Sarah Fox
PR19 Regulatory Redeterminations
Competition and Markets Authority
The Cabot
25 Cabot Square
London E14 4QZ
(by email: waterdetermination2020@cma.gov.uk)

27 January 2021

Dear Ms Fox,

Ofwat Price Determinations – 2019 price review

1. Energy Networks Association (**ENA**) is the voice of the networks, representing the 'wires and pipes' transmission and distribution network operators for gas and electricity in the UK and Ireland. Our members control and maintain the critical national infrastructure that delivers these vital services into homes and businesses.[1] ENA's overriding goals are to promote the UK and Ireland energy networks, ensuring our networks are the safest, most reliable, most efficient and sustainable in the world. The combined regulated asset value of our members totals £66 billion.

2. This letter, and the associated annexes, provide further evidence to the CMA in response to its Cost of Capital Working Papers.[2,3]

3. Given the limited time available for responses, ENA focuses its response on the CMA's proposals for the cost of equity where there is greatest potential for read-across for energy networks. Where appropriate, this response cross-references previously submitted evidence rather than repeating it here.

The CMA has failed to take account of evidence provided by ENA that suggests that the cost of equity proposed in its PR19 Provisional Findings[4] is too low

4. Following discussions at our hearing on 7 December 2020, ENA shared with the CMA Oxera's consideration of using the differential between observed asset risk

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1 This submission is on behalf of the following ENA members: Cadent, Electricity North West, National Grid, Northern Gas Networks, Northern Powergrid, Scottish & Southern Electricity Networks, SGN, SP Energy Networks, Wales & West Utilities, Western Power Distribution and UK Power Networks. More information on the ENA is available here: http://www.energynetworks.org/.

2 Competition and Markets Authority, *Cost of Capital Working Papers Executive Summary*, January 2021 available here: https://www.gov.uk/cma-cases/ofwat-price-determinations (**WACC Consultation**). ENA recognises that the CMA has also published a cost of debt working paper. As set out in para 3 above, given the limited available time we do not focus on that report.

3 Competition and Markets Authority, *Choosing a point estimate for the Cost of Capital Working Paper*, January 2021 available here: https://www.gov.uk/cma-cases/ofwat-price-determinations (**Point Estimate Consultation**).

4 The CMA, *Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations - Provisional Findings*, 29 September 2020 available here: https://www.gov.uk/cma-cases/ofwat-price-determinations (PR19 Provisional Findings).

premium (**ARP**) and debt risk premium (**DRP**) from market evidence as a cross-check for the appropriate level of the allowed cost of equity.[5,6]

5. Oxera's September 2020 ARP–DRP report[7] concludes that:

   - The benchmarks for ARP−DRP can be employed not only as a cross-check to cost of equity, but also to obtain conservative estimates of the allowed Weighted Average Cost of Capital (**WACC**), because of the downward bias in asset beta estimation.
   - In the context of Ofgem's RIIO-2 cost of equity allowance in its Draft Determination (which was the focus of the report at the time), after addressing Ofgem's concerns set out in the RIIO−2 Sector Specific Methodology Decisions (**SSMD**), Oxera's ARP-DRP analysis supported a conclusion that Ofgem's cost of equity allowance fell below that implied by (i) contemporaneous market evidence for the cost of debt and the risk-free rate; and (ii) a mixture of contemporaneous market evidence and regulatory precedent on the asset beta and the Total Market Return (**TMR**).
   - The ARP−DRP differentials implied by past regulatory allowances (for energy companies – i.e. RIIO−1, NIE RP5 and NIE RP6) were broadly in line with those implied by contemporaneous market evidence.

6. ENA and Oxera consider that this ARP–DRP analysis provides a helpful and important market evidence-based cross-check to the outcome of the Capital Asset Pricing Model (**CAPM**).

7. The CMA appears to have given no consideration to this important new cross-check.

8. Oxera's September 2020 ARP-DRP report was focussed on evidence for the energy sector. To assist the CMA, ENA has asked Oxera to undertake equivalent analysis for the water sector, in a report annexed to this letter.[8] Oxera's analysis shows that the ARP−DRP differential implied by the CMA's PR19 Provisional Findings is at the 37th percentile, which is higher than that of Ofwat's PR19 Final Determination, but still below the median of the benchmarks.[9]

9. ENA and Oxera anticipate that the indicative changes to the WACC outlined in the CMA's Cost of Capital Working Papers could, if finally determined, lead to an ARP−DRP differential at an even lower percentile.

10. Oxera has also undertaken a sensitivity that updates the TMR assumption used to set the benchmarks. In this sensitivity, Oxera uses a 6% TMR (RPI-real) to align the

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5 Oxera, *Asset risk premium relative to debt risk premium*, 4 September 2020.
6 Oxera, *Risk premium on assets relative to debt*, 25 March 2019.
7 Oxera, *Asset risk premium relative to debt risk premium*, 4 September 2020.
8 Oxera, *The Asset Risk Premium relative to Debt Risk Premium for PR19*, 26 January 2021 (**ARP-DRP Report**). Attached as Annex 1.
9 ARP-DRP Report, figure 1.1.

benchmarks with the PR19 Provisional Findings. As set out elsewhere in this response, ENA and Oxera disagree with the CMA's TMR assumption. Oxera finds, perhaps unsurprisingly (given that the same TMR is now being used for both the benchmarks and the Provisional Findings), that the PR19 Provisional Findings are at the 53rd percentile but that the Ofwat Final Determination is significantly below this. The CMA consultation position would be at the 39th percentile even when the CMA's erroneously low TMR assumption is adopted.[10]

11. Having carefully considered the proposals in the Cost of Capital Working Papers, ENA continues to believe that the CMA should determine a cost of equity that is higher than the cost of equity proposed in its PR19 Provisional Findings.

ENA agrees with the CMA that aiming up within its cost of equity range is needed to create a supportive long-term investment environment and to avoid an exit of capital from the sector

12. ENA agrees that the CMA should consider the need to create a supportive long-term investment environment and that the allowed return needs to be set in a way that encourages the right level of investment as part of its consideration of the appropriate cost of equity point estimate.[11]

13. ENA recognises and agrees with the CMA's long-term concerns about an exit of capital from the sector, over time, if the cost of capital is set too low.[12] ENA also agrees that setting the cost of equity too low may prompt a move towards a low-investment environment, with investors seeking to remove capital and shrink rather than grow or maintain the RCV.[13]

14. ENA agrees with the CMA that there is a risk that '*a low WACC over multiple periods will lead to an opex bias and a gradual reduction in investment*'.[14] ENA also agrees that there is a risk that there will be underinvestment if the expected return on capital does not provide incentives to reinvest capital and maintain or grow the asset base over time.[15] This is the case for ongoing, routine investment and is an even more important consideration where there is an expectation of a significant ramp-up in investment due to net zero and other requirements. ENA notes the CMA's observation that setting the cost of capital too low would give rise to '*long-term risks to water customers (and the environment) associated with the performance of deteriorating or inadequate water infrastructure*'.[16]

15. ENA members do not have sufficient knowledge of the water sector to comment further on associated risks for PR19, but they agree with the CMA that the

10 ARP-DRP Report, figure 1.2.
11 Point Estimate Consultation, para 103.
12 Point Estimate Consultation, para 108(a).
13 Point Estimate Consultation, para 47.
14 Point Estimate Consultation, para 48.
15 Point Estimate Consultation, para 108(b).
16 Point Estimate Consultation, para 47.

consequences for consumers of under-investment in energy are considerable and that scope exists for energy companies to opt to defer or cancel investment if returns are insufficient.[17] This scope to defer or cancel investment exists in the short term as well as in the proposal of future investment through the development of medium and long term investment plans.

The CMA should aim up to a greater extent to reflect the socially optimal level of aiming up

16. ENA notes that the 80th percentile that the CMA seems to be seeking to achieve is towards the lower end of aiming up suggested by models.[18]

17. The appropriate level of aiming up that is required to avoid customer detriment has been modelled in evidence previously submitted by ENA.[19] These models consider the socially optimal level of aiming up in the face of uncertainty about the precise level of the required cost of capital.

18. These models support higher levels of aiming up than the CMA applied. The logic for aiming up in these models applies equally to companies considering short, medium and long term investment decisions. The models show that the 75th percentile would be the minimum that would be expected to take account of the need to promote investment. Optimal levels of aiming up of greater than 90% are commonly calculated, especially in scenarios that consider low demand elasticity.[20] Given the low elasticity of demand in the water (and energy) sectors, and significant consequences for consumers of under-investment, a target percentile above 90% would be more appropriate.

The CMA has not exercised sufficient caution when proposing changes to the cost of equity due to methodology changes rather than market changes

19. ENA agrees with the CMA that it is appropriate to exercise caution when contemplating significant changes to the cost of equity due largely to changes in methodology rather than underlying evidence. The CMA states that *'[i]t would be normal regulatory practice to implement such significant changes gradually over time, or at least to recognise that there can be risks from implementing sharp changes too quickly*',[21] and ENA concurs with this; however, the CMA has failed to do this.

20. In particular, the reduction in the cost of equity from PR14 to PR19 arises largely due to methodological changes rather than any change in underlying data. As set out

17 Point Estimate Consultation, para 47.
18 Point Estimate Consultation, para 69.
19 See, e.g., section 4 of ENA June Submission, and the report of Frontier Economics referred to therein and enclosed as Annex 6 to ENA June Submission.
20 See, e.g., UKRN (2018), *Estimating the cost of capital for implementation of price controls by UK regulators*, 6 March, Oxera, *Is aiming up on the WACC beneficial to consumers?* Prepared for Heathrow Airport Limited, 17 April 2020. Ian M Dobbs, *Modelling Welfare loss Asymmetries Arising from Uncertainty in the Regulatory Cost of Finance*, 2011.
21 Point Estimate Consultation, para 76.

elsewhere in this response, the CMA takes false comfort that its proposals are in line with market expectations.

21. The CMA must take the extent of these fundamental methodological changes into account in both establishing its parameter ranges and in its selection of a point estimate. To do otherwise would risk undermining investor confidence in regulatory consistency.

The CMA's assessment of the appropriate extent to aim up above the mid-point of its range places too much weight on unreliable assumptions about the probability distribution of the CMA's cost of equity range

22. ENA agrees with the CMA that there is '*substantial uncertainty over the level of the WACC'*.[22] However, ENA does not agree that this uncertainty is adequately recognised in the ranges proposed by the CMA in its PR19 Provisional Findings.

23. There is also considerable uncertainty about the probability distribution of the CMA's cost of equity range. The CMA is right to aim up to take account of these uncertainties.

24. In forming its view on the appropriate extent to aim up, the CMA has relied on two inappropriate assumptions:

- An unreliable assumption that there is a comparable likelihood of the actual value being higher or lower in the cost of equity range proposed in its PR19 Provisional Findings.
- An inappropriate modelling approach to approximate the probability distribution of the cost of equity.

25. The following sections consider these issues in more detail.

There is considerable evidence that refutes the CMA's assertion that there is a comparable likelihood of the actual value being higher or lower in the cost of equity range proposed in its PR19 Provisional Findings

26. ENA notes that the CMA has not updated its parameter ranges in this consultation and that it is still considering evidence submitted following its PR19 Provisional Findings.[23] ENA has submitted significant evidence in response to those PR19 Provisional Findings regarding the CMA's CAPM parameter assumptions.[24] This evidence is not referred to in the Point Estimate Consultation, but it appears from the conclusions in the consultation that the CMA is not currently proposing to make material changes to the parameters based on ENA's evidence.

22 Point Estimate Consultation, para 42(a).
23 WACC Consultation, para 31.
24 See ENA's submissions to the CMA dated 26 October, 4 December 2020 and 11 December 2020.

27. ENA disagrees with the CMA's conclusion that it has '*picked ranges which, taken together, balance close to the mid-point for the cost of equity*'.[25] As explained in ENA's response to the CMA's PR19 Provisional Findings, the errors that the CMA has made in determining its CAPM parameters have the effect of creating a cost of equity range that is significantly skewed downwards.[26]

28. ENA agrees with the CMA that it is most likely that the actual Risk Free Rate (**RFR**) lies higher than the mid-point of the CMA's PR19 Provisional Findings range.[27] ENA also agrees that it is most likely that the actual debt beta lies towards the lower end of the CMA's range.[28] This is consistent with ENA's previously submitted evidence.[29,30]

29. ENA strongly disagrees with the CMA's view that its TMR range in its PR19 Provisional Findings '*may provide an upward biased TMR estimate*'.[31] As set out in ENA's response to the PR19 Provisional Findings,[32] the CMA's real TMR range is artificially skewed downwards by the cumulative effect of four individually material errors:

- errors in deflating nominal TMR;
- errors in averaging historical values, including the CMA's inappropriate rejection of the arithmetic average and use of only downwards-biased estimators;
- incorrectly dismissing the Bank of England's dividend discount model and survey evidence, both of which show that the range should be higher, whilst simultaneously placing weight on other (out of date) forward-looking evidence; and
- failing to consider evidence regarding historical TMR data sources being artificially reduced and biased downwards.

30. Accordingly, the 'most likely' RFR and TMR assumptions are likely to lie above the mid-point of their respective ranges set out in the PR19 Provisional Findings before correcting in accordance with ENA's submissions. The consequential effect of this is that the most likely cost of equity is also likely to lie materially above the mid-point of the CMA's range.

31. For these reasons, ENA contends that the CMA did not aim up by the extent that it purported in its PR19 Provisional Findings. Had it selected a more balanced cost of

25 Point Estimate Consultation, para 75.
26 See ENA's submissions to the CMA dated 26 October, section 9(b).
27 Point Estimate Consultation, para 72(d).
28 Point Estimate Consultation, para 72(b).
29 See ENA's submissions to the CMA dated 26 October, section 5 (RFR).
30 See ENA's submissions to the CMA dated 26 October, section 7 (debt beta).
31 Point Estimate Consultation, para 74.
32 See ENA's submissions to the CMA dated 26 October, section 4 (TMR).

equity range, the point estimate that the CMA proposed in its PR19 Provisional Findings would have been much closer to the middle of the range.

32. The CMA should correct its parameter ranges in its Final Determination pursuant to ENA's evidence referred to above and should then aim up to the required degree from the mid-point of these corrected cost of equity ranges.

The CMA is wrong to rely on an inappropriate modelling approach to approximate the probability distribution of the cost of equity, resulting in an inappropriate reduction to the extent of aiming up

33. The CMA proposes to rely on a modelling approach to estimate the probability distribution of its cost of equity range.[33] This modelling is based on a proposal by Ofgem to use Monte Carlo analysis to indicate the likely distribution of the cost of equity.[34] Fundamentally, the CMA suggests that it can rely on the outcome of this modelling to assume that combining uniform distributions of CAPM parameters results in a normal distribution of the cost of equity.

34. ENA is not aware of any regulatory precedent for using such an approach.

35. ENA has previously provided evidence to the CMA setting out the shortcomings of Ofgem's original proposal.[35]

36. The CMA's proposed modelling creates a veneer of propriety, but is in reality based on considerable unfounded assumptions which undermine its application. For example:

- the parameter ranges adopted by the CMA generally reflect more than one estimation methodology, each of which would have its own estimation error. For example, the RFR range is based on yields on both government and AAA-rated corporate bonds. In effect, there are multiple distributions of estimation error embedded in each parameter range, and such an approach cannot be described accurately in terms of simple probability distributions;

- assuming a normal distribution for beta[36] contradicts the CMA's intent of modelling based on non-normally distributed parameter ranges;[37] and

- the CMA's modelling appears to assume small standard errors. The net effect is that the debate around using a normal distribution in the context of 'aiming up', which clusters most observations around the mean, is unrealistic and explicitly eliminates large (and realistic) ranges of the parameter estimates. Specifically, the 0.0067 standard deviation that is assumed for the asset beta implies that the

33 Point Estimate Consultation, para 68.
34 Point Estimate Consultation, paras 67(b) and 68.
35 Oxera, *Distributional assumptions for the cost of capital parameters*, 4 December 2020.
36 Point Estimate Consultation, footnote 29.
37 Point Estimate Consultation, para 68.

CMA believes that there is a 95.45% chance that the asset beta must be between 0.2766 and 0.3034. This effectively cuts off the top third of the CMA's asset beta distribution.

37. Furthermore, the modelling also does not have enough independent observations to assume the cost of equity estimates will converge to a normal distribution after multiple simulations as in a Monte Carlo analysis. The CMA has made a single provisional determination and will now make a final determination, rather than making many draws from a random distribution. In these circumstances, a Monte Carlo simulation gives false comfort that the cost of capital is more likely to be towards the middle of the range.

38. To illustrate this point, Oxera has simulated a simple scenario where it has assumed that equity beta, TMR, and RFR are uniformly distributed, and calculated a cost of equity based on the CAPM. The results of Oxera's analysis, along with further detail on the shortcomings of the CMA's Monte Carlo analysis, are set out in an Annex to this letter.[38] It is apparent that the results rarely resemble a normal distribution.[39] The CMA is therefore wrong to assume that '*there is a greater probability that the right estimate is towards the middle of the range'*.[40]

39. The Oxera simulation shows how the estimates could be distributed if the CMA had 30 attempts at estimating the cost of equity, rather than the two attempts the CMA actually has. The CMA simply does not have enough independent repetitions of the estimation exercise to justify treating its cost of equity range as a normal distribution for the purposes of calibrating the point estimate. Given that targeting the 80th percentile already creates a 1-in-5 chance that utility investors are undercompensated, relying on such uncertain distributional assumptions to lower the point estimate creates further risk of disincentivising investment and harming customers.

40. Additionally, there appears to be a calculation error in the modelling that the CMA has undertaken. The CMA has failed to adjust its required level of aiming up to take account of the fact that its modelled mean asset beta is below the mid-point of its asset beta range. This results in a cost of equity that is lower than would be determined if the asset beta mean was assumed to be at the mid-point. This is explained further in Oxera's report. [41]

41. The CMA must not rely on the results of these models in determining the appropriate extent of aiming up.

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38 Oxera, *Choice of a point estimate*, 26 January 2021. Attached as Annex 2.
39 Oxera, *Choice of a point estimate*, 26 January 2021, section 1.2.3 and Appendices A and B.
40 Point Estimate Consultation, para 116.
41 Oxera, *Choice of a point estimate*, 26 January 2021, section 1.2.4.

ENA agrees that some adjustments to aiming up are justified to reflect negative Outcome Delivery Incentive (ODI)-related returns on average

42. ENA agrees with the CMA that '*Incentives are part of normal regulation and operational outperformance is a desirable outcome. If companies are able to outperform, this delivers benefits to customers both from the actual improvements and from Ofwat being able to use the evidence in its comparisons in future periods'*.[42]

43. ENA also agrees with the CMA that it would be inconsistent for Ofwat to both set new and increasingly stretching targets for Performance Commitments in PR19 and also to assume that companies will outperform against those targets.[43]

44. When considering the case to aim up to reflect asymmetry, ENA agrees that the CMA is correct to take account of the need for an adjustment in circumstances where there are downside-only risks to an otherwise balanced package of incentives, meaning that the expected return for an average investor will be below the cost of capital.

45. ENA notes that the CMA makes reference to Ofgem's approach to adjusting allowances to take account of assumed future outperformance.[44] ENA does not comment on the details of Ofgem's approach here as it does not seem to us to be directly relevant to the CMA's thinking. However, if it would be helpful to the CMA, ENA can provide considerable evidence to the CMA demonstrating that Ofgem's approach is misguided and flawed.

The CMA's approach to interpretation of 'cross-checks' is internally inconsistent

46. ENA agrees with the CMA that Market to Asset Ratio evidence does not provide sufficient evidence of the appropriate WACC for the entire water sector or for where in the top half of the range to select a point cost of equity.[45]

47. ENA also agrees with the CMA that caution is warranted when interpreting broker forecasts of the cost of equity.[46]

48. First, these broker forecasts only concern a few UK listed water companies and hence may not be representative of the UK water sector. Second, the brokers' reports, in general, lack the level of detail for external parties to assess the accuracy and robustness of their cost of equity analyses.[47] Third, due to such lack of detail, there could be circularity between broker assumptions of investors' required returns and regulators' allowed returns. Lastly, the relative importance of the cost of equity estimate to analysts' overall stock valuation differs from broker to broker depending

42 Point Estimate Consultation, para 81(a).
43 Point Estimate Consultation, para 81(b).
44 Point Estimate Consultation, paras 80, 81, 110.
45 Point Estimate Consultation, para 91.
46 Point Estimate Consultation, para 93.
47 Only Barclays has presented a bottom-up estimate of cost of equity parameters. It also worth noting that Barclays' 6.5% cited by the CMA refers to the mid-point forecast of the analyst while the CMA adopts an above-mid-point estimate. See Barclays (2020), *Pennon / UK Water – Reinstating rating on Pennon at EW, 1060p PT. Capital allocation is key. UU is preferred*, 25 September, page 68.

on the adopted methodologies, which may affect the thoroughness and robustness of analysts' cost of equity estimates.[48]

49. Given the identified shortcomings of the 'cross-checks' considered by the CMA, it is equally inappropriate for the CMA to draw any conclusions from those data sources regarding whether or not the cost of capital has been set too low. In relying on these analyses,[49] the CMA has taken false comfort in its proposals being sufficient.

The CMA's approach to securing financeability is too narrow

50. ENA agrees with the CMA that financeability should be a valuable cross-check to the cost of capital[50] and that '[t]*he overall determination, in the round, needs to include a consideration of whether the WACC assumptions are consistent with the credit rating assumed'*.[51] ENA also agrees with the CMA that '*WACC is the primary factor in the redetermination ensuring that an efficient firm can finance its functions*'.[52]

51. ENA recognises that the CMA has not directly sought views on its approach to financeability in this latest consultation, apart from the principle that the determination of cost of equity will be subject to an analysis of financeability.

52. In undertaking its assessment against ratios used by credit rating agencies, the CMA should ensure that it provides a margin above the minimum credit rating thresholds. Without such headroom, the notional company would be positioned on the boundary between BBB+/Baa1 and BBB/Baa2. This would reflect a weaker creditworthiness than the simple average of yields on the iBoxx A and BBB-rated indices, thereby already creating an inconsistency with the cost of debt allowance in the WACC calculation. If the calculated credit ratios only achieve the minimum thresholds, there is no buffer against a rating downgrade being triggered by downside shocks, cash flow timing differences, within price control tightening of thresholds, or downgrading of the qualitative factors which influence the overall assessment of credit quality.

53. The CMA should note that a settlement where debt credit ratios are marginal would also undermine equity financeability. Furthermore, the ENA is concerned that the CMA has failed to acknowledge that adequacy of ratios consistent with the target credit rating is a necessary but insufficient financeability test to ensure that a company is financeable from the perspective of equity investors.

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48 For example, JP Morgan applies a combination of the sum of parts, dividend discount model and M&A scenario valuation methodologies in its report on Pennon Group, whilst only dividend discount model relies on the cost of equity estimate. See J.P. Morgan (2020), *Pennon: FY20 - Confident AMP7 outlook but capital return clarity needed, remain Neutral*, 4 June, p. 2.

49 Point Estimate Consultation, paras 94 and 105.

50 Point Estimate Consultation, para 113.

51 Point Estimate Consultation, para 97.

52 PR19 Provisional Findings, para 10.58.

It is important that the process is now concluded swiftly

54. ENA urges the CMA to publish its Final Determination by mid February, in line with its currently published administrative timetable. It would create very considerable inefficiency if energy companies had no opportunity to view the outcome of the PR19 redetermination process before their own deadline for lodging any appeal.

55. I confirm that this letter and the accompanying annexes do not contain any confidential information, and that we are content for it to be published in full on the CMA's case page.

56. We should be grateful if you could acknowledge receipt of this letter.

Yours sincerely,

[redacted]

David Smith
Chief Executive