the same paper, however, in addition to the central scenario referenced by the Appellants, the OBR also included a range of scenarios (conservative, transformative and optimistic scenarios). The OBR concluded that these scenarios suggest AI could increase annual productivity growth by between 0.0% and 0.8% over the next decade.[245]

(c) We also note the results of a Decision Maker Panel survey referenced by the BoE. Those results disclose expectations that AI will reduce employment by around 0.4% per year and boost labour productivity by around 0.9% per year over the next three years.[246]

5.256 The benefits of AI, their timing and the impact on future productivity, and the estimation of such productivity generally, are inherently uncertain. The material referred to in the preceding paragraph, however, indicates that GEMA was not wrong to:

(a) draw on evidence from different time periods for its plausible range, including a time period which fully excludes the post-GFC period;

(b) take a more optimistic view when setting the top end of its range; and

(c) place weight on future AI developments, and their parallels with technological developments in the late 1990s and early 2000s, when considering the pre- and post-GFC data, at least for the purpose of setting the relevant range.[247]

5.257 In terms of regulatory precedent, the methodology used by GEMA and Grant Thornton as its adviser to set the OE figure for the RIIO-3 period follows the same overarching principles as that one used by GEMA to compute the OE figure for the RIIO-2 period, insofar as it suggests a plausible OE range using EU KLEMS historical data.[248] GEMA's decision to place less weight on post-GFC data in RIIO-

[244] Appellants' Joint Response to RIIO-3 OE PD, paragraph 159. The Appellants noted that the OBR estimates that AI will contribute 0.2 percentage points to TFP by the end of the forecast horizon (2030).
[245] OBR (November 2025), Briefing paper No.9 forecasting productivity, paragraphs B.14 and B.15.
[246] Bank of England (July 2026), Bank of England Monetary Policy Report July 2026, p24.
[247] We do not accept that it was procedurally unfair to the Appellants, as alleged (see Appellants' Joint Response to RIIO-3 OE PD, paragraph 159(b)) that the CMA did not request evidence on the impact of AI on productivity in the RIIO-3 period from the Appellants. It was for the Appellants to put forward such evidence that they relied upon to demonstrate that GEMA's decision was wrong.
[248] CEPA RIIO-GD2 and T2 Cost Assessment – Advice on Frontier Shift policy for Final Determinations (2020), p.14 onwards.

3 than RIIO-2 is a reflection of the evidence before it in the later review period and the judgements it made about that evidence.

5.258 Those points being so, we judge that GEMA did not fail to comply with its statutory duty to carry out its functions having 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 to any other principles appearing to it to represent the best regulatory practice.[249] It is consistent with those principles for GEMA to have regard to the circumstances and evidence that are relevant at a particular time, and to have taken similar approaches to those it adopted in the past but to depart from those, in the weighting of evidence, where that evidence supports doing so (as we find it to have done in this case).

**Conclusions on the Quantitative Matter**

5.259 In light of the foregoing analysis, and having considered the parties' responses to our PD, we find that GEMA's decision was not wrong on account of its approach to quantitative evidence in setting the OE challenge, in particular that GEMA did not err as alleged by the Appellants:

(a) in either its approach to the network companies' business plan data or in its weighting of pre- and post-GFC data; nor, accordingly,

(b) in its use of quantitative evidence in setting the OE challenge.

5.260 However, we also find that, while GEMA was not wrong in setting its range, the top and bottom ends of that range were not equally reasonable points at which it might set the OE challenge for RIIO-3. An OE challenge at the top end of the range would assume that GDNs can deliver productivity improvements last seen on average pre-GFC. While not impossible, GEMA rightly concluded that an OE challenge set at that end of the range was unlikely to be justified. This finding had implications for GEMA's assessment of the qualitative factors and its judgement of the point at which to set the OE challenge. We consider this further in our assessment of the Qualitative Matter.

5.261 As to each of the statutory grounds pleaded by the Appellants, we do not find that those are satisfied on account of GEMA's approach to the quantitative evidence. Given that, for the purposes of section 23D(4) GA86, we may allow an appeal on one or more of the statutory appeal grounds, and that we go on to find that GEMA's decision was wrong in law in respect of the Qualitative Matter,[250] we do

[249] Section 4AA(5)(a) and (b) GA86.
[250] Under section 23D(4)(e) GA86. See paragraphs 5.445 and 5.446 below.

not set out any further analysis. Doing so is not necessary. In taking our approach, we have had regard to the overriding objective.[251]

## The Qualitative Matter: use of qualitative evidence in setting the OE challenge

### Statutory question for determination on the Qualitative Matter

5.262 NGN submitted that the decision was wrong, owing to GEMA's reliance on qualitative factors that are unsubstantiated and/or spurious, on all of the statutory grounds set out in paragraph 5.47 above.[252] SGN submitted that the decision was wrong, owing to GEMA's reliance on qualitative factors which are unevidenced and based on flawed reasoning, on the statutory grounds (a), (b), (c), and (e) in that paragraph.[253] Cadent submitted that the Decision was wrong on grounds (a), (b), (c) and (e), stating that GEMA's pinpointing of the OE challenge, within its plausible range, at 1% was not reasonably open to it on its assessment of the qualitative factors cited in the FD.[254] WWU submitted that the Decision was wrong on grounds (a), (b), (c), and (e), contending that the qualitative adjustments GEMA applied are either unsupported by evidence, irrational, or replicate errors previously rejected by the CMA.[255]

5.263 Accordingly, the statutory question for our determination of the Qualitative Matter is:

> Was the decision wrong because, in its qualitative assessment of various factors it used in setting the OE challenge, GEMA failed to have proper regard to, or to give appropriate weight to, the matters in section 23D(4)(2) of the GA86 (its principal objective and statutory duties); made the decision based on an error of fact; made licence modifications that failed to achieve the stated effect; or made a decision that was wrong in law.

### Subsidiary questions

5.264 Taking account of the Appellants' submissions, the subsidiary questions for our assessment, in order to determine the statutory question on the Qualitative Matter, are whether the decision was wrong because[256] GEMA:

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[251] In particular, the considerations in the overriding objective to dispose of appeals efficiently and at proportionate cost (CMA ELMA Rules, Rule 4.1).
[252] NGN NoA, paragraphs 40, 43 and 205.
[253] SGN NoA, paragraphs 25, 30(iv), 32, 447, 467, 472 to 473.
[254] Cadent NoA, paragraphs 63(e), 64, 100.
[255] WWU NoA, paragraphs 3.2(c), 6.15, 6.51, 6.56, 9.4.
[256] We have included below those submissions on 'wrong' pleaded specifically in relation to GEMA's assessment of qualitative evidence.

(a) Failed properly to have regard to, and/or to give appropriate weight to, its **statutory duties**:

(i) To have proper regard to the need to secure that licence holders are able to finance their licensed activities under section 4AA(2)(b) of the GA86 in that, in relation to **innovation benefits**, whether they are already embedded in company baselines is directly material as to whether there is double counting. This issue was unresolved at RIIO-2 and GEMA has made the same adjustment in RIIO-3 without addressing this question. To the extent that unresolved double counting produces an allowance that does not properly reflect the costs a GDN requires to finance its licensed activities, GEMA failed properly to have regard to, or to give appropriate weight, to the need to secure that licence holders are able to finance their licensed activities.[257]

(ii) To have regard to the principles of **regulatory best practice**[258] under sections 4AA(5A) of the GA86 in that:[259]

(1) in relation to **UK regulatory precedent**, in adopting the same 1% OE challenge at RIIO-3 as at RIIO-2, without having had proper regard to the underlying body of evidence afresh, GEMA departs from genuine regulatory precedent and, accordingly, its Best Practice Duty;[260] or

(2) by failing to provide adequate reasons for dismissing or affording inadequate weight to evidence properly supporting a lower OE level, GEMA acted inconsistently with principles of best regulatory practice under which regulatory activities should be transparent, accountable and consistent. [261]

(b) Failed to achieve the **stated effect** of the licence modifications that resulted from the decision in that it misdirected itself when it argued that the OE challenge should be 'stretching'. The purpose of the OE challenge is not to set a stretching target beyond what can be supported by any reasonable view of the relevant evidence about how individual companies can be driven to improve their efficiency by changing how they operate. The effect of setting the OE challenge too high is to underfund all companies for their efficient costs, rather than to drive any improvements in efficiency. As a consequence, GEMA's decision failed to achieve its stated effect of setting

[257] WWU NoA, paragraphs 6.37 and 9.4.
[258] GEMA's duty to have regard to the principles of best regulatory practice 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 represent the best regulatory practice.
[259] NGN NoA, paragraph 43(b)(ii). WWU NoA, paragraph 4.17(c).
[260] Cadent NoA, paragraph 99(f).
[261] NGN NoA, paragraphs 77 and 205.

an efficiency target to reflect the productivity improvements that even the most efficient company can achieve.[262]

(c) Made **errors of fact** in that it:

(i) Relied on a series of qualitative factors that are either unsubstantiated and/or spurious in support of its OE figure of 1%.[263]

(ii) Treated OE as a stretching target or incentive mechanism, which mischaracterises its statutory and analytical function. By proceeding on that mischaracterisation, GEMA's determination of OE was based wholly or partly on an error of fact.[264]

(iii) Relied on **innovation and IT&T investment** to justify a higher figure, which repeats an error which the CMA found to be wrong in the RIIO-2 determination on the basis that the benefits were not incremental and were already reflected in baseline allowances. GEMA has provided no explanation of how its RIIO-3 position is distinguishable.[265]

(d) Made **errors of law** in that it:

(i) Relied on a series of qualitative factors that are either unsubstantiated and/or spurious in support of its OE figure of 1% (which represents an error of law, including a failure to take into account relevant considerations),[266] as well as of fact.[267] A reasonable interpretation and weighting of qualitative factors does not support an OE parameter of 1%, which implies that GDNs can substantially outperform the wider economy for productivity.[268]

(ii) Considered the VA metric on a qualitative basis that does not support an OE parameter of 1%. The EU KLEMS data directly incorporates VA measures and results in a range of -0.1% to 0.7%.[269] GEMA's own adviser, Grant Thornton, concluded that the use of the GO measure is more appropriate in the context of forecasting OE.[270]

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[262] NGN NoA, paragraphs 195 and 205.
[263] NGN NoA. paragraph 205.
[264] WWU NoA, paragraph 6.56(a).
[265] WWU NoA, paragraphs 6.56(b) and(c), and 9.4.
[266] NGN NoA, paragraph 92, SGN NoA, paragraphs 115, 368, 408 and 473. Cadent NoA, paragraph 67. WWU NoA, paragraph 6.51. Appellants joint response to RIIO-3 OE PD, paragraph 188.
[267] NGN NoA. paragraph 205. SGN NoA, paragraphs 411 and 414. Appellants joint response to RIIO-3 OE PD, paragraph 182.
[268] SGN NoA, paragraph 467.Cadent NoA, paragraph 98.
[269] NGN NoA, paragraph 203. SGN NoA, paragrapghs 462-463. Cadent NoA, paragraph 99(a).
[270] Cadent NoA, paragraph 99(a).

(iii) Treated OE as a **stretching target or incentive mechanism**, thereby mischaracterising or misdirecting its statutory and analytical function.[271]

(iv) Relied on **innovation funding** to justify a higher figure, thus repeating an error which the CMA found to be wrong in the RIIO-2 determination on the basis that the benefits were not incremental and were already reflected in baseline allowances. It provided no explanation of how its RIIO-3 position is distinguishable;[272]

(v) Had no basis to assume (or has not provided evidence) that benefits from historical **innovation funding** (which was restricted to supporting Net Zero and vulnerable customers)[273] and/or **IT&T and/or D&D investment** would translate into improved efficiency or reduced cost[274] or drive faster OE growth in the gas distribution sector than in the wider economy. Such funding is already embedded into baseline business cost forecasts and has limited application to improve the efficiency of GDNs' core business activities.[275] In addition, GEMA has not shown that such investment or spend on innovation funding is proportionally higher than would be expected for comparable organisations in the wider economy.[276]

(vi) Like other regulators and practitioners, was unable reliably to estimate the size of the effect of **embodied and disembodied technical change** and how this effect could distort the estimates derived from EU KLEMS data.[277]

(vii) Relied on recent **regulatory precedent** as justification for setting a 1% OE challenge, but such precedent is mixed. The CMA, in the PR24 redetermination process, determined[278] that the frontier shift target (comparable to GEMA's OE challenge) should be set at 0.7%. It is wrong to conceive of regulatory precedent as comprising the adoption of a particular figure rather than the consistent application of a particular approach or methodology. It is appropriate to depart from regulatory precedent OE levels where the evidence supports this outcome [279]

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[271] WWU NoA, paragraphs 6.6ff, 6.15(c).and 9.4. NGN also made this point but considers that it is relevant to the statutory ground of 'stated effect'.
[272] Cadent NoA, paragraph 99(d). WWU NoA, paragraphs 6.31 to 6.32ff, 6.56(b) and (c) and 9.4.
[273] Cadent NoA, paragraph 99(d). SGN describes that such funding was for Advanced Leakage Detection and Data Platform Leak Analytics technologies which improved environmental protection and safety (SGN NoA, paragraph 449).
[274] NGN NoA, paragraph196-198 and 199-201. SGN NoA, paragraphs 449-454. WWU NoA, paragraph 6.20.
[275] NGN NoA, paragraphs 191 and 197-198. SGN NoA, paragraphs 454 and 458. Cadent NoA, paragraph 99(c). WWU NoA, paragraph 6.21.
[276] NGN NoA, paragraphs 197 and 200. SGN NoA, paragraph 452. WWU NoA, paragraphs 6.24-6.30.
[277] NGN NoA, paragraph 204. Cadent NoA, paragraph 99(b). SGN NoA, paragraph 460.
[278] The final determination has now been published, which confirms the frontier shift target at 0.7%.
[279] Cadent NoA, paragraph 99(f). SGN NoA, paragraphs 465-467.

(viii) Referred to the **OE challenges submitted by the networks,** but these cannot support an assumption of 1%. The network companies' assumptions range between 0.1 to 0.7%, well below 1%.[280]

(ix) Referred **to independent forecasts of economy-wide productivity** trends but these do not support a figure of 1%.[281]

**Our analytical approach**

5.265 GEMA used qualitative factors to set the OE challenge within the range it had derived from quantitative evidence. Specifically, GEMA used qualitative factors to move up from 0.7% (the bottom of its range) to 1.0%.[282] We consider below how GEMA used those factors to justify that material increase. In doing so, we keep in mind the following point.

5.266 That is, while we find that GEMA was not wrong in setting its plausible range, it did not consider that both ends of that range were similarly plausible or likely points at which it might set the OE challenge. GEMA acknowledged that in its decision documents and at the hearing:

(a) In its DD, GEMA described the bottom end of the range as, '…representing a relatively pessimistic view of the outlook for the OE improvements possible in RIIO-GD3,' but the upper end as not, '…. reasonable as an OE target for RIIO-3.'[283]

(b) At the hearing, GEMA said, '….. looking at the evidence in the round 0.7% was the starting point because that was the number that we got to by removing some of the Grant Thornton range ….'[284]

5.267 As set out in paragraph 5.260, the asymmetry of the reasonableness of the range had implications for GEMA's assessment of the qualitative factors and its judgement of the point at which to set the OE challenge. Given that it did not consider each end of its range to be equally likely points at which to set the OE challenge, it was not open to GEMA to conclude that, in weighing the qualitative factors, it could make a simple balanced judgement to select the mid-point. GEMA instead needed to give consideration to the relative impact of the qualitative factors, individually and as a whole, in judging whether and where to set the OE challenge above 0.7%.

[280] Cadent NoA, paragraph 99(g).
[281] Cadent NoA, paragraph 99(h).
[282] Transcript of the hearing for Ongoing Efficiency session on 17 June 2026, p28, lines 13 to 18.
[283] GEMA (July 2025), RIIO-3 Draft Determinations Overview Document, paragraph 8.34.
[284] Transcript of the hearing for Ongoing Efficiency session on 17 June 2026, p28, lines 13 to 18.

5.268 We consider each of the following qualitative factors in turn in this section, summarising the evidence and setting out our conclusions.[285] We do so in the context of NGET's methodology for its 0.7% estimate (see paragraph 5.197) and the way GEMA set the bottom end of its range.

(a) GO and VA productivity measures.

(b) Embodied and disembodied technical change.

(c) IT&T and D&D spending.

(d) Innovation funding.

(e) Regulatory precedents.

(f) Independent forecasts.

(g) Insulation.

(h) Characterisation of OE as a 'stretching' target.

5.269 We also include within our assessment several countervailing qualitative factors raised by the Appellants during the course of the appeal.

5.270 As in other parts of our decision, we start our assessment with considering the analytical issues. We have set out that assessment in two parts. First, we have considered whether, for each qualitative factor, GEMA was wrong to have considered that factor at all (ie in principle). Second, we consider *how* GEMA took the factors into account and whether it erred in the way it did so. We then use our assessment of these issues to help us answer the statutory questions for determination.

5.271 In conducting our analytical assessment, we have taken into account the Appellants' submissions about GEMA's consideration of qualitative factors in their response to our PD. Key amongst those submissions were:[286]

(a) an OE parameter of 0.7% is the wrong starting point from the quantitative evidence as 0.5% represents an already highly stretching parameter. A starting point of 0.7% must therefore recognise that, not only is there a 43% gap to 1% (moving from 0.7% to 1%), but the fact of starting from 0.7% is already itself highly aggressive. This means that qualitative factors have a higher evidential hurdle to legitimately push towards 1%.[287]

[285] Note this list aligns with that set out in paragraphs 1.24 and 1.25 of the 'Background to the RIIO-3 decision on OE' section except it does not include (1) the time period of the EU KLEMS data or (2) company submitted OE assumptions as our assessment of these is set out in the 'Use of quantitative evidence in setting the OE challenge' section above.
[286] Appellants joint response to RIIO-3 OE PD, paragraphs 229 to 233.
[287] Appellants joint response to RIIO-3 OE PD, paragraphs 172, 173 and 231.

(b) the majority of GEMA's qualitative factors double-count considerations that have already been relied upon by GEMA and the CMA (in its PD) to, in the Appellants' opinion, (wrongly) inflate the quantitative starting point;[288]

(c) the assessment of these qualitative factors is asymmetric, failing to account for relevant downside considerations, including countervailing factors not considered by GEMA, that may reduce/eliminate/reverse any net-uplift;[289] and

(d) there is no reasonable evidential basis to support that the qualitative factors, individually or collectively, produce a material net-upside to bridge the gap between a 1% OE and the output of quantitative evidence. [290]

5.272 The conclusions we go on to reach, for the reasons we set out, are.

(a) GEMA was not wrong to take the qualitative factors into account. It was entitled to take each of them into account in principle.

(b) However, in taking the qualitative factors into account, GEMA took into account an irrelevant consideration (ie through the mis-specification of labour productivity forecasts as TFP forecasts) and did not take into account some relevant ones (in particular, downside factors[291] that should have informed its exercise of its judgement and the BoE 2024 data that should have been part of the independent forecast data to which GEMA had regard). In that regard, in its overall assessment of the qualitative factors, GEMA made an error of law.

**Did GEMA err in its use of the GO and VA measures?**

5.273 Analysis of productivity from the EU KLEMS dataset can be measured using the GO or VA measures. These productivity measures are defined as follows.

(a) GO reflects the combined productivity of (i) activities delivered in-house by a given sector and (ii) activities delivered by a sector's supply chain.

(b) VA reflects only productivity of activities delivered in-house (capital and labour) within a given sector and excludes the value of the intermediate inputs (ie inputs supplied by the supply chain) necessary for production.

[288] Appellants joint response to RIIO-3 OE PD, paragraphs 174(a) and 229.
[289] Appellants joint response to RIIO-3 OE PD, paragraphs 174(b) and 230.
[290] Appellants joint response to RIIO-3 OE PD, paragraphs 174(d) and 232.
[291] By downside factors we mean that for some of the qualitative factors (which GEMA considered pointed towards a higher OE challenge), GEMA should also have had regard to relevant considerations which may have suggested a lower OE challenge.

*Appellants' submissions*

5.274 Three of the Appellants (Cadent, NGN and SGN) submitted that GEMA erred in its approach to the impact of different productivity metrics because:

(a) it stated that it gave qualitative consideration to VA measures of productivity[292] but the benchmark range from the EU KLEMS data (-0.1% to 0.7%)[293] directly incorporates VA measures. Therefore, GEMA's consideration of VA on a qualitative basis does not support an OE parameter of 1%;[294] and

(b) GEMA's own adviser, Grant Thornton, concluded that the use of the GO metric is more appropriate than the use of the VA metric, in the context of forecasting OE.[295] [296]

5.275 Frontier Economics (adviser to NGN, SGN and WWU) submitted that its approach identifies a benchmark range from the EU KLEMS data that directly incorporates VA measures. Frontier stated that it did not consider GEMA's use of VA on a qualitative basis could justify an OE parameter of 1.0%.[297]

5.276 NERA (adviser to Cadent) submitted that it was not necessary to consider the VA TFP metric, that Grant Thornton dismissed, as a qualitative factor. NERA added that Grant Thornton's first report presented its estimates of productivity growth using the VA measure instead of the GO measure, showing that VA productivity growth was still only 0.2 per cent over 2010-19, compared to 0.1 per cent using the GO productivity measure. NERA concluded that even consideration of the VA measure showed that there has been a structural slowdown in productivity growth since the GFC.[298]

5.277 In their closing statement at the hearing, the Appellants submitted that GEMA effectively double counted VA in setting the OE challenge at 1%.[299] They made similar points in response to our PD, noting that we identified that 'there is a risk of overlap in using VA both in the quantitative range and as a qualitative factor'. The Appellants added that it was logically inconsistent for the CMA to (provisionally) conclude that GEMA was entitled to place some additional weight on the VA measure in addition to the 50% already built into NGET's business plan and the 0.7% floor of the range. They further submitted that this 'double count is

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[292] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.52.
[293] The -0.1% to 0.7% is based on Frontier's analysis of the EU KLEMS data submitted alongside NGN, SGN and WWU's Notices of Appeal. The -0.1% to 0.7% is based on the same methodology Frontier used in its report for NGET's business plan submission (see paragraph 5.188) using updated EU KLEMS data.
[294] NGN NoA, paragraph 203. SGN NoA, paragraph 463.
[295] Cadent NoA paragraph 99(a).
[296] The Appellants also made this point in their response to the PD. Appellants joint response to RIIO-3 OE PD, paragraph 202.
[297] Frontier Economics (2026), Assessment of GEMA's approach to setting ongoing efficiency at RIIO-3, paragraph 5.15.
[298] NERA (2026), Expert Report on GEMA's Approach to Ongoing Efficiency at RIIO-GD3, paragraph 108.
[299] The Appellants' Closing Statement, June 2026 paragraph 19.

compounded by the failure to consider that VA is only applicable to part of totex'.[300]

5.278 The Appellants also submitted in their response to our PD that:

(a) '…. the GO measure is a more appropriate proxy for the OE' to be applied to totex and it is, therefore, logically inconsistent to afford greater than 50% cumulative weight (ie the majority weight) on the VA measure;[301] and

(b) no uplift is justified given that independent forecasts (expressed in VA terms) expect productivity growth of 0.5%, and that post-GFC, GO and VA TFP measures are very similar (and are both close to zero).[302]

*GEMA's submissions*

5.279 GEMA submitted that, in its DDs, it explained that it intended to take into account the 'potentially lower measurement in the VA metric which tends to return higher estimates of TFP ranges in growth accounting analysis (all else being equal)'.[303] GEMA maintained that giving qualitative consideration to the VA measures of productivity is appropriate, given the regulatory precedent in RIIO-2 and RIIO-ED2.[304]

5.280 GEMA submitted that it was recognised by the CMA in the RIIO-2 appeals that there was no single correct metric to use for the growth accounting analysis. Accordingly, GEMA said, it was at the very least reasonably open to it to have regard to the fact that the VA metric would have an upward effect on Grant Thornton's range and thus also on GEMA's narrower range.[305]

5.281 In response to the Appellants' submission that the Frontier range of -0.1% to 0.7% directly incorporates the VA measure, [306] GEMA submitted that the Frontier Appeals Report analysis did not undermine its decision to give consideration to the VA metric as a qualitative factor when choosing an OE point estimate from within its own range.[307] GEMA said so on the basis that that the upper bound of Frontier's estimate is based on Frontier's own choices of time periods and comparator sectors that differ markedly from those adopted by Grant Thornton and GEMA.

[300] Appellants joint response to RIIO-3 OE PD, paragraph 178(a).
[301] Appellants joint response to RIIO-3 OE PD, paragraph 178 and in the summary table below paragraph.
[302] Appellants joint response to RIIO-3 OE PD, paragraphs 202 and 203 and in the summary table below paragraph 234.
[303] GEMA Response to Appellants' NoAs, p51, paragraphs 123 and 123.1.
[304] GEMA Response to Appellants' NoAs, p52, paragraph 125.1.
[305] GEMA Response to Appellants' NoAs, p55 paragraphs 132, 133.
[306] NGN NoA paragraph 203; SGN NoA paragraph 463.
[307] GEMA Response to Appellants' NoAs, p55, paragraph 134.

*CMA assessment*

5.282 In its FD, GEMA briefly summarised responses from network companies relating to GEMA's use of qualitative factors. In respect of VA, that summary of responses was that the companies had said:

> Ofgem is wrong to give weight to VA TFP measures of productivity in its decision. Alternatively, some respondents argued that it is 'sensible (and consistent with regulatory practice) to incorporate both measures', but that more detailed explanation was needed on which factors are impacted by VA.[308]

5.283 GEMA stated in its FD, that it maintained its 'view that giving qualitative consideration to VA measures of productivity … is appropriate, given regulatory precedent in RIIO-2 and RIIO-ED2.'[309]

5.284 It appears to us that GEMA's plausible range considered both GO and VA measures to some extent. While the Grant Thornton range uses the GO measure only, GEMA also considered the network companies' business plan submissions to define the lower bound. Of those, NGET's 0.7% OE business plan submission was based on a Frontier report[310] which considered the VA measure directly in its range (see paragraph 5.189 above which set out the methodology informing NGET's 0.7% submission).

5.285 Here we consider whether GEMA was wrong in its assessment of the VA measure. Specifically, was GEMA wrong to take account of both the VA and GO measures in its analysis?

5.286 There is no consensus between regulators and expert advisers on whether to use the VA or GO measure (ie one or the other) when assessing OE. In that regard:

(a) Grant Thornton noted that the GO metric more appropriately reflected the OE measure, as GO relates to the total value of production rather than just the VA component, and is therefore consistent with the application of the OE challenge to total expenditure. Grant Thornton also noted, however, that there were benefits of the VA measure, as VA estimates are provided directly in the EU KLEMS dataset whilst GO needs to be derived from the VA metric based on intra-sector flows of intermediate inputs, which increases the risk of measurement error.[311]

[308] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.41.
[309] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.52.
[310] Frontier Economics (2024), Ongoing efficiency at RIIO-T3, Table 1 p5.
[311] Grant Thornton (2025), Independent Report on Ongoing Efficiency, p20.

(b) NGN's, SGN's and WWU's adviser, Frontier Economics, placed equal weight on the VA and GO measures in its analysis of the EU KLEMS data.[312]

5.287 Rather, it appears to us, there is agreement between the Parties that, in principle, it is reasonable to have some regard to the VA measure when setting the OE challenge. Noting that common ground, we find no error that GEMA had regard to the VA measure as a qualitative factor. It was open to GEMA to have regard to the VA measure as a qualitative factor in deciding whether to select an OE challenge higher than 0.7%.

**Did GEMA err in its approach to embodied and disembodied technical change?**

5.288 Embodied technical change refers to productivity gains that arise when new technology is physically embedded in capital assets (eg new equipment, IT systems, or infrastructure). Disembodied technical change relates to gains from better use of existing assets (eg improved processes, management, or know-how).

*Appellants' submissions*

5.289 Three of the Appellants (NGN, SGN and Cadent) submitted that GEMA was wrong when it referred to the potential for embodied and disembodied technical change which is not already contained in GEMA's productivity estimates because:

(a) GEMA does not provide evidence to support its position[313] or respond to evidence against that position.[314]

(b) There are no reliable estimates of the size of this possible change and of how much it might distort the EU KLEMS data (and in any event it would not justify an OE assessment of 1%).[315]

(c) The TFP metric already includes disembodied technical change.[316]

5.290 The Appellants further submitted that GEMA's qualitative reliance on the VA metric and embodied technical change ignores the duplication between these two considerations, which they submitted the CMA recognised at RIIO-2 when it held that 'the reliance on embodied technical change should be commensurate with the reliance on GO measures'.[317]

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[312] Frontier Economics (2026), Assessment of GEMA's approach to setting ongoing efficiency at RIIO-3, Table 5, p74.
[313] SGN NoA, paragraph 460.
[314] NGN NoA, paragraph 204 – that networks may have less opportunity to benefit from embodied technical change given their assets have longer asset lives and are not replaced frequently.
[315] NGN NoA, paragraph 204. SGN NoA, paragraphs 460-461. Cadent NoA, paragraph 99(b).
[316] Cadent NoA, paragraph 99(b).
[317] The Appellants' Joint Reply to GEMA's Response, dated 8 May 2026, paragraph 44. Quote taken from CMA RIIO-2 Final Determination, Volume 2B, paragraph 7.259.

5.291 Cadent[318] and NGN[319] referred to analysis from Economic Insight which stated that:

(a) It considered embodied technical change is more likely captured by its chosen comparators' TFP data than other comparator sets and the comparators generally have more scope to benefit from embodied change than gas networks.[320]

(b) Gas networks are characterised by long-lived assets, which are not replaced frequently. There is therefore more limited opportunity for them to benefit from new equipment with new technology (than industries with a higher asset replacement rate / utilising more high-tech assets).[321]

5.292 In response to the PD, the Appellants submitted that the CMA's analysis implied that the CMA does not consider embodied technical change can carry strong weight. They contended that any weight the CMA considered should have been placed on embodied technical change is further undermined by the following:[322]

(a) the double-counting between embodied technical change and VA;

(b) that embodied technical change cannot be quantified;

(c) the combination of double-counting and countervailing downside factors do not permit a lack of embodied technical change quantification to provide a reasonable basis for uplifting the OE materially beyond comparator / economy-wide evidence; and

(d) that the CMA does not appear to have performed an interrogation of the extent of the weight given to embodied technical change by GEMA.

5.293 Lastly, the Appellants further submitted that no uplift/no material uplift should be applied in the setting of the OE challenge on the basis of embodied technical change once VA is appropriately accounted for.[323]

*GEMA's submissions*

5.294 GEMA submitted that there is no basis for criticism of the way it relied on the potential for embodied and disembodied technical change to result in further efficiency.[324]

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[318] Cadent NoA, paragraph 99(b).
[319] NGN NoA, paragraph 204.
[320] Economic Insight (2024), Ongoing efficiency for gas networks at RIIO-3, p66.
[321] Economic Insight (2024), Ongoing efficiency for gas networks at RIIO-3, p67-68.
[322] Appellants joint response to RIIO-3 OE PD, paragraph 205.
[323] Appellants joint response to RIIO-3 OE PD, summary table below paragraph 234.
[324] GEMA Response to Appellants' NoAs, p55, paragraph 135.

5.295 GEMA submitted that it took account of the potential for embodied technical change[325] due to the potential for cost savings that can be realised by companies making quality improvements in factors of production, such as tools, equipment, materials or technology. GEMA further submitted that it is particularly important to take account of this factor as the potential for productivity growth may be underestimated if it is excluded, for example by relying on GO based metrics only. GEMA submitted that such metrics might underestimate the potential for cost savings that can be achieved by network companies when quality improvements in the factor inputs are considered.[326]

5.296 GEMA submitted that embodied technical change was particularly important within the context of RIIO-3 where technological change is anticipated.[327] GEMA noted that embodied technical change would likely include improvements that arise because the inputs, such as the tools, equipment, materials or technology used by network companies, improve over time.[328]

5.297 GEMA stated, in response to suggestions from three of the Appellants[329] that it had not quantified (or sought to quantify) the impact of embodied technical change, that such change is incapable of precise measurement. GEMA further submitted that this is, not least, because the productivity gains associated with it are unknowable in advance. GEMA said that it was therefore appropriate, and consistent with previous practice, for it to have qualitative regard to this factor as part of its in-the-round assessment. GEMA stated that it was appropriate to place some weight on such change, as part of that assessment, as a factor liable to support an increase in an OE figure relying only on GO metrics.

5.298 GEMA did not agree with Economic Insight's analysis of embodied technical change for two reasons.[330]

(a) Embodied technical change refers to improvements in the inputs used by GDNs (eg the labour and machines used for replacement), while the volume or frequency of renewal is an output. Therefore, the fact that asset replacement may be infrequent is not directly relevant: what matters for embodied technical change is inputs not outputs.

(b) RIIO-3 is expected to see a material increase in repex costs compared to RIIO-2. The fact that increases in expenditure on inputs to the production process are expected in RIIO-3 suggests that there should be no fewer

[325] GEMA submitted that it did not take account of disembodied technical change as a qualitative factor. GEMA Response to Appellants' NoAs, p56, footnote 49.
[326] GEMA Response to Appellants' NoAs, p55, paragraph 136.
[327] GEMA Response to Appellants' NoAs, p56, paragraph 137.
[328] Steven McMahon, WS2 (April 2026), paragraph 265.
[329] GEMA Response to Appellants' NoAs, p 56, paragraph 138 (GEMA referenced the submissions of Cadent, NGN and SGN).
[330] Steven McMahon, WS2 (April 2026), paragraph 266.

opportunities for embodied technical change than in the periods covered by previous price controls.

5.299 As to disembodied technical change, GEMA stated that because TFP, as estimated in the EU KLEMS database, is the unexplained part of output growth after accounting for all measured inputs, it inherently captures such change. GEMA added that disembodied technical change is taken into account in its consideration of the range derived from the growth accounting analysis.[331] In other words, GEMA did not take disembodied technical change into account in its qualitative assessment when setting the point of the OE challenge.

5.300 GEMA submitted in response to the PD that the overlap between accounting for TFP measured using VA and accounting for embodied technical change is only partial: the overlap between embodied technical change and VA does not extend to capital-embodied technical change, ie improvements in the quality of capital goods such as machinery. EU KLEMS, GEMA said, constructs capital input as quality-adjusted capital services, so capital-embodied change sits in the capital term and not within the VA residual. GEMA concluded that, since the overlap between VA and embodied technical change is only partial, had it not considered both it would have underestimated the opportunities for OE.[332]

5.301 GEMA also submitted that the Appellants accepted that embodied technical change cannot be measured and therefore it was not wrong for GEMA to consider that the effect of embodied technical change had not already been wholly captured elsewhere.[333]

*CMA assessment*

5.302 There is agreement between the Parties that disembodied technical change should not be considered as a qualitative factor when setting the OE challenge. Such change is already captured in the analysis of the EU KLEMS data. On the basis of the evidence put to us in its witness evidence, we accept that GEMA did not consider it as such a factor.[334]

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[331] Steven McMahon, WS2 (April 2026), paragraph 102.
[332] GEMA's Response to CMA RIIO-3 OE PD, paragraph 20.
[333] GEMA's Response to CMA RIIO-3 OE PD, paragraph 21.
[334] RIIO-3 Appeals 51706 - GEMA - Second Witness Statement of Steven McMahon dated 23 April 2026 - Confidential.pdf - Documents, in which Mr McMahon stated: '*At §8.52 of the FDs, we said that giving consideration to the potential for both embodied and disembodied technical change is appropriate, and is consistent with regulatory precedent in RIIO-2 and in RIIO-ED2. We refer to "the potential for both embodied and disembodied technical change" at 8.52 of the FDs. We mean that we give qualitative consideration to the potential for embodied technical change, in addition to the regard that has been had to disembodied change in arriving at the Grant Thornton Range (and that is why the second sentence of §8.52 mentions the importance of only embodied technical change). Disembodied technical change is already included within the EU KLEMS data and, therefore, within our assessment of the range derived from that dataset. However, we consider that embodied technical change (ie improvements that arise because the input such as tools, equipment, materials or technology used by network companies improve over time) is a qualitative factor to consider when setting the efficiency challenge. This is because the potential for productivity growth may be*

5.303 The question is whether GEMA should not have considered embodied technical change in its qualitative assessment because doing so would overlap with its assessment of the VA measure (and/or was wrong in how it did so – to which we return later in this section).

5.304 GEMA's FD contained a summary of network companies' responses to the use GEMA had proposed to make of embodied technical change in its qualitative assessment. That summary was: 'Ofgem should not give weight to embodied and disembodied technical change, as the size of the effect cannot be reliably estimated.'[335]

5.305 GEMA stated in its FD that it maintained its:

> …. view that giving qualitative consideration to … the potential for … embodied … technical change is appropriate, given regulatory precedent in RIIO-2 and RIIO-ED2. We consider that embodied technical change (ie related to quality improvements in inputs) is important when setting the efficiency challenge, as the potential for productivity growth may be underestimated if it is excluded.[336]

5.306 We agree with the Appellants' submission (see paragraph 5.290) that the reliance on embodied technical change should be commensurate with the reliance on the GO measure. That submission is in line with the CMA's findings in other regulatory appeals, such as RIIO-2. In such appeals, the CMA has found that GEMA may place weight on both the VA and GO measures and, accordingly, take account of the potential for embodied technical change. The extent reliance is placed on embodied technical change (that is not otherwise accounted for by consideration of the VA measure) should be consistent with the reliance placed on the GO measure (which does not capture embodied technical change). This is because the VA measure already captures the fact that the labour force has access to higher quality intermediate inputs. However, the overlap between the VA metric and embodied technical change is only partial as the VA metric will not reflect improvements in the quality of capital inputs.

5.307 We accordingly find no error in GEMA's statement nor in the fact that it had regard to embodied technical change as a qualitative factor. It was entitled to consider, as a matter of regulatory judgement, how such change should be reflected in the OE challenge.

5.308 Neither do we find that Economic Insight's analysis (see paragraph 5.291), which the Appellants commissioned at the business plan stage of the RIIO-GD2 process,

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*underestimated if it is excluded. However, we note that disentangling the effects of embodied and disembodied technical change is very difficult in practice. We therefore account for embodied technical change in a qualitative manner.'*

[335] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.41.

[336] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.52.

demonstrates that GEMA erred.[337] There are some important shortcomings in that analysis:

(a) Economic Insight included in the comparator sectors it used in its analysis the 'Total Industries' group. Those sectors are less relevant, and liable to capture less embodied technical change, than the targeted comparator set used by GEMA in its assessment.

(b) Infrequent asset replacement does not mean that there is less scope for labour and machinery inputs (which are used to deliver the replacement of assets) to benefit from productivity gains. Such improvements in productivity gains relating to inputs can be captured by embodied technical change which is not already reflected in the VA metric.

**Did GEMA err in its approach to IT&T and D&D spending?**

5.309 In its FD, GEMA stated that it had allowed £2.2bn of costs for IT&T investments across the electricity transmission, gas transmission and gas distribution sectors, with a further almost £900m allowed for D&D – combined this accounts for 11% of ex ante totex allowances in RIIO-3.[338]

5.310 GEMA stated that network companies had justified these investments as part of their IT&T and D&D strategies, which include ambitions to leverage AI and machine learning to drive efficiencies, deliver world-leading technology to remain at the frontier of efficiency, foster cultures of continuous improvement, and adopt coordinated approaches to drive efficiency across business units.[339]

*Appellants' submissions*

5.311 The Appellants submitted that GEMA was wrong to rely on IT&T and D&D spending to justify an OE challenge of 1% because GEMA did not provide evidence[340] to support such a reliance.[341]

(a) NGN stated that GEMA had not provided any evidence that the IT&T spend by network companies is proportionally higher than the expected level for comparable companies in the wider economy; nor had GEMA set out any

[337] Economic Insight (2024), Ongoing efficiency for gas networks at RIIO-3, section 4B.
[338] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.53.
[339] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.53.
[340] For example, that the IT&T spend by network companies is proportionally higher than the expected level for comparable companies in the wider economy and/or the materiality of the productivity gains it believes will be delivered by future spend. NGN NoA, paragraph 200(a). SGN NoA, paragraphs 456 and 458. Cadent NoA, paragraph 99(c). WWU NoA, paragraphs 6.44-6.48.
[341] NGN NoA, paragraphs 200(a), 200(b). SGN NoA paragraphs 457-458. Cadent NoA, paragraph 99(c).

assessment of the materiality of the productivity gains it believes will be delivered by future spend.[342]

(b) SGN submitted that while GEMA implied that the inclusion of technology savings in business plans does not result in double-counting, as the OE will apply to 'unknown OE gains', the regulator did not evidence or articulate which types of gains it expects could come to light, or justify why unknown technology efficiencies will manifest at a rate that is reasonably expected to enable gas networks to produce productivity growth materially beyond the wider UK economy.[343, 344]

(c) Cadent submitted that there was no evidence high levels of IT&T and D&D spending across the electricity transmission, gas transmission and gas distribution sectors would drive faster OE growth in those sectors than in the wider economy.[345]

(d) NGN and SGN submitted that any estimated cost savings are likely already baked into RIIO-3 allowances through business plan submissions such that reliance on this qualitative factor would likely amount to double counting.[346]

(e) NGN, Cadent and WWU submitted that a material portion of IT&T and D&D spend would not relate to investment in the sorts of systems and technologies that are expected to result in any improvements to productivity.[347] SGN submitted that nearly 40% of its IT&T expenditure is driven by investment in cyber security, which is critically important but which does not drive improved efficiency.[348][349]

5.312 During the hearing, SGN stated that GEMA was inconsistent in its treatment of IT&T and D&D funding as a qualitative factor. SGN noted that:[350]

(a) the total RIIO-3 GDN totex is roughly the same as the total gas and electricity transmission RIIO-3 totex;

(b) of the £900 million of D&D funding referenced by GEMA, only 10% is for GDNs;

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[342] NGN NoA, paragraph 200(a). The Appellants also made a similar point in their PD response. Appellants joint response to RIIO-3 OE PD, summary table below paragraph 234.
[343] SGN NoA paragraph 458
[344] The Appellants also stated in response to our PD that known benefits from IT&T and D&D funding had already been included in the business plans. Appellants joint response to RIIO-3 OE PD, paragraph 182(a).
[345] Cadent NoA, paragraph 99(c)
[346] NGN NoA, paragraph 200(b). SGN NoA, paragraph 458.
[347] NGN NoA, paragraph 200(c). - Cadent NoA, paragraph 99(c). WWU NoA, paragraphs 6.40-6.43.
[348] SGN NoA, paragraph 457.
[349] The Appellants also noted that cyber security accounts for c. 40% of SGN's IT&T spend. Appellants joint response to RIIO-3 OE PD, paragraph 208.
[350] Transcript of the hearing for Ongoing Efficiency session on 17 June 2026, p133, lines 14 to 26.

(c) there is a 30% difference in IT&T funding between GDNs compared with the gas and electricity transmission companies (with the GDNs receiving lower IT&T funding); and

(d) there is therefore an inconsistency between the IT&T and D&D funding available and the level of weight given to this as a qualitative factor for GDNs compared with the gas and electricity transmission companies for which GEMA also determined an OE challenge of 1%.

5.313 In response to our PD, the Appellants submitted that the question for the CMA to consider is whether the evidence supports that the actual IT&T and D&D funding awarded by GEMA can be reasonably considered to translate into 'unknown' productivity gains that individually or collectively support a material increase in the OE to 1%, from a starting point that already reflects the extent to which competitive sectors' investments in IT&T and D&D have/are expected to translate into productivity gains.[351]

5.314 The Appellants further submitted that GEMA's and the CMA's PDs failed to account for double-counting and downside factors.[352] These are:

(a) double-counting with EU KLEMS comparator sectors (which was used to calculate GEMA's 0.7% floor and which included the I&C and Professional, Scientific and Technical Services sectors) and independent forecasts (which additionally account for the benefits of AI);[353]

(b) that known benefits have already been included in business plans such that this qualitative factor relates to unevidenced unknown benefits;

(c) that the specific IT&T projects cited by GEMA and the CMA in its reasoning on IT&T, namely Advanced Leakage Detection and Digital Platform Leakage Analytics, contain countervailing factors, which GEMA's RIIO-3 FD and the CMA's PD are silent on;

(d) countervailing evidence that AI has less potential to affect GDNs' core, physical, site based-activities relative to the wider economy.[354]

5.315 The Appellants also submitted that, whilst we acknowledged in the PD that non-financial benefits may flow from IT&T and D&D spend, we did not properly assess their scale. Nor, it was said, did we consider that a substantial proportion of GDNs' investment is valuable but will not translate into increased productivity (eg

[351] Appellants joint response to RIIO-3 OE PD, paragraph 206.
[352] Appellants joint response to RIIO-3 OE PD, paragraphs 178, 182 and 207.
[353] Appellants joint response to RIIO-3 OE PD, summary table below paragraph 234.
[354] Appellants joint response to RIIO-3 OE PD, paragraph 182(a).

reiterating the point referred to above that cyber security accounts for c. 40% of SGN's IT&T spend).[355]

5.316 Another contention the Appellants made was that, while we conceded that GDNs did receive proportionally less IT&T and D&D funding than the transmission companies, we then dismissed this point. The Appellants stated that, if all qualitative factors are the same across sectors, except IT&T, which clearly should be weighted less for GDNs, then the PD's assessment implied a lower overall OE for GDNs relative to the transmission companies.[356]

*GEMA's submissions*

5.317 GEMA submitted that while the Appellants had argued that their spending will not result in efficiency gains, but is instead targeted at other issues, that contention is undermined by the Appellants' own business plans. In those plans, they made explicit links between their proposed IT&T and D&D investments and improvements in operational efficiency.[357]

5.318 GEMA further submitted that the argument that some of the Appellants' IT&T spending will be committed to cyber security was factually inaccurate. The IT&T investments which GEMA took into account as a qualitative factor did not incorporate any spending on cyber security.[358]

5.319 In response to two Appellants'[359] arguments that taking account of IT&T investment amounts to double-counting, GEMA submitted that the Appellants' assertions misunderstand the nature of the OE parameter. The parameter is designed to capture unknown efficiencies.[360]

*Intervener's submissions*

5.320 Citizens Advice submitted that GDNs have historically been information-light and this is evidence that they have more to gain from AI than financial services, which have already embedded AI-driven efficiencies. It stated that this gives weight to the argument that GDNs are in a position to outperform other sectors.[361]

5.321 Citizens Advice also submitted that evidence suggested that AI-driven productivity advancements are highly adoptable by GDNs. The emergence of AI in utility

[355] Appellants joint response to RIIO-3 OE PD, paragraph 208.
[356] Appellants joint response to RIIO-3 OE PD, paragraph 209.
[357] GEMA Response to Appellants' NoAs, p 57, paragraph 141.
[358] GEMA Response to Appellants' NoAs, p 58 paragraph142.
[359] WWU and SGN.
[360] GEMA Response to Appellant's NoAs, p58 paragraph 143.
[361] Citizens Advice application for permission to intervene, paragraph 30.

operations represented a structural shift in the cost of delivery, it said, which is likely to accelerate efficiency gains.[362]

5.322 Citizens Advice further submitted that AI has the potential to accelerate productivity increases across network companies, which may not be captured in external productivity estimates. It said that real world evidence from industry pilots[363] suggests that AI interventions within network companies specifically can drive field productivity improvements of 20-30%.[364]

*CMA assessment*

5.323 GEMA's FD summarised network companies' responses to the proposal GEMA made in its DD to rely on IT&T and D&D as a qualitative factor when setting the OE challenge. That summary was that 'Ofgem is incorrect in arguing that network company spending on IT&T and D&D spending will drive efficiency improvements through their businesses'.[365]

5.324 GEMA also commented in its FD on, and ultimately dismissed, the possibility of overlaps between (i) IT&T and D&D funding as a qualitative factor and (ii) GEMA's consideration of similar funding elsewhere within the RIIO-3 totex allowances. It did so on the basis of the distinction between known and unknown efficiencies. It said:

> Cadent and NGET both state that they have already accounted for the productivity gains associated with their proposed IT&T investments within their RIIO-3 forecasts. However, given they have identified these efficiencies ahead of time, we consider these to be consistent with catch-up efficiency, rather than unknown OE gains, avoiding any double counting of productivity improvements.[366]

5.325 In addition, in its FD, GEMA briefly noted Cadent's and SGN's disagreement with GEMA that the adoption of Advanced Leakage Detection and Digital Platform Leakage Analytics technologies would lead to increases in productivity. GEMA rejected that view on the basis that the technologies are still in their infancy and that significant funding for testing and adopting has been made available in RIIO-GD3.[367]

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[362] Citizens Advice application for permission to intervene, paragraph 31.
[363] Citizens Advice referred to a pilot run by McKinsey & Company which found that smart-scheduling through the use of AI improved field productivity and reduced waste by 20-30%. McKinsey & Company, Smart scheduling for utilities | McKinsey, January 2023.
[364] Citizens Advice application for permission to intervene, paragraph 5.
[365] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.41.
[366] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.53.
[367] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.44.

5.326 We agree with GEMA that, in principle, it is reasonable to assume that IT&T and D&D funding should result in some unknown efficiencies over time. Any such efficiencies would be in addition to those known efficiencies which have been incorporated into GDNs' business plans.

5.327 We accordingly find no error that GEMA had regard to the IT&T and D&D funding as a qualitative factor that it took into account in setting the OE challenge.

**Did GEMA err in its use of past innovation funding as a justification for a higher OE challenge?**

5.328 GEMA stated that, during RIIO-2, it provided £563m of innovation funding available through the Strategic Innovation Fund and £262m (in 2023/24 prices) available through the Network Innovation Allowance. GEMA added that while it cannot quantify the efficiencies it expects to be achieved from previous innovation funding, it was reasonable to expect productivity benefits from these historical investments to occur during RIIO-3.[368]

*Appellants' submissions*

5.329 The Appellants submitted that GEMA was wrong because it placed weight, as a justification for a higher OE for RIIO-3, on the network companies' ability to benefit from efficiency gains stemming from historical customer-funded innovation funding in previous price controls. The Appellants submitted that this assumption: (i)

(a) double counts as any estimated cost savings will already have been baked into GDN business plan submissions for RIIO-3 totex;[369]

(b) was not based on evidence,[370] including that the innovation funding was aimed at delivering environmental and safety improvements, not delivering direct totex savings;[371] and

(c) was inconsistent with the CMA's RIIO-2 finding (where the CMA rejected GEMA's explicit innovation uplift to OE).[372, 373]

[368] GEMA (July 2025), RIIO-3 Draft Determinations Overview Document, paragraph 8.33.
[369] NGN NoA, paragraph 197(c). Cadent NoA, paragraph 99(c). WWU NoA, paragraph 6.19.
[370] For example, evidence that innovation spend by network companies is proportionally higher than innovation spend for comparable organisations in the wider economy and/or on the materiality of the productivity gains which can be delivered by this spend. Submissions about GEMA's failure to evidence were made by the following: NGN NoA, paragraph 197(a). Cadent NoA, paragraph 99(d).
[371] NGN NoA, paragraph 197(b). SGN NoA, paragraphs 449 and 551. WWU NoA, paragraph 6.24-6.25.
[372] NGN NoA, paragraphs 196-198. SGN NoA, paragraph 452. Cadent NoA, paragraph 99(d). WWU NoA, paragraphs 6.31-6.33.
[373] The Appellants reiterated this point in response to our PD, noting that there is no reasonable basis to find that the evidence since RIIO-GD2 has changed such that an increase to the OE on the basis of innovation funding is justified – whether that uplift is specifically quantified by GEMA or not. Appellants joint response to RIIO-3 OE PD, paragraph 212.

5.330 In response to our PD, the Appellants submitted that firms operating in competitive sectors also have means by which they can share the benefits of R&D via the sale or licensing of patents. The Appellants further submitted that sharing of benefits in innovation / R&D spending is therefore not unique to regulated utilities.[374]

5.331 The Appellants submitted that the CMA overturned an innovation uplift applied by GEMA in RIIO-2 on the basis that GEMA had failed to compare network R&D spend with the wider economy or comparator sectors, or the proportion of the R&D spend that was spent on cost reduction rather than other benefits. The Appellants further submitted that the same errors were made by GEMA in RIIO-3.[375]

5.332 The Appellants also submitted that initial funding received for early-stage innovation may not produce the scale of benefits expected, may incur greater deployment costs than anticipated, or the timeline for benefits may be delayed or predominantly non-financial.[376] They further submitted that the CMA's PD contains no acknowledgement of the evidence that RIIO-2 innovation funding was 'specifically targeted' at longer-term energy systems transition and vulnerable customer support and that the CMA made no attempt to compare or contrast this position with the wider economy or comparator sectors.[377]

5.333 The Appellants further submitted that the alleged 'multiplier effect' from shared innovation benefits would be impacted by the same limitations on productivity gains from past innovation spend as are described in the paragraph above.[378]

5.334 The Appellants submitted that the same double-counting logic applies for innovation funding, as the Appellants described is applicable to IT&T, ie Grant Thornton's Comparator Sectors also engaged in similar spending via R&D.[379]

5.335 Lastly, the Appellants submitted that there is no evidence that GDNs spend more or benefit more from innovation projects than competitive benchmarks, especially once downside factors are considered.[380]

*GEMA's submissions*

5.336 GEMA submitted that its view that innovation funding at previous price controls can be expected to translate into efficiency gains during RIIO-3 is based on the

[374] Appellants joint response to RIIO-3 OE PD, paragraph 213.
[375] Appellants joint response to RIIO-3 OE PD, paragraphs 211 and 212.
[376] Appellants joint response to RIIO-3 OE PD, paragraph 1822(c).
[377] Appellants joint response to RIIO-3 OE PD, paragraph 212(b).
[378] Appellants joint response to RIIO-3 OE PD, paragraph 213.
[379] Appellants joint response to RIIO-3 OE PD in the summary box above paragraph 211.
[380] Appellants joint response to RIIO-3 OE PD in the summary box above paragraph 211 and summary table below paragraph 234.

'common sense' proposition that innovation benefits typically take time to materialise.[381]

5.337 GEMA submitted that there was no basis to suggest that taking account of innovation in the RIIO-2 period risked double-counting. It stated that innovation benefits from projects funded in earlier price controls are inherently uncertain, often realised only after deployment decisions are taken. Therefore, it would not have been possible for companies to fully reflect gains from such historical innovation funding in their RIIO-3 business plans.[382]

5.338 In response to one of the Appellants, GEMA submitted that it did not adopt the same approach to innovation at RIIO-3 as it did at RIIO-2. GEMA submitted that, consistent with the CMA's findings in the RIIO-2 appeals, it did not quantify the contribution of innovation funding to OE at RIIO-3 and did not apply any specific 'innovation uplift'.[383]

*Intervener's submissions*

5.339 Citizens Advice submitted that a regulated sector allows each network company's progress to be shared across all other network companies, despite each being individually funded to innovate. According to Citizens Advice, this means regulated network companies receive a 'multiplier effect' from their innovation spending, leading to their productivity increases by default outperforming the competitive sector.[384]

*CMA assessment*

5.340 In its FD, GEMA summarised responses from network companies to GEMA's use of innovation as a qualitative factor. The summary of the responses was that, 'Ofgem is incorrect in arguing that historical innovation funding will benefit network companies through future efficiency gains'.[385]

5.341 The Appellants contended that GEMA erred in its approach to considering innovation as a qualitative factor on the basis that the CMA found GEMA's OE innovation uplift to be wrong at RIIO-2.[386] However, GEMA's RIIO-3 approach was to consider innovation as one of a number of qualitative factors tending to support a higher OE challenge. This differs from the explicit quantified uplift for innovation that GEMA applied to the 'core' OE challenge in RIIO-2. It does not follow, we

[381] GEMA Response to Appellants' NoAs, p60 paragraph 145.4.
[382] GEMA Response to Appellants' NoAs, p60 paragraph 145.6.
[383] GEMA Response to Appellants' NoAs, p62 paragraph 147.
[384] Citizens Advice application for permission to intervene, paragraph 4
[385] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.41.
[386] CMA (2021), RIIO-2 CMA appeals final determination – volume 2B, paragraph 7.807.

conclude, that, in taking innovation into account as a qualitative factor at all in RIIO-3, GEMA was in error.

5.342 The Appellants stated that the benefits of past innovation funding are uncertain. Our view is that this is consistent with the unknown efficiency gains which the OE challenge seeks to capture. If all the efficiency gains from past innovation funding were known, they would already be reflected in the GDNs' business plan totex submissions (but they were not).

5.343 In many respects, there are parallels between IT&T and D&D and innovation factors. However, an additional feature of the innovation factor is that GEMA provided relevant funding in previous price controls. That funding can reasonably be expected to translate into efficiencies during RIIO-3.

5.344 We agree with Citizen's Advice's submissions that regulated companies can benefit from a 'multiplier effect' from innovation funding. This is because the GDNs can share the benefits of past innovation funding projects between them.

5.345 Whilst we agree with the Appellants that the Comparator Sectors will also undertake R&D, they do so at risk, without guaranteed funding for that spend (which the GDNs have). We do not agree with the Appellants that firms operating in competitive sectors will share innovation benefits to the same extent as regulated utilities. There is a fundamental difference between regulated utilities sharing innovation benefits with other firms (against which they do not compete) compared with firms operating in competitive markets who will have an incentive not to share innovation benefits with firms which they compete against and who must only do so in compliance with competition law.

5.346 We recognise that some benefits of innovation funding are non-financial and not all historical innovation funding will result in cost savings overall. However, the fact there are also non-financial benefits of past innovation funding, does not mean that GEMA erred in having regard to innovation as a qualitative factor when setting the OE challenge. It was entitled to do so for the reasons set out above.

**Did GEMA err in its interpretation of regulatory precedents?**

5.347 GEMA and other regulators, such as Ofwat and the CMA, have considered the appropriate OE challenge to set in other price control decisions in recent years. GEMA used these previous decisions as a qualitative factor when setting its RIIO-3 OE challenge.

*Appellants' submissions*

5.348 Three of the Appellants (SGN, Cadent and WWU) submitted that GEMA was wrong in its interpretation of regulatory precedents because.

(a) It is wrong to conceive of regulatory precedent as comprising the adoption of a particular figure and/or it is appropriate to depart from regulatory precedent OE levels where the evidence supports this outcome.[387]

(b) The most recent regulatory precedent, the CMA's PR24 redetermination, determined[388] that the frontier shift target (comparable to GEMA's OE challenge) should be set at 0.7%.[389]

5.349 In response to our PD, the Appellants stated that they agreed with the principle of consistency but submit that, properly applied in this context, it undermines rather than supports GEMA's conclusion.[390]

5.350 The Appellants submitted that the CMA was incorrect to (provisionally) dismiss the relevance of PR24 to RIIO-GD3 because:[391]

(a) analysis of historical gas distribution productivity implies the same absence of insulation as the CMA found in the water sector;

(b) at PR24, responding to arguments that capex programmes drove embodied technical change and that AI could improve water company efficiency, the CMA found the effect of old, long-lived assets alongside new technology 'ambiguous', providing no reason to set frontier shift higher or lower. By contrast, the PD treats embodied technical change (combined with potential AI efficiencies) as a valid reason to set an OE above the bottom of its plausible range without justifying the distinction between gas and water; and

(c) the CMA's findings at PR24 regarding the overlap between stretching outcomes targets and frontier shift/OE are relevant to GDNs, who are also subject to outcome incentives, which GEMA made more challenging at RIIO-3.

5.351 The Appellants further submitted that, during the RIIO-2 appeal, GEMA and the CMA recognised that not all out-performance can equate to OE improvement and noted that GEMA has recognised this again at RIIO-3. The Appellants added that the fact that GDNs are neither systematically outperforming nor underperforming totex allowances therefore provides no insight into whether GEMA's 1% OE at RIIO-GD2 was set at the right level.[392]

5.352 The Appellants submitted that no uplift in the OE challenge was warranted on the basis of regulatory precedent as a qualitative factor. They referred to the CMA provisionally stating that consistency of methodology matters more than

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[387] SGN NoA, paragraph 465; Cadent NoA, paragraph 99(f); WWU NoA, paragraph 6.53.
[388] The final determination (see Volume 1) has now been published, which confirms the frontier shift target at 0.7%.
[389] SGN NoA, paragrapghs 464-467. Cadent NoA, pargraph 99(f). WWU NoA, paragraphs 6.53-6.55.
[390] Appellants joint response to RIIO-3 OE PD, paragraph 195.
[391] Appellants joint response to RIIO-3 OE PD, paragraph 197.
[392] Appellants joint response to RIIO-3 OE PD, paragraph 199.

consistency of outcome and that the CMA's RIIO-2 approach does not support an OE materially above 0.5%. The Appellants further submitted that the CMA's PR24 finding demonstrates that GEMA's and the CMA's assessment of insulation is wrong – and, accounting for this, the evidence shows OE should be set at a maximum of 0.5%.[393]

*GEMA's submissions*

5.353 GEMA submitted that other regulators have in recent times set OE at 1% and that it was not irrational for GEMA to have regard, in its final assessment, to what it considered was the widespread adoption of this figure. In response to submissions from two of the Appellants, that GEMA should have had proper regard to the underlying body of evidence afresh and/or that regulatory precedent should not override evidence, GEMA submitted that such submissions from the Appellants are unfounded as GEMA carefully considered the evidence before it and took all of it into account before reaching its decision.[394]

5.354 GEMA also submitted that the Appellants have themselves referred to regulatory precedent in seeking to advance their argument[395] such that GEMA is entitled to have regard to such precedent when forming its view on OE.[396]

5.355 In response to our PD, GEMA submitted that its approach was supported by regulatory precedent, particularly that the CMA stated in the RIIO-2 Appeals (at paragraph 7.248) that qualitative factors were not amenable to the attribution of specific weight.[397]

*CMA assessment*

5.356 GEMA stated in its DD that it considered 'recent UK regulatory precedent including RIIO-2, RIIO-ED2, and Ofwat's PR24, which all used EU KLEMS-based growth accounting to set OE targets. There is also a notable alignment around OE targets at 1% per annum'.[398]

5.357 In its FD, GEMA briefly summarised responses from network companies to GEMA's proposed use of OE regulatory precedents in setting the OE challenge. That summary was that:[399]

(a) Ofgem had relied on precedent of outcome, rather than precedent of methodology. Ofgem had overly relied on historical OE challenges set at

[393] Appellants joint response to RIIO-3 OE PD, summary table below paragraph 234.
[394] GEMA Response to Appellants' NoAs p62 paragraph 148.
[395] By way of example, GEMA described WWU's reference to the CMA's approach to innovation uplift in RIIO-2.
[396] GEMA's Response to Appellants' NoAs, p63, paragraph 149.
[397] GEMA's Response to CMA RIIO-3 OE PD, paragraph 36.
[398] GEMA (July 2025), RIIO-3 Draft Determinations Overview Document, paragraph 8.33.
[399] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.42.

previous price controls, rather than basing its (proposed) decision on updated analysis.

(b) As Ofgem re-baselined some outputs, RIIO-3 would set more stretching service delivery requirements than for RIIO-2, which would be odds with choosing an OE target from the higher end of the range.

5.358 GEMA did not respond directly to the network companies' submissions set out in the previous paragraph, stating in the FD its conclusion that its 'overall methodology is consistent with regulatory precedent, with our decision itself reflective of an in-the-round assessment of the opportunities that network companies have to drive productivity going forward'.[400]

5.359 We have reviewed the regulatory precedent referenced by GEMA and also considered the CMA's PR24 redetermination decision.

(a) GEMA's RIIO-2 decision set an OE challenge of 1.15% for capex and repex and 1.25% for opex for all network companies.[401]

(b) During the RIIO-2 CMA Appeals, the CMA directed GEMA to remove the so-called 'innovation uplift', resulting in OE challenges of 0.95% for capex and repex, and 1.05% for opex.[402]

(c) GEMA's RIIO-ED2 decision set an OE challenge of 1.0% of totex.[403]

(d) Ofwat's PR24 included a frontier shift[404] of 1.0%.[405]

(e) The CMA's PR24 redetermination included a frontier shift of 0.7%.[406]

5.360 The relevance of previous regulatory decisions in other sectors may be limited depending on the approach taken by individual regulators. For example, the CMA's PR24 decision to set a frontier shift of 0.7% included some aspects which may be relevant for RIIO-3 (such as analysis of EU KLEMS data and wider UK productivity growth) but the decision also explored a number of water sector specific considerations (such as historical water sector productivity, water technological progress and overlap between outcomes and frontier shift) which are not directly transferrable to RIIO-3.[407]

[400] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.55.
[401] GEMA (2020), RIIO-2 Final Determinations – Core Document, paragraph 5.20.
[402] CMA (2021), RIIO-2 CMA Appeals final determination – volume 2B, paragraph 7.867.
[403] GEMA (2020), RIIO-ED2 Final Determinations – Overview Document, paragraph 4.16.
[404] Frontier shift is the equivalent of OE in the water sector.
[405] Ofwat (2024), PR24 final determination – expenditure allowances, p260.
[406] CMA (2025), PR24 final determination volume 1, paragraph 4.1054.
[407] GEMA set out its considerations of the CMA's PR24 PD frontier shift methodology and its limitations in GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraphs 8.44 to 8.46.

5.361 We agree with GEMA that, in principle, previous decisions in the energy sector may have more relevance, but we note there are different ways of interpreting regulatory precedent when setting the OE, some of which have been raised by the Parties in their submissions. We consider there to be three ways to interpret regulatory precedent on OE, each of which we assess in turn below.

(a) The OE challenge values.

(b) The methodologies used to set OE.

(c) Ex post evaluation of OE in the context of price control performance.

5.362 First, we are of the view that, although potentially relevant as a cross-check, limited reliance should be placed on the OE challenge values used in previous regulatory decisions as the OE should be based on the relevant facts of the specific case.

5.363 Second, there is value in consistency of methodology used over time to improve the predictability and transparency of the regulatory regime. We agree with GEMA that the setting of the OE challenge is not an exact science and consistency over time does not translate to a mechanistic update of previous approaches, but there are benefits in using a broadly consistent approach to setting the OE challenge in different periods. Such consistency with regulatory precedent is relevant to both GEMA's approach to quantitative evidence (eg the use of EU KLEMS data) and qualitative factors (eg consideration of a range of qualitative evidence when setting the OE challenge).

5.364 We note in response to the Appellants' arguments[408] regarding CEPA's RIIO-2 methodology, that we do not consider it necessary for GEMA to mechanistically update its analysis from previous price controls to inform its decision on the OE challenge. As we observe in our discussion of the quantitative evidence, there is no reason to expect any of the historical numbers to provide decisive evidence on the potential for productivity improvements specifically for regulated networks over RIIO-3.

5.365 Third, the OE challenge is just one element of the overall price control and should be viewed in that context. We note that over the GD2 period, the GDNs neither systematically under nor overperformed against their totex allowances (two GDNs overspent by c. 7-8%, one GDN overspent by c. 1% and one GDN underspent by c. 7%).[409, 410] We consider that GEMA was not wrong to consider that GDNs'

[408] Appellants joint response to RIIO-3 OE PD, paragraph 196.
[409] SGN overspent by c. 8% SGN-RIIO-GD2-26-AUG2026.pdf, p13, Cadent overspent by c. 7% Cadent SPO 25_26 Final p9, WWU overspent by c. 1% wwu-riio-gd2-year-five-strategic-performance-overview.pdf, p13 and NGN underspent by c. 7% NGN-RIIO-GD2-Strategic-Commentary-2025-26.pdf, p9.
[410] We note that the GDNs' actual totex performance for the full RIIO-GD2 is worse than was set out by GEMA for the first four years of the price control (see Steven McMahon, WS2 (April 2026), paragraph 119). However, the actual RIIO-GD2 performance does not amount to GDNs 'systematically' underperforming.

actual RIIO-2 performance provides some relevant context for setting the RIIO-3 OE challenge and can be a useful cross-check (even if uncertainty over the drivers of totex over or underperformance, and the role of productivity gains within that, limit the conclusions that can be drawn from previous performance).

5.366 Given the above points, we do not find that GEMA erred in having regard to regulatory precedent as one qualitative factor informing its judgement of the level at which it should set the OE challenge for the RIIO-3 period.

**Did GEMA err in its use of independent forecasts?**

5.367 There are two key sets of independent productivity forecasts which GEMA considered in its FD, one from the BoE and the other from the OBR. Prior to GEMA's FD, the most recent forecasts were from the February 2025 BoE Monetary Policy Report[411] and the November 2025 OBR Economic and fiscal outlook report.[412]

5.368 While they provide quantitative information, the independent forecasts were considered by GEMA as one of its qualitative factors in setting the OE challenge.[413] We have therefore considered the Appellants' arguments relating to the forecasts in that context.

*Appellants' submissions*

5.369 All the Appellants argued that GEMA used forecasts based on incorrect, misinterpreted and incomplete data. All of them submitted that it was an error for GEMA to use an OBR forecast of 1% to support its OE challenge, which relates to labour productivity and is not appropriate to use in support of an OE challenge based on TFP growth.[414]

5.370 NGN, SGN and WWU submitted that GEMA, erroneously, did not use the average of the OBR forecast over 2024-30 and did not include the 2024 TFP growth rate figure from the BoE.[415] Those Appellants also submitted that GEMA, erroneously, did not consider expert consensus from a variety of institutions that the UK's economic productivity growth remains well below 1%.[416]

5.371 Cadent and SGN submitted that GEMA failed to have sufficient regard to independent forecasts of TFP from the OBR and BoE.[417]

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[411] Monetary Policy Report - February 2025 | Bank of England.
[412] Economic and fiscal outlook – November 2025 - Office for Budget Responsibility.
[413] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraphs 8.47 to 8.49.
[414] Cadent NoA paragraph 90(b); NGN NoA paragraph 165; SGN NoA paragraph 401; WWU NoA paragraph 5.19(a).
[415] NGN NoA paragraph 165; SGN NoA paragraph 401; WWU NoA paragraphs 5.15 and 5.19(a).
[416] NGN NoA paragraphs 141 and 147; SGN NoA paragraph 390; WWU NoA, paragraph 5.11.
[417] Cadent NoA paragraphs 88 and 89; SGN NoA paragraph 401.

5.372 All of the Appellants contended that it was wrong for GEMA to conclude that having regard to the latest OBR forecasts would require it to make in-period adjustments to the OE challenge. They submitted that the use of third-party forecasts would not imply the need to update the challenge during the price control. They noted that the majority of GDNs' ex ante allowances are based on forecasts of costs and volumes submitted in their Business Plans that are not updated over the period of the price control.[418]

5.373 The Appellants submitted that the PD made a series of errors in provisionally concluding that it was open to GEMA to place limited weight on the independent forecasts, such that the mistakes GEMA made in its FD do not amount to a material error.[419]

5.374 The Appellants stated that the CMA was right to find that GEMA erred in its assessment of independent forecasts, but the CMA was wrong to treat that error as immaterial. This was because a corrected reading of the OBR and BoE forecasts removed the only independent data point or quantitative evidence that GEMA relied upon to justify the 1% OE challenge it derived from the qualitative factors. Instead, the Appellants further submitted, the forecasts support a downward revision of GEMA's OE to materially below 1% and no uplift beyond 0.5%.[420]

5.375 Lastly, the Appellants submitted that no uplift should take place on the basis of 'Independent forecasts' as a qualitative factor. The average of (VA) independent forecast data over 2024-2030 is 0.4%, increasing to 0.5% once adjusted for public sector drag.[421]

*GEMA's submissions*

5.376 In its Response to the NoAs, GEMA referred to its FD Overview, where it stated that it had given qualitative consideration to forecasts of future UK productivity improvements but noted that they were uncertain and therefore determined that it would be wrong to tether the OE challenge to those forecasts.[422] GEMA submitted that this was a legitimate approach.

5.377 GEMA submitted that it was a matter for it to determine in its expert regulatory judgement how much weight should be given to these forecasts, and that is what it did.[423] GEMA said that, while it took account of productivity forecasts of future economy-wide productivity, it gave proper reasons for not placing decisive weight

[418] Cadent NoA paragraph 90(a)(i), NGN NoA paragraphs 166 to 170, SGN NoA paragraphs 395 to 400, WWU NoA paragraphs 5.8 to 5.9 and 5.51 to 5.53.
[419] Appellants joint response to RIIO-3 OE PD, paragraph 163(a).
[420] Appellants joint response to RIIO-3 OE PD, paragraph 218.
[421] Appellants joint response to RIIO-3 OE PD, summary table below paragraph 234.
[422] GEMA Response to Appellants' NoAs, p24, paragraph 51.
[423] GEMA Response to Appellants' NoAs, p24, paragraph 52.

on them, being mindful of their uncertainty and mutability, as well as the fact that they are not sector-specific.[424] Its approach, it contended, disclosed no legal error.[425]

5.378 GEMA submitted that it had considered the OBR's November 2025 update. However, this did not lead to any adjustment to the size of the OE challenge, given the inherent uncertainty of the OBR forecasts and the weight GEMA gave them.[426]

5.379 GEMA acknowledged that its subsidiary observation that the revised OBR forecast sat within the upper bound of the GEMA range within which it set the OE challenge was incorrect, in that it compared the OBR's labour productivity forecast with its own OE range, which was based on TFP data. GEMA submitted that this mistake was immaterial as external forecasts did not determine the OE challenge but was instead just one factor among many.[427] GEMA reiterated this point and reasoning at the hearing.[428]

5.380 GEMA also noted that Chapter 6 of the Grant Thornton Appeal Report acknowledged two errors. GEMA stated that neither of the errors had any material bearing on its decision.[429]

5.381 As regards in-period adjustments, GEMA submitted that the Appellants had misunderstood its FDs. GEMA submitted that it did not consider OE to be directly linked to wider economy productivity to a degree that would mean it would then be appropriate to apply a corresponding update to OE after GEMA's DDs based on an update to the OBR's forecast. GEMA stated that it observed within its FDs that, should there be such a direct link, the implication would be that regular updates would be appropriate.[430]

5.382 In response to our PD, GEMA submitted that the error relating to the BoE 2024 forecast analysis was not material because (1) the error was not made by GEMA (but rather GEMA's adviser, Grant Thornton) and (2) the analysis was not relied on in GEMA's decision, rather it was analysis performed solely as part of an exercise to replicate the CMA's analysis in PR24.[431]

*CMA assessment*

5.383 In its FD, GEMA briefly summarised responses from network companies to the use of qualitative factors that it had anticipated in its DD. That summary was:

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[424] GEMA Response to Appellants' NoAs, p25, paragraph 53.1.1.
[425] GEMA Response to Appellants' NoAs, P27, paragraph 54.
[426] Steven McMahon, WS2 (April 2026), paragraph 171.
[427] GEMA Response to Appellants' NoAs p26 paragraph 53.2.2.
[428] Transcript of the hearing for Ongoing Efficiency session on 17 June 2026, p71, line 3.
[429] GEMA Response to Appellants' NoAs, p27, footnote 32.
[430] Steven McMahon, WS2 (April 2026), paragraph 173.
[431] GEMA's Response to CMA RIIO-3 OE PD, paragraph 26.

‘Official independent forecasts from the OBR and Bank of England (BoE) do not support an OE target of 1%.’[432]

5.384 GEMA stated the following with respect to independent forecasts in its FD.[433]

(a) GEMA gave qualitative consideration to independent forecasts of wider UK productivity growth from the OBR and BoE in coming to its OE target.

(b) GEMA expects regulated network companies to outperform the average UK firm, which such forecasts represent.

(c) The forecasts are uncertain and are liable to change in the future, as the economy develops and indicators are updated.

(d) GEMA noted the OBR's downgrade of the UK productivity forecasts published on 26 November 2025 and that this resulted in a 0.3% decrease to the medium-term outlook for UK productivity since its previous forecast from 1.3% to 1%. Trend productivity growth is forecast to increase in 2024 and 2025 and then reach 1% in 2030.

(e) GEMA also referenced the OBR, highlighting a high degree of uncertainty and that the forecasts support its central estimate with upside and downside scenarios, indicating potential medium-term productivity growth up to 1.5% or down to 0.5% respectively.

5.385 We have considered four points:

(a) GEMA’s use of the independent forecasts as a qualitative factor, rather than as quantitative data;

(b) the Appellants’ arguments relating to factual errors in GEMA’s assessment of those forecasts;

(c) whether GEMA erred in how it used these independent forecasts when setting its 1% OE challenge; and

(d) the Appellants’ arguments relating to the use of independent forecasts and the need for updates within the price control.

[432] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.41.
[433] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraphs 8.47 to 8.49.

### Independent forecasts as a qualitative factor

5.386 The Appellants have suggested that GEMA should have used the independent forecasts as part of the quantitative data it considered (ie as part of the Quantitative Matter). We do not consider GEMA to have erred on that account.

5.387 It was reasonable for GEMA to consider the Quantitative Matter as concerned with deriving a plausible range using the EU KLEMS data. The independent forecasts are both uncertain and economy-wide and, as such, apt to be considered on a qualitative basis rather than as a more concrete data point.

### Errors in GEMA's assessment of independent forecasts

5.388 The Appellants point to the following factual errors made by GEMA:

(a) GEMA's use of OBR November 2025 labour productivity figure instead of TFP figures.[434]

(b) Grant Thornton's omission of BoE's 2024 estimate of 0.4% from its calculations.[435]

5.389 We agree with the Appellants that the TFP measure is a more appropriate proxy for OE than labour productivity, as the OE challenge is applied to overall totex. GEMA stated in its FD that the OBR November 2025 forecast productivity recovering to 1% by 2030.[436] If GEMA had used the TFP forecasts, productivity is forecast to recover to 0.8% by 2030.[437] GEMA recognised this error in its response to the Appellants' NoAs.[438]

5.390 We set out below the OBR and BoE forecasts for TFP, which were available to GEMA at the time of its decision. As shown in Figure 1.8, the OBR revised down its medium-term TFP forecast in its November 2025 Economic and Fiscal Outlook (compared with its March 2025 position). It can also be seen that the OBR expects TFP to increase year on year in the forecast period.

**Figure 1.8: OBR and BoE TFP forecasts**

| | *2024* | *2025* | *2026* | *2027* | *2028* | *2029* | *2030* |
|---|---|---|---|---|---|---|---|
| OBR March 2025 | 0.14% | 0.16% | 0.69% | 0.86% | 1.01% | 1.08% | n/a |
| OBR Nov 2025 | 0.15% | 0.47% | 0.35% | 0.49% | 0.59% | 0.71% | 0.78% |
| BoE Feb 2025 | -0.40% | 0.00% | 0.50% | 0.30% | n/a | n/a | n/a |

*Source: OBR March 2025 forecast, OBR November 2025 forecast, Bank of England March 2025 forecast*

[434] Cadent NoA paragraph 90(b); NGN NoA paragraph 165; SGN NoA paragraph 401; WWU NoA paragraph 5.19(a).
[435] NGN NoA paragraph 165; SGN NoA paragraph 401; WWU NoA paragraphs 5.15 and 5.19(a).
[436] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.49.
[437] Economic and fiscal outlook – November 2025 - Office for Budget Responsibility, paragraph 1.5.
[438] GEMA Response to Appellants' NoAs, p26, paragraph 53.2.2.

5.391 The OE challenge is applied from the first year of totex forecasts, which for RIIO-3 is 2024-25. When assessing the independent forecasts, it is therefore appropriate to include data from 2024 to be consistent with how the OE challenge is applied to totex. Grant Thornton's analysis for GEMA's FD did not include the BoE 2024 data, which it recognised as an error in its appeal report.[439]

5.392 Figure 1.9 shows Grant Thornton's updated analysis of the independent forecasts using TFP and including 2024 data (final row) compared to its original analysis of OBR labour productivity (first row). The corrected analysis shows lower productivity forecasts than GEMA considered in its FD.

**Figure 1.9: Grant Thornton updated CAGR analysis**

| | 2024-2029 | 2025-2029 | 2026-2030 |
|---|---|---|---|
| GT Second Report (OBR March 2025) | 0.74% | 0.83% | 1.06% |
| GT Second Report – corrected (OBR March 2025) | 0.53% | 0.67% | 0.87% |
| BoE + OBR November 2025 | 0.37% | 0.47% | 0.58% |

*Source: Grant Thornton Report on OE issues raised by RIIO-3 Appeals, Table 1.*

5.393 Given the above, we find that, while GEMA was entitled to take account of the independent forecasts as a relevant qualitative factor, it made errors in doing so (ie it mis-specified labour productivity forecasts as TFP and erroneously did not include the BoE 2024 data in its analysis of the independent forecast data). Later in this section of our decision we assess whether that error means GEMA's decision was wrong. For now, we make the observations in the following five paragraphs that we go on to use in that later assessment.

### GEMA's use of independent forecasts in setting 1% OE challenge

5.394 Whether the error we identify in the preceding paragraph is material depends on how GEMA used the independent forecasts in its decision. GEMA's contention is that its mistakes in its analysis of the forecasts are immaterial in that they do not change its broader assessment of, and its conclusion on, the OE challenge.[440]

5.395 GEMA stated that it placed limited reliance on independent forecasts. We understand that it did so for two main reasons: (i) there is inherent uncertainty in forecast data and (ii) the forecasts are economy-wide.

5.396 We agree with GEMA that there is inherent uncertainty in the independent forecast data. The OBR noted in its March 2026 Economic and Fiscal Outlook that 'Productivity growth is one of the most important drivers of the outlook for the

[439] Grant Thornton (April 2026), Report on Ongoing Efficiency issues raised by RIIO-3 Appeals, paragraph 5.7.
[440] GEMA Response to Appellants' NoAs, p26 paragraph 53.2.2.

public finances, **but also one of the most uncertain**' (emphasis added).[441] GEMA's FD nonetheless makes clear that it did place some reliance on the forecasts (and merely avoided 'explicitly linking' or '[tying] the outcome directly' to such forecasts').[442]

5.397 It is also right to observe that the independent forecasts are economy-wide and will capture sectors which are not directly comparable to GDNs, including the public sector. However, NERA's analysis of the impact of public sector drag could be used to adjust the economy wide forecasts, to make them more relevant to the GDNs.

5.398 Our view, accordingly, is that, GEMA should have had regard to the independent forecasts (ie it was not wrong to do so). However, it was important that it did so without error (in particular where the correct forecasts would have pointed towards a lower OE figure than GEMA's OE challenge of 1%).

#### Use of independent forecasts and updating throughout the price control

5.399 The Appellants also argued that GEMA erred in assuming that explicitly linking the OE challenge to official forecasts would require it to update the OE challenge throughout the price control period. In response, GEMA clarified that it did not consider the OE challenge to be linked to wider economy productivity such that it would be appropriate to amend the OE challenge should the forecasts be updated.[443]

5.400 We accept that what GEMA said in its FD was a subsidiary observation about the implication that would seem to follow logically were the OE challenge tied directly to the forecasts. We do not find GEMA to have erred on account of that observation.

### Did GEMA err in treating insulation as one of the qualitative factors?

5.401 We set out in paragraphs 5.177 to 5.179 above our findings that, in principle, GEMA did not err in its view that regulated networks will be partially insulated from the post-GFC slowdown in productivity in the wider UK economy during the RIIO-3 price control period. The finding we made there related to GEMA's assessment of the quantitative evidence (which we describe as 'stage 1' of GEMA's assessment). Similar points apply, however, in our view, in relation to GEMA's assessment of insulation as a qualitative factor (ie at 'stage 2').

[441] Economic and fiscal outlook – March 2026 - Office for Budget Responsibility, paragraph 2.9.
[442] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraphs 8.47 to 8.49.
[443] Steven McMahon, WS2 (April 2026), paragraph 173.

5.402 That is, GEMA was entitled, for similar reasons to those set out above, to take into account as a qualitative factor that, over the RIIO-3 period, the GDNs may be partially insulated from the post-GFC slowdown in productivity in the wider UK economy by aspects of the regulatory framework. GEMA was not wrong to take that into account in principle or at all. We return below to the question of whether the way GEMA took this factor into account was in error.

**Did GEMA err in characterising the OE as an incentive or stretching target to improve efficiency?**

*Appellants' submissions*

5.403 Three of the Appellants (NGN, SGN and WWU) submitted that GEMA was wrong in characterising the OE challenge as an incentive or stretching target to improve efficiency. They said the OE figure should be informed by an evidence-based assessment of economy wide sources of productivity growth and not used as a regulatory tool to incentivise companies.[444]

5.404 NGN and SGN submitted that GEMA has a variety of tools to promote efficiency and innovation by regulated network companies, such as the Totex Incentive Mechanism which rewards companies that outperform their allowed costs. They submitted that utilising OE to set an overly-stretching parameter that goes materially beyond what is to be expected of the wider economy is therefore not necessary to ensure that networks, '… are strongly challenged to continue driving cost efficiency through their businesses over time'.[445]

5.405 NGN submitted that GEMA mischaracterised the 1% OE challenge as an 'incentive' and doing so represents a misdirection as to the proper function of an OE challenge within a price control.[446]

5.406 WWU submitted that GEMA's characterisation mistakes OE's function within RIIO's regulatory framework. OE is a cost forecasting parameter, not an incentive mechanism.[447]

5.407 In their closing statement to the hearing, the Appellants stated that, once set, the OE has no incentive effect. Instead, that function is performed by the Totex Incentive Mechanism.[448]

5.408 In response to our PD, the Appellants submitted that the PD's statement that 'setting a stretching but achievable OE target helps ensure value for money by

[444] NGN NoA, paragraph 192 ; SGN NoA paragraph 465 ; WWU NoA, paragraph 6.53.
[445] NGN NoA, paragraph 194. SGN NoA paragraphs 469 and 470.
[446] NGN NoA paragraph 193.
[447] WWU NoA paragraph 6.6.
[448] Appellants' Closing Statement, June 2026 paragraph 3.

encouraging efficiency improvements' ignores that setting an OE figure too high simply underfunds companies for efficient costs rather than drives efficiency improvements. The Appellants added that it does not engage with the question of whether any further stretch was justified in light of the approach GEMA had already taken to its quantitative analysis.[449]

5.409 The Appellants further submitted that the CMA's rejection of their arguments about the stated effect of the OE challenge, on the basis that such effects were not included in the 'Decision on the RIIO-3 licence modifications: reasons and effects' document, is inconsistent with past CMA practice in RIIO-ED1.[450] They submitted that the CMA should properly have applied itself to this question: whether any, or any material, uplift to the OE challenge beyond the level the quantitative evidence supports can be justified on the basis of a stretch factor (ie an incentive effect). That question, they said, should have been considered against the wider tools in GEMA's regulatory framework and the stretch already deployed in GEMA's quantitative assessment.[451]

5.410 The Appellants also stated that, even if the CMA decided that stretch was a justifiable factor for GEMA to have considered in principle, it should have assessed whether that factor justified any uplift to the level of the OE challenge suggested by the quantitative evidence.[452]

5.411 The Appellants submitted that, when GEMA stated that it was selecting a 'plausible' range for the OE challenge, this was far from the effect in practice. The Appellants stated that the range was already stretched at the top to a level that GEMA itself considered 'not…..reasonable'. The Appellants added that GEMA also asymmetrically set the lower-bound of the range materially above the level implied by most EU-KLEMS comparator sector estimates and forecasts for the wider economy.[453]

5.412 The Appellants further submitted that the CMA entirely defers to GEMA as to the weight placed on the stretch factor ('as a matter of GEMA's regulatory judgement'). They contended that such deference was wrong. They submitted that, given the clear engagement of GEMA's duties in imposing the substantial funding cut that results from the OE challenge, and the substantial errors and omissions in GEMA's reasoning, the CMA must properly assess the approach

[449] Appellants joint response to RIIO-3 OE PD, paragraph 225.
[450] The Appellants also submitted that in WWU v CMA [2026] EWHC 99 (Admin), paragraph 143, the court stated that the CMA may be required to carry out its own investigation on whether in fact the stated effect was achieved as outlined by GEMA.
[451] Appellants joint response to RIIO-3 OE PD, paragraphs 219-221.
[452] Appellants joint response to RIIO-3 OE PD, paragraph 223.
[453] Appellants joint response to RIIO-3 OE PD, paragraph 224.

taken by GEMA to this [stretch] factor and whether the weight afforded to it was justified by the evidence.[454]

5.413 Lastly, the Appellants submitted that no uplift to the OE challenge is warranted as a result of this qualitative factor. They stated that stretch is achieved by setting OE based on quantitative evidence from competitive benchmarks, which they submitted only support an OE challenge of 0.5%. They stated that setting OE arbitrarily above the quantitative data does not increase GDNs' marginal incentives to make efficiency gains.[455]

*GEMA's submissions*

5.414 GEMA submitted that the Appellants' submissions appeared to be premised on paragraphs 5.3 to 5.6 of the Frontier Report where it is suggested that '[t]he role of the catch-up and OE processes is to establish ex ante totex allowances at the expected efficient level over the five-year period'.[456] GEMA submitted that it did not accept this description, which was inconsistent with the approach consistently adopted and upheld by the CMA.[457]

5.415 GEMA submitted that the Appellants' arguments are 'fatally' undermined by the findings of the CMA in the RIIO-2 appeals, reflecting that the CMA had observed that 'it is normal regulatory practice to set relatively stretching efficiency targets'. GEMA also noted that the CMA had found that given GEMA's specific regulatory objectives as established under statute, it is 'appropriate for GEMA to set a stretching, but achievable OE challenge' and that, accordingly, 'aiming up' was not an error. That being so, the express submission that OE 'cannot be a "stretching target"' must be wrong and reflects a misunderstanding of the settled regulatory landscape.[458]

*CMA assessment*

5.416 The Appellants have opposed GEMA's treatment of the OE challenge as a 'stretching' target. However, in their business plan submissions, multiple network companies (including the Appellants) described the OE targets they put forward as 'stretching' or 'challenging'.[459] While they disagree with GEMA on what level of OE challenge represents a stretching target, this appears to us to recognise, in principle, the function of that challenge.

[454] Appellants joint response to RIIO-3 OE PD, paragraph 226.
[455] Appellants joint response to RIIO-3 OE PD, in the summary table below paragraph 234.
[456] GEMA Response to Appellants' NoAs, p64 paragraph 155.
[457] GEMA Response to Appellants' NoAs, p64 paragraph 156.
[458] GEMA Response to Appellants' NoAs , p66 paragraph 159.
[459] NGET (2024), RIIO-T3 business plan, p76. Cadent (2024), RIIO-GD3 business plan, p11. NGN (2024), RIIO-GD3 business plan, p73. SGN (2024), RIIO-GD3 business plan, p82. WWU (2024), RIIO-GD3 business plan, p11.

5.417 It is, we find, normal regulatory practice for regulators to set relatively stretching efficiency targets. Those have a legitimate function of incentivising regulated companies to deliver efficiencies (even where, once the OE is set, marginal incentives are unaffected).[460] As noted by GEMA, the OE challenge aims to incentivise the same kind of discipline that is imposed by competitive markets, and together with the catch-up efficiency challenge, it is an important tool to put targeted pressure on companies to deliver continuous improvement across the sector.[461]

5.418 In response to the Appellants' arguments about stated effects, our provisional decision in that connection was only partly based on the contents of GEMA's 'reasons and effects' document. We also explained in our PD that, even if the relevant stated effect were that alleged by the Appellants (ie that the OE challenge reflects the productivity gains that even the most efficient company can achieve) our provisional view was that GEMA's setting of the OE challenge was consistent with that effect.

5.419 GEMA made several references in its FD to the fact that its aim in setting the OE challenge was that described in the preceding paragraph,[462] and that setting a stretching but achievable target would ensure value for money for consumers. GEMA described that setting such a target would reflect '… the scale of new investments, as well as efficiency gains and innovation in the wider economy, [and] helps ensure value for money by encouraging continued efficiency improvements'.[463]

5.420 We therefore find that GEMA made no error in taking into account, as one of its qualitative considerations, the setting of a stretching OE challenge. It was entitled to do so, in principle

**Conclusions on GEMA's treatment of the qualitative factors in principle**

5.421 On the bases of the above, GEMA was not wrong to take into account the qualitative factors it identified. It was entitled to consider them, in principle, and did not err on account of having regard to them in setting the OE challenge. In the following paragraphs we set out our assessment and conclusions on whether *the way* GEMA took those factors into account was wrong.

[460] Once ex ante totex allowances are set, the GDNs' marginal incentive to drive efficiency gains will be the same independent of the level of OE challenge set.
[461] Steven McMahon, WS2 (April 2026), paragraph 17.
[462] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraphs 8.20, 8.22 and 8.50.
[463] GEMA (December 2025), RIIO-3 Final Determinations Overview Document, paragraph 8.20. GEMA made a similar statement at paragraph 3.11.

**Did GEMA err in the way it applied the qualitative factors?**

5.422 The Appellants, GEMA and Citizens Advice all made submissions about the use of qualitative factors, which we summarise below.

*Appellants' submissions*

5.423 The Appellants submitted that they do not contend that the consideration of qualitative factors *per se* is incorrect. Rather, they submitted that the qualitative factors considered by GEMA do not justify the selection of a 1% OE challenge.[464] They said that GEMA's qualitative assessment for setting that challenge was flawed, unevidenced and insufficient to bridge the gap from the level suggested by other evidence to 1%. They also said that GEMA did not meaningfully explain or clarify what they described as: (i) its nebulous 'in the round' assessment; (ii) the weight placed on any one factor; and (iii) why qualitative factors that would support aiming down were not considered.[465]

5.424 The Appellants submitted that qualitative factors have informed GEMA's lower bound of 0.7%. They contended that some qualitative factors (including insulation, VA metrics and embodied technical change) have effectively been double counted because they also factored into GEMA's assessment of the OE parameter within the range.[466]

5.425 The Appellants said that GEMA did not take into account how regulation constrains GDNs' ability to make efficiency gains. They noted that the majority of GDNs' expenditure is linked to defined outputs which limit GDNs' flexibility to optimise expenditure and realise immediate operational efficiencies, eg that GDNs must complete the repex programme by 2032. Another qualitative factor not considered by GEMA is that the regulatory framework sets challenging output targets, whereas the OE parameter is applied only to totex.[467]

5.426 The Appellants further submitted that it is not credible that GEMA's qualitative factors and partial insulation hypothesis, even had they not been accounted for twice, are sufficient to justify the assertion that GDNs can systematically outperform TFP growth in competitive sectors between 2024 and 2030 (despite the first two years of this period having seen very low economy-wide growth).[468]

[464] The Appellants' Joint Reply to GEMA's Response, dated 8 May 2026, paragraph 42.
[465] The Appellants' Closing Statement, June 2026, paragraph 18.
[466] The Appellants' Closing Statement, June 2026, paragraph 19.
[467] The Appellants' Closing Statement, June 2026, paragraph 20.
[468] The Appellants' Closing Statement, June 2026, paragraph 21.

*GEMA's submissions*

5.427 GEMA submitted that its rationale for considering qualitative factors was that, because there is no way of directly measuring future productivity improvements, setting the OE challenge is not simply a mathematical exercise. Instead, the choice of OE challenge is based on both qualitative and quantitative factors. GEMA submitted that taking account of qualitative factors is settled regulatory practice and involves expert judgement.[469] GEMA further submitted that its decision to set OE at 1% took account of multiple qualitative factors. It did not seek to quantify their impact but instead had regard to them in its in-the-round assessment.[470]

5.428 In response to the PD, GEMA submitted that it is because OE is inherently unknowable that it is legitimate for GEMA to use its regulatory judgement to have regard to qualitative factors without quantifying them or giving an individual factor a specific amount of weight.[471]

5.429 GEMA further submitted that GEMA's approach was supported by regulatory precedent since the CMA stated in the RIIO-2 appeals that qualitative factors were not amenable to the attribution of specific weight.[472]

*Intervener's submissions*

5.430 Citizens Advice submitted that GEMA was not wrong in using qualitative evidence to supplement quantitative estimates. Citizens Advice said uncertainty within the productivity evidence makes it vital that estimates are balanced with the real-world context of the regulated monopoly network sector. Productivity evidence relies on selecting comparator sectors, with the results highly sensitive to which sectors are included. Qualitative evidence is required as external benchmarks are not a perfect comparison for UK regulated energy network companies.[473]

5.431 Citizens Advice further submitted that another reason for the use of qualitative evidence is that, even where the most relevant sectors are selected, the majority of companies within those sectors will be in non-regulated competitive markets. Citizens Advice said it is not reasonable to consider that productivity potential will be equivalent across regulated monopoly and unregulated competitive sectors.[474]

[469] GEMA Response to Appellants' NoAs, p51, paragraphs 121-122.
[470] GEMA Response to Appellants' NoAs, p53, paragraph 126.
[471] GEMA Response to Appellants' NoAs, p 14-15, paragraphs 33-35.
[472] GEMA Response to Appellants' NoAs, p14, paragraph 36.
[473] Citizens Advice application for permission to intervene, paragraphs 21-23.
[474] Citizens Advice application for permission to intervene, paragraphs 21-23.

*CMA assessment*

5.432 We have set out above, for each qualitative factor, our findings as to whether GEMA erred in taking that factor into in principle. We have concluded that GEMA was entitled to have had regard to each factor, in principle, in setting the OE challenge.

5.433 We now consider *how* GEMA used those qualitative factors to justify an uplift from 0.7% to 1% (a material increase) within its 'plausible range'. We find that GEMA took into account an irrelevant consideration and failed to take account of some relevant ones as follows.

5.434 In respect of independent forecasts, GEMA used the OBR's November 2025 labour productivity forecasts, instead of the TFP forecasts. GEMA also took into account the analysis by Grant Thornton which omitted the BoE's 2024 growth estimate of -0.4%, thereby failing to take into account that (relevant) growth estimate (see paragraphs 5.388 to 5.393). In the former regard, that meant GEMA took account of an irrelevant consideration (ie the mis-specified labour productivity forecasts), rather than a relevant one (ie the TFP forecasts) that should have informed its judgement. In the latter regard, GEMA omitted a relevant consideration.

5.435 In relation to other qualitative factors, while GEMA was not wrong to consider that the factors could in principle have a positive impact on future productivity performance, it did not consider limitations and downsides that may have limited that impact. In particular:

(a) GEMA did not consider the extent to which any positive impact of some of the qualitative factors was exhausted in its setting of the bottom end of the range at 0.7%. In other words, it did not consider the extent and effect of any overlap or double-counting of those factors in its overall assessment.

(b) GEMA did not consider the extent to which some of the qualitative factors mean GDNs could be expected to be more or less productive than the average of the Comparator Sectors.

(c) GEMA did not, having considered (a) and (b), consider whether any limitations of the qualitative factors on the setting of the OE challenge were specific to an individual factor or part of a collective impact of one or more factors acting together. This consideration is important when coming to a view on the aggregate impact of all such factors taken together.

(d) GEMA did not, having considered (a), (b) and (c), turn its mind to whether the impact of the qualitative factors, individually or in combination, on the setting of the OE challenge was likely to be minor or more substantial. Quantification of the impact of the identified factors would have been difficult and uncertain

(and GEMA was not wrong to treat them qualitatively). However, given their importance in setting an OE challenge above the bottom of its plausible range, GEMA should have considered this point in judging the overall weight it placed on the qualitative factors.

5.436 This is not to say that GEMA did double-count the qualitative factors in setting the bottom end of its range and in setting the OE challenge above 0.7%. We noted in our PD that there was a risk of overlap in the way GEMA had considered certain factors in its assessment. As we also said in the PD, it was for GEMA, as a matter of regulatory judgement, to consider the weight it should place on those factors. In light of further evidence and submissions from the Appellants, however, we find that GEMA did not, in the particular circumstances of the RIIO-3 price control, turn its mind to relevant considerations that should have informed the exercise of its judgement.

5.437 The following are examples of considerations to which, having considered the Appellants' responses to our PD, we find that GEMA should have had regard (but did not):

(a) Insulation: GEMA does not appear to have turned its mind to the implications of, having taken account of the (partial) insulation effect in setting the plausible range (and the 0.7% bottom end in particular), also considering that effect in its assessment of the qualitative factors. It did not consider the implications (if any) of relying on that effect at both stages when setting the specific point of the OE challenge (and, in particular, for the setting of a stretching target on the basis of an insulation effect provided by the RIIO regulatory framework - as to which see (c) below). Nor does it appear to have accounted for the uncertainty over the extent of any insulation effect (see paragraphs 5.167 and 5.168 above).

(b) IT&T / D&D: GEMA did not turn its mind to the level of IT&T spending (as a proportion of total spend) of the GDNs compared with that of the average of the Comparator Sectors (used in Grant Thornton's EU KLEMS analysis). In addition, GEMA did not consider the differing levels of IT&T and D&D funding for the GDNs compared with the transmission companies, and the corresponding impact on the OE challenge set for the GDNs (compared with the transmission companies). Neither did it consider whether the use of AI might affect (i) GDNs' productivity more or less than the average of the Comparator Sectors; or (ii) the potential for productivity gains in the future compared with the historical analysis of the EU KLEMS data (which will not capture the impacts of AI).

(c) The stretch objective: GEMA has explained that it regarded the bottom of its plausible range (0.7%) as representing a pessimistic view on achievable OE and the top end of its range (1.3%) as not reasonable. On that basis, the

application of its stretch factor objective appears to be inconsistent with an OE challenge at either end of that range. GEMA does not appear, however, to have considered, and did not explain in its FD, the extent to which its application of the stretch objective, when combined with its consideration of the other qualitative factors, contributed to its determination of OE.

5.438 We also note that GEMA did not turn its mind to possible countervailing factors that might have reduced the level at which the OE challenge would otherwise have been set (in addition to the independent forecasts which we note above). The Appellants have identified some such factors.[475]

5.439 As far as the countervailing factors identified by the Appellants are concerned, GEMA did have regard to some of them. In particular, the Appellants contended that GEMA did not take account of matters such as regulatory burdens faced by the GDNs but not firms in competitive sectors. We do not find that to be the case.

5.440 Rather, GEMA had regard to such matters when considering the insulation effect (see paragraphs 5.148 to 5.152 above). It referred to them, and the allowances and revenue certainty from which the GDNs benefit, but which firms in competitive sectors do not, in paragraphs 8.50 and 8.51 of its FD.

5.441 We observe, too, that it would not, in our view, have been possible for GEMA to identify all countervailing factors in exhaustive detail given the inherent uncertainty of future events. Nor was it required to consider all possibilities, however remote.

5.442 Nevertheless, and as it acknowledged at the hearing, GEMA did not take into account any other qualitative factors over and above those referred to in paragraphs 5.25 and 5.26.[476] In reaching a balanced judgement on whether the impact of the qualitative factors, either individually or in combination, was likely to be minor or more substantial, GEMA should have turned its mind to the possibility of there being some likely important and relevant countervailing factors and considered their implications, if any, for its exercise of its judgement.

5.443 One example the Appellants put forward is that TFP growth benchmarks in competitive sectors will measure all productivity gains (including both OE and catch-up efficiency) in those sectors. They said that this is a downside factor that GEMA should have taken into account in considering any insulation effect. We

[475] See Appellants joint response to RIIO-3 OE PD, paragraph 184. Specifically, the Appellants raised (1) TFP capturing known and unknown productivity gains (see Appellants joint response to RIIO-3 OE PD, paragraph 182(b)); (2) regulatory burdens (see WS1 of Dean Pearson, paragraph 16, WS1 of Dean Pearson, paragraphs 24 to 29, WS1 of Richard Court, paragraph 58, WS1 of Carly Evans, paragraph 4.20; (3) the maintenance of safety across the network (see WS1 of David Handley, paragraph 71, WS1 of Dean Pearson, paragraph 27, WS1 of Richard Court, paragraph 71(a), WS1 of Carly Evans, paragraph 4.19, WS1 of David Handley, paragraph 70); and (4) the end of the 2030 mains replacement programme (Transcript of the hearing for Ongoing Efficiency session on 17 June 2026, p125 lines 20-25, WS1 of Dean Pearson, paragraph 23, WS1 of David Handley, paragraph 74). We note that (2), (3) and (4) all go to countervailing factors of the insulation effect. We consider these in our assessment of insulation.
[476] Transcript of the hearing for Ongoing Efficiency session on 17 June 2026, p122 lines 23-25.

agree that GEMA should have turned its mind to this point, and considered its impact (if any), when setting the OE challenge.

5.444 Accordingly, we find that GEMA did not have regard to some relevant considerations that should have informed its judgement of where to set the OE challenge above 0.7% and it had regard to an irrelevant one (ie the mis-specified labour productivity forecasts, which were used by GEMA instead of TFP forecasts). It only took account of matters that tended to support an upwards movement in the level of the challenge and not those which might have indicated a lower level. It should have had regard to both in making its in-the-round judgement.

**Conclusions on the Qualitative Matter**

5.445 We therefore find that GEMA erred in law in respect of the Qualitative Matter. It was open to GEMA to rely on the qualitative factors, individually and cumulatively, but it failed to take into account some relevant considerations and took into account an irrelevant one, and it did not consider whether the impact of the qualitative factors, individually or in combination, on the setting of the OE challenge was likely to be minor or more substantial.

5.446 Given that, for the purposes of section 23D(4) GA86, we may allow an appeal on one or more of the statutory appeal grounds, in the interests of the overriding objective[477] we do not consider and determine whether any of the other statutory grounds relied on by the Appellants in respect of the Qualitative Matter have been met. Doing so is not necessary.

## Our overall final determination on the OE challenge

5.447 We conclude that GEMA erred in setting the OE challenge. It failed to take into account some relevant considerations relating to the qualitative factors that it used to set the level of the OE challenge, and considered an irrelevant one (ie the mis-specification of labour productivity forecasts as TFP forecasts).

5.448 GEMA described its selection of the 1% figure as an exercise of regulatory judgement. It said it made that judgement based on an in-the-round assessment of the evidence and of the opportunities that network companies have to drive productivity in the RIIO-3 period.

5.449 GEMA is entitled to make regulatory judgements. Those judgements may take a number of different factors into account and be made in-the-round having regard

[477] To enable the CMA to dispose of appeals 'fairly and efficiently and at proportionate cost' within the time period prescribed by the GA86. Rule 4.1 of CMA70.

to those factors. Where the judgements are properly made, the CMA will be slow to interfere with them.[478]

5.450 However, regulatory judgements, even when made in-the-round, are not unbounded. They must take account of relevant considerations and must not take account of irrelevant considerations. Otherwise, they are susceptible to what the courts have described as 'process irrationality.' The considerations that are relevant, and those that are not, depend on the decision at hand and the context in which it is made.

5.451 In this case, GEMA was entitled to have regard in principle to the qualitative factors that it took into account. However, its assessment must be considered as a whole. Having set the 0.7% to 1.3% range in the way that it did, GEMA should, when applying the qualitative factors, have turned its mind to possible downside as well as upside considerations when judging the specific point at which it set the OE challenge. It should also have considered whether the impact of the qualitative factors, individually or in combination, on the setting of the OE challenge was likely to be minor or more substantial.

5.452 This does not mean that GEMA needed to turn its mind to those considerations in the granular detail alleged by the Appellants in this appeal. Nor does it mean that such factors must be quantified. GEMA did, however, need to turn its mind to those matters, to consider their implications for the exercise of its judgement and explain so in its decision.

5.453 Accordingly, we conclude that GEMA's Decision as far as it concerned the setting of the OE challenge was 'wrong in law' (under section 23D(4)(e) GA86) on account of the Qualitative Matter. We allow the appeals and quash the Decision to that extent. We need not, having made that finding, and in light of the overriding objective, determine the other grounds of appeal relating to the Qualitative Matter.

5.454 In reaching our conclusion, we do not find that GEMA was wrong in its approach to the quantitative evidence. Nor do we find that it was wrong, in principle, to treat regulated network companies as partially insulated from the post-GFC slowdown in productivity in the wider UK economy. It was not wrong to use that insulation effect as a basis for placing less weight on post-GFC productivity data and in its assessment of the network companies' business plan submissions on OE. We confirm the Decision in these specific regards.

5.455 Volume 4 (Relief) sets out the next steps in relation to remedies.

[478] See Volume 1, The legal test on appeal. Paragraphs 4.30 onwards.