The Cunliffe Review

Lessons for energy network regulation

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The Independent Water Commission, chaired by Sir Jon Cunliffe (the "Cunliffe Review"), set out a series of proposals for reform of the regulatory system for water. The review follows a period of turmoil in the water sector, with adverse publicity over pollution incidents prompting widespread criticism of the sector regulator, Ofwat. While many of the Commission's findings and recommendations are specific to the water industry, similarities across regulatory frameworks in the UK mean that the review has important implications for other regulated sectors. Chris Pickard, Associate Director at Economic Insight, looks at the lessons of the Cunliffe Review for energy network regulation.

The bigger picture

Before looking at the detail of the Commission's proposals, it is worth considering some of its findings which have more general implications for how the UK approaches economic regulation. The Commission emphasised that long-term institutional infrastructure investors are looking for low risk and steady returns.[1] This applies as much to energy networks as to the water sector. When thinking about regulatory design, sector regulators need to ensure that this simple fact is at the heart of their approach. Relatedly, the Commission emphasises the need for stability in the regulatory framework, even going as far as recommending that the UK and Welsh governments include a target for regulatory stability in their strategic guidance.[2] Again, the need for a consistent and predictable approach to regulation is vital when regulated networks need to attract steady, long-term finance on reasonable terms.

Off with Ofwat

The Review's headline recommendation was widely reported as the 'abolition' of the existing economic regulator for the sector, Ofwat. In fact, the Commission recommended the amalgamation of the existing regulators in England into an integrated water regulator, which would combine the functions of Ofwat, the Drinking Water Inspectorate and the water functions of the Environment Agency and Natural England.[3] Alongside this, the Commission recommended the creation of a new economic regulator in Wales (either within the existing environmental regulator or as a separate body).[4]

While the regulatory structure in energy differs markedly from the existing structure in the water industry, the Commission's recommendations provide a cautionary tale for regulation in the sector. A key weakness that the Review identified was a lack of alignment between the price review process and other planning frameworks, such as WINEP and WRMP.[5] In the energy sector, as NESO expands its role in strategic planning, both it and Ofgem will need to ensure clarity, consistency and a long-term focus if they are to avoid the mistakes that Cunliffe identifies in the water sector.

[1] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 742, page 315.*
[2] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); recommendation 52, page 327.*
[3] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); recommendation 16, page 165.*
[4] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); recommendation 17, page 170.*
[5] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 82, page 56.*

The Commission also recommended that the new regulator be given *"powers to direct parent companies and ultimate controllers"*,[6] on the grounds that there may be *"situations where the regulator needs a parent company or ultimate controller to take certain actions, to enable the regulated water company to meet its statutory duties or licence conditions"*.[7] While this recommendation is specific to the water sector, the underlying logic appears applicable, in principle, to any regulated industry. We note that the Commission also identified concerns from investors about the increase in Ofwat's powers and instability in the regulatory framework,[8] which should give pause for thought about any proposal to increase regulatory powers.

It's been eight years…

The Commission also identified the nature of the five-year price review cycle as a barrier to long-term planning, noting pronounced 'start-stop' trends in enhancement expenditure. The Commission did not, however, recommend moving to longer cycles – directly citing Ofgem's experience of moving from five-to eight-year controls in RIIO-1.[9] It did note recent attempts to increase flexibility within the price review process to mitigate these problems, including the use of uncertainty mechanisms, which are already used more widely in energy regulation.[10]

Under pressure

One of the Commission's most striking findings was that pressure from both the government and the regulator to keep bills down was an important cause of underinvestment since 2010, and of the subsequent correction required at PR24:

> ***"Overall, the Commission does see evidence that there was pressure from government and the regulator to keep bills low in Price Reviews between 2009 and 2024****. It is difficult to say, with certainty, how much of the huge expansion of investment in Price Review 2024 could and should have been foreseen by government or the regulators, or how much companies were discouraged by both from bringing forward investment in line with a forward-looking interpretation of their licence responsibilities. But, while there also appears to have been a range of other factors at play during this period,* ***the Commission believes that government and regulator pressure on bills played an important role in what can now be seen as underinvestment over this period"****.*[11] (emphasis added).

It is difficult to avoid political questions where consumer bills are concerned. While questions of political pressure have been less prevalent in relation to energy *network* price controls, to some extent, this reflects a focus on energy retail charges; network charges are, of course, a lower proportion of total customer bills than in the water sector. Indeed, it may be easier to protect the objectivity of price controls that require increased investment against the backdrop of government policy to achieve clean power by 2030.

The Commission's findings nevertheless raise important questions for how to insulate energy regulation from political pressure. The Commission specifically identified messaging from the government and Ofwat in the period up to PR19, citing statements from then Ofwat chair Jonson Cox in 2017 about a *"decade of falling bills"* and from then Defra Secretary Michael Gove in 2018 about

[6] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); recommendation 48, page 304.*
[7] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 704, page 304.*
[8] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 411, page 190.*
[9] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); box 10, page 81.*
[10] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 84, page 57.*
[11] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); box 26, pages 201-202.*

"further lower[ing] consumer bills".[12] Even at the time it should have been clear that statements about falling bills were made in the absence of any objective assessment of the water sector's expenditure requirements. The energy sector will need to be alive to the risk that this type of messaging from government and regulators poses to the accurate and impartial assessment of network charges.

Rocky regulatory relationships

The Commission's assessment of the relationship between Ofwat and companies presents important lessons for the energy sector, and some insights as to how the kind of political pressure set out above can potentially be avoided in future.

The Commission was told that Ofwat's overall approach and relationship with the water industry and investors was "*adversarial, unpredictable and transactional".*[13] Having heard evidence of an 'invisible gap' due to companies being deterred by Ofwat from submitting plans that reflect their actual expenditure requirements, the Commission emphasised that it *"is important that companies are not incentivised to underestimate their expenditure needs, including capital maintenance"*.[14]

Some aspects of Ofwat's behaviour appear to reflect a naïve, 'Economics 101' view of the relationship between regulators and companies. In textbook form, the problem of regulating a monopoly is sometimes framed as a principal-agent problem, in which the regulator (the principal) is at an informational disadvantage to the company (the agent). In this heavily simplified model, the company has an overriding incentive to overstate its costs, which the regulator needs to pair back. This simplistic view ignores the realities of the array of stakeholders – management, shareholders, regulators, government, etc. – and the different incentives each face, be they financial, reputational, electoral, etc. It nevertheless appears to have been influential in the regulatory process becoming "*adversarial, unpredictable and transactional"* in the manner that the Commission describes.

There are some important lessons for Ofgem in the Commission's findings. While the relationship between companies and the regulator in the energy sector does not appear to have deteriorated to the levels in the water sector, some aspects of Ofgem's recent draft determinations for electricity transmission, gas transmission and gas distribution strike a distinctly confrontational tone. For instance, in relation to ongoing efficiency, Ofgem relied on *ad hominem* arguments to avoid engaging with evidence from companies, stating that *"[r]egulated companies and their consultants also all have an incentive to aim down in their OE proposals and to make analytical choices which favour lower growth accounting outcomes"*.

If the energy sector is to avoid the deterioration in relationships identified in the water industry, it will be essential for companies' business plans and the regulator's determinations to be developed in good faith. As part of this, the regulator will need to ensure it judges company submissions on their merits, rather than assuming companies have inevitably overstated their costs.

To tell you the truth…

The Commission was especially critical of Ofwat's Quality and Ambition Assessment (QAA), which imposes financial rewards and penalties to companies based on Ofwat's assessment of their business plans. It was concerned that, by giving companies incentives to submit plans that align with Ofwat's view, Ofwat deterred them from submitting plans that included necessary expenditure on capital maintenance and enhancement, leading to an 'invisible gap' in expenditure.[15] It cited the example of

[12] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); box 26, pages 201-202.*
[13] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 382; page 180.*
[14] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 466; page 208.*
[15] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 467; page 209.*

Thames Water, which received a £141 million penalty for submitting a business plan seeking an increase in capital maintenance allowances, despite Thames having the worst asset health performance in the industry on Ofwat's own metrics.[16] Ultimately, the Commission recommended the withdrawal of the QAA,[17] emphasising that *"[i]t is important that companies are not incentivised to underestimate their expenditure needs, including capital maintenance".* [18]

There is a fairly exact parallel of the QAA in the energy sector, in the form of Ofgem's Business Plan Incentive (BPI). Ofgem's assessment of "*efficient and justified costs*" assigns a reward or penalty, based on the "*efficiency of the costs submitted within company business plans*".[19] There is therefore a clear risk that a similar problem, of companies being incentivised to submit plans that conform with the regulator's view, arises under Ofgem's framework; although in practice some other features of Ofgem's approach, such as greater use of engineering assessments for baseline expenditure, may provide some mitigation. In view of the Commission's criticisms of this type of incentive mechanism, Ofgem will need to consider seriously whether retaining the BPI in its current form at future price controls can be justified.

Risky incentives

The Commission found many problems with Ofwat's Outcome Delivery Incentive (ODI) framework, noting that it has *"placed significant variability … on company returns",*[20] and that the *"incentive landscape is now overcomplicated – such that overall incentives and risks companies face are no longer clear to the companies, investors, the water regulators, or customers".*[21] The Commission therefore recommended that the regulator *"review the performance incentives framework, to rationalise the overall number of PCs and make their corresponding ODI rewards, penalties and returns at risk, clear"*.[22]

While the Commission contrasted Ofgem's approach, with its smaller number of Output (rather than Outcome) Delivery Incentives, favourably with Ofwat's, we nevertheless think there are some important lessons for the energy sector in relation to incentives. The Commission's focus on the impact of incentive mechanisms on returns, and the need for this to be clear, is especially important. In this context, we note that Ofgem's approach to understanding equity risk at the recent DDs was simplistic and based on pre-determined scenarios that assumed a symmetric risk distribution. In our view, the Commission's findings on this issue highlight the importance of a more rigorous approach to risk, ideally using more sophisticated techniques such as Monte Carlo modelling.

Bye to benchmarking?

The Commission criticised Ofwat's over-reliance on a *"data-driven, econometric approach"* that does not take *"sufficient account of company-specific conditions and challenges"*.[23] While the Commission recognises the need for *"objective, industry-wide benchmarking"* to protect customers, it criticises its *"over-reliance"* on and *"over-development"* of econometric models.[24] The Commission does not suggest that econometric benchmarking be abandoned, however. Instead, it recommends a move

[16] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); box 21; page 182.*
[17] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); recommendation 21; page 209.*
[18] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 466; page 208.*
[19] *'RIIO-3 Business Plan Guidance.' Ofgem (September 2024); paragraph 9.15, page 79.*
[20] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 470, page 212.*
[21] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 471, page 212.*
[22] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); recommendation 22, page 216.*
[23] *Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 417, page 193.*
[24] *Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 417, page 193.*

toward a 'supervisory approach' to regulation, with equal weight attached to evidence and information gained from supervisory engagement as to econometric modelling.[25]

There is unlikely to be any clamour for Ofgem to undertake a similar supervisory role in respect of gas and electricity networks, though we note that it has begun to adopt such a role in relation to energy suppliers. Were deferrals in maintenance expenditure to lead to widespread asset failures, however, there may be calls for Ofgem to take a role more similar to what the Commission proposes for the new water regulator.

Ofgem should nevertheless pay close attention to the Commission's criticism of its reliance on econometric modelling and think about how its approach can be modified to address the limitations to which the Commission draws attention. Without adopting a supervisory approach, we think the regulator can still guard against the risk of customers paying for company inefficiency while accounting for company-specific issues. Doing so will require a subtler, more sophisticated use of econometric models than the current approach.

Econometric models are used to identify inefficient cost expenditure. This involves using data across companies to estimate the relationship between costs and their drivers; for example, Ofwat often looks at the relationship between costs and mains length, while Ofgem looks at the relationship with modern equivalent asset value. A proportion of each company's costs will not be explained by the drivers in the model and will be attributable, instead, to a mixture of inefficiency and other variation in costs from factors that are not captured by the model. Once an appropriate split between the two has been determined, inefficient expenditure can then be identified.

Both Ofwat and Ofgem determine this split between inefficiency and unmodelled variation in costs with reference to the company that is, according to the model, the upper quartile performer on cost efficiency. This approach takes no account of the type of company-specific conditions and challenges that the Commission identifies in its criticism of Ofwat's use of econometric models.

Instead, Ofgem should consider retaining its econometric approach, but adopting a subtler way of understanding the split between efficiency and unmodelled cost variation for each company. For each econometric cost model it decides to use, Ofgem will need a thorough understanding of the factors outside the model that affected each network's costs. Rather than requiring companies to propose adjustments and placing a high bar to accept them, for example through materiality thresholds, Ofgem will instead proactively seek evidence on cost drivers that are not captured by its models.

Tata to totex

Ofwat introduced its total expenditure (totex) approach to cost recovery to much fanfare at PR14. Aimed at addressing a perceived 'capex bias', the totex framework removed the strict split between opex, which was recovered in the same year it was incurred, and capex, which was added to the asset base and recovered over time. Instead, the totex framework introduced flexibility over both *how much* expenditure was recovered in the year in which it was incurred, and *how quickly* remaining expenditure was recovered. Indeed, such was Ofwat's faith in the totex approach that it was used to justify setting very high ongoing efficiency (frontier shift) challenges. Ofgem introduced a similar approach for the energy sector at RIIO-1.

While the Commission acknowledges the additional flexibility that the totex framework provides to the way that companies spend their allowances, it considers that this comes at the expense of transparency over how companies spend them. The Commission therefore recommends the totex

[25] *Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 422, page 194.*

framework be replaced, and capital maintenance and enhancement expenditure be ring-fenced instead. To facilitate this, the Commission appears to favour moving away from Ofwat's outcomes-based approach (where regulation focuses on outcomes such as customer satisfaction, water quality etc.), to an output-based approach (focusing on the delivery of specific schemes and projects). For instance, the Commission views PCDs as having an important role in maintaining any ring-fence.[26]

While Ofgem currently uses an almost identical totex approach to cost recovery to Ofwat, it may be that the extent of read-across from the Commission in this area is surprisingly limited. Despite its adoption of a totex approach, Ofgem has, in practice, been more output-focused than Ofwat. For example, although Ofwat will introduce PCDs from PR24, Ofgem has used them since RIIO-2 (and used other mechanisms for similar purposes in RIIO-1). Because they tie expenditure allowances to the delivery of specific outputs, PCDs and similar mechanisms limit the incentive for companies to reallocate activity to lower cost alternatives (should they exist). Ofgem's approach to benchmarking is also markedly more output-focused than Ofwat's.

In practice, therefore, energy networks lacked some of the flexibility that the Commission identifies as having led to underinvestment in maintenance in the water sector. In future price controls, Ofgem will nevertheless need to demonstrate how it will ensure that asset maintenance and renewal is appropriately funded and the requisite maintenance and renewal activities are undertaken.

Run away

As part of its wider recommendations on asset health, the Commission also recommended looking at introducing a closer link between RCV run-off and the economic depreciation of assets,[27] stating that *"[a]n approach to RCV run-off which is more explicitly linked to a measure of asset condition and depreciation across the entire asset base would reduce the risk that companies are underfunded for asset renewal".*[28]

To some extent, this recommendation follows logically from the Commission's other recommendations; if the totex regime is to be replaced, then the logic of a flexible approach to RCV-run off (and, indeed, capitalisation rates) is much diminished. There are sound reasons of inter-generational fairness to align RCV run-off with economic depreciation, and thereby align customer charges with the consumption of underlying assets.

Further, if run-off (or regulatory depreciation) is materially below the level of economic depreciation, this suggests that the asset base is not being maintained at a stable level. As such, the Commission is correct that comparisons between RCV run-off (or regulatory depreciation) and economic depreciation can provide a useful cross-check on the level of asset maintenance funding. In principle, this applies as much to the energy sector as to water.

There are some limitations to this type of cross-check, however, especially in circumstances where the asset base is growing. Economic depreciation is not a cash expense and in principle, RCV run-off / regulatory depreciation provides companies with allowances to enable investors to recover historical capital investments, *not* to fund future expenditure. As such, an accurate, evidence-based view of forthcoming capital maintenance expenditure requirements will remain essential in energy as well as in water.

[26] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 455, page 205.*
[27] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); recommendation 20, page 208.*
[28] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 464, page 208.*

Taking the WACC back

Although the Commission did not opine on the appropriate level of WACC allowances in the water sector, it did note that they had been low compared to other sectors.[29] The Commission did, however, recommend that the Government consider giving the CMA responsibility for determining a common WACC methodology across all sectors, and setting WACC components that are not sector-specific.[30] This is the only one of the Commission's recommendations on regulation that explicitly applies across regulated sectors. The Commission also recommended that the CMA consider annually updating the relevant components of the WACC, should it take on this responsibility.[31]

The adoption of the same methodology for the common components of the WACC has obvious appeal. The CMA's approach to issues such as the use of low-risk corporate bonds to estimate the risk-free rate has also shown greater balance than most of the sector regulators. Indeed, the Commission notes that the capability for *"objectively considering WACC across sectors already sits with the CMA"*, and that the WACC methodology being set independently of sector regulators will *"increase confidence in the quality of economic regulatory decision-making overall"*.[32]

There are also reasons for caution, however. Moving responsibility for common WACC components to the CMA would limit regulated industries' ability to benefit from a 'second opinion' on the determination of these parameters. While recent CMA precedent on common WACC parameters has generally been closer to appealing companies' views than to sector regulators', there is no guarantee that this will persist indefinitely, as new methodological and data issues arise.

In practice, the CMA may find it difficult to align across sectors, given how many WACC parameters are sector-specific. Only the risk-free rate and total market return are truly common across regulated industries, leaving the bulk of the WACC parameters still to be determined, as we set out in the table below.

Table 1: Parameters of the WACC-CAPM

Parameter	Sector-specific / economy-wide
Gearing	Sector-specific
Cost of new debt	Sector-specific
Cost of embedded debt	Sector-specific
Additional borrowing costs	Sector-specific
New / embedded debt ratio	Sector-specific
Risk-free rate	Economy-wide
Equity beta	Sector-specific
Debt beta	Sector-specific
Total market return	Economy-wide

Source: Economic Insight.

[29] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 485, page 219.*
[30] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); recommendation 23, page 221.*
[31] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 497, page 223.*
[32] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); paragraph 491, page 221.*

There is therefore a risk that achieving greater alignment across sectors over the risk-free rate and total market return would come at the expense of split responsibility for determining the WACC. This, in turn, risks inconsistencies within the calculation of the WACC for each regulated sector. If the CMA does take on responsibility for common WACC parameters, it will be essential for both sector regulators and the CMA to be clear as to the time horizon over which their estimates of WACC parameters are applicable, so that the overall WACC allowance (including the sector specific components) is internally consistent.

Whether or not the CMA takes on the Commission's suggestion of annual WACC updates, the number of different regulatory determinations (across electricity, gas, water, aviation and telecoms) means that frequent updates would be required in any event. This obviously has material implications for the CMA's workload. Moreover, the assessment of WACC parameters is inevitably subject to a degree of subjectivity. An advantage of the five-year price control process in energy (and water) is that the sector regulator can only revise the WACC methodology once every five years. More frequent CMA updates therefore risk a material increase in regulatory discretion, unless other limits are applied.

Lastly, where sector regulators use tools such as indexation, it is unclear how any annually updated CMA determinations of WACC parameters would affect sector regulator decisions. Ofgem's cost of equity allowances are indexed to a risk-free rate measured based on inflation-linked gilt yields. Although the Commission draws a direct parallel between Ofgem's approach to indexation and the CMA providing an annual update, adopting the CMA's risk-free rate determinations in each year would seem inconsistent with the 'mechanistic' spirit of indexation. Given that the CMA has historically looked at a wider range of evidence than Ofgem on the risk-free rate, there appears to be greater scope for subjective judgement in its approach. Retaining a mechanistic approach to indexation that implied a different risk-free rate to the CMA's determination, however, would appear highly questionable.

An appealing prospect

Water companies are subject to full redetermination of their price control by the CMA, rather than the more targeted appeal of particular areas of dispute that applies in energy. The Commission considers that redeterminations are unduly burdensome on companies, the CMA, and Ofwat, and recommends that the dispute process for water companies should change to an appeals regime, similar to that in the energy sector.[33]

Although the energy sector already operates an appeals-based regime, the Commission's findings, however, have some important implications for the future regime in energy. The CMA has shown a great deal of enthusiasm for casting off its regulatory shackles, and transferring regulatory appeals to the CAT. The Commission's endorsement of the current process should give the government pause for thought in considering the CMA's request, especially in view of the Commission's proposal (described above) to give the CMA responsibility for setting common WACC components.

[33] *'Independent Water Commission: Final report.' Independent Water Commission (July 2025); recommendation 24, page 224.*

Conclusion

The Cunliffe Review comes in response to adverse publicity for the water industry and an increasingly strained relationship between companies and the regulator. Energy networks are, thankfully, in a better position as they move into RIIO-3. The water industry's experience, however, provides important lessons for energy regulation. Both Ofgem and companies will need to think about how they can ensure that regulatory decision making is shielded from political pressure, as well as how to avoid the adversarial relationship that has developed in the water industry. The Commission's findings have important implications for economic regulation in general, especially in relation to the risk of under-funding capital maintenance and renewal. Ofgem will need to reflect on how its regulatory model should change in response.

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