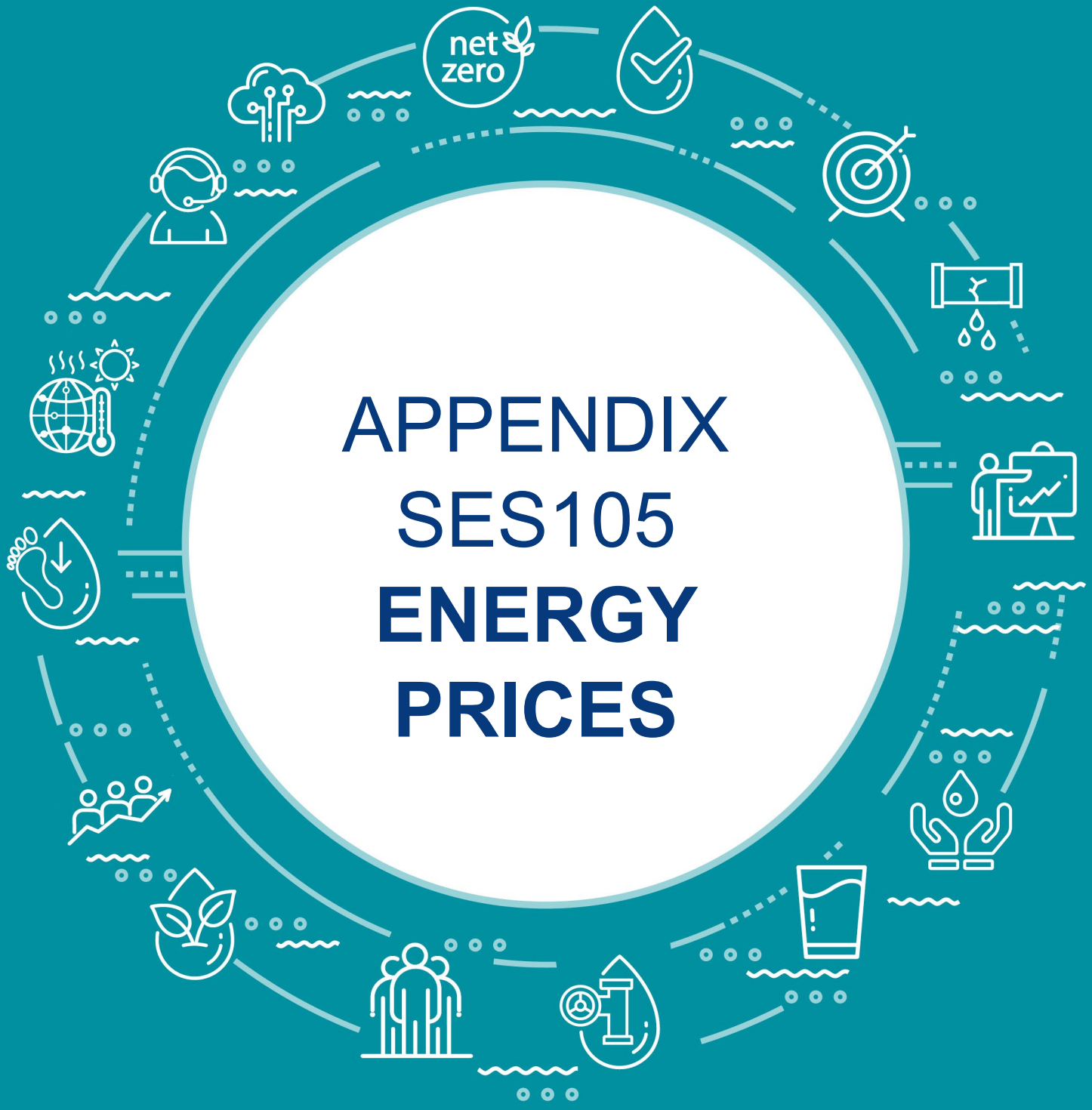
ses WATER



APPENDIX SES105 **ENERGY PRICES**

Contents

APPENDIX SES105: ENERGY PRICES

This representation explains various issues we have found with Ofwat's proposed energy cost adjustment and ex-post true-up.

While we are supportive of the principles behind the energy cost adjustment and are also highly supportive of the proposed ex-post true-up, there are several substantive issues with how the energy cost adjustment has been calculated and applied by Ofwat in its modelling.

Many of these issues affect the whole sector, though some are likely to affect us more than other companies. We estimate that Ofwat's approach to designing the adjustment creates a funding gap of £23.4 million in our PR24 Business Plan.

The first issue relates to the counterintuitive result of the energy price adjustment having a net negative effect over AMP8.

This is due to an inconsistency between the index used to uplift energy prices to 2022-23 and the index used to apply a Real Price Effects adjustment from 2022-23 onwards. While the former is a hedged index, the latter is an unhedged forecast, and, owing to the way the two indices have been combined, Ofwat's resultant forecast exaggerates the expected reduction in energy prices over AMP8. While this ought to correct itself through the ex-post true-up, it leaves a material funding gap that will need to be financed by company balance sheets until the end-of-period reconciliation.

The second issue relates to Ofwat's application of the energy price adjustment to benchmark modelled costs only and not to any of the cost adjustments.

In its assessment of our base cost adjustment claims (e.g., claims related to our requirement to soften the water we supply to our customers and the relatively high power costs we incur due to our high pumping requirement) Ofwat has declared that it has applied an energy price adjustment to the associated costs. However, it does not appear to be the case from our analysis of Ofwat's modelling.

We consider both issues are resolvable through technical fixes. The rationale for these changes is compelling and we request Ofwat does so as part of its final determinations. In this representation, we provide suggestions for how this can be achieved. Should these technical fixes be applied, we consider that Ofwat's draft determination adjustment for us of -£1.3 million over the AMP will increase to a +£22.1 million adjustment, resulting in a net increase of £23.4 million relative to the draft determination allowance.

A. Introduction and Context

1. In Appendix SES005B of our Business Plan submission, we provided substantial detail on how we had modelled energy prices, both in relation to setting of our cost forecasts and to the benchmarking of the efficiency of our plan. For the former, we used energy price forecasts that reflected our specific circumstances in relation to our hedging position. For the latter, we included an energy price adjustment in recognition that the base cost models did not adequately account for recent increases in energy prices.[1]
2. However, in our Business Plan submission, we also recognised that it is unlikely to be feasible for Ofwat to produce an energy price adjustment that faithfully reflects the specific circumstances for each company. Therefore, we suggested Ofwat make a notional adjustment instead.
3. Given on-going uncertainty around the future trajectory of energy prices, we also separately proposed an ex-post true-up to reduce our exposure to changes in energy prices that are largely outside our control.[2]

> "The future outlook for power and energy prices, and input prices in general, is very uncertain. As such we consider that Ofwat should introduce a form of ex-post adjustment 'uncertainty mechanism' that will align price control allowances with outturn rather than forecast energy price trends. This will provide protection to both consumers and companies during what is likely to be a very volatile period and will help to mitigate the risk of unintended consequences."
>
> *SES Water (2023)*

4. We welcome that Ofwat has accepted our view that the base cost models do not adequately reflect recent movements in energy prices, such that a separate energy adjustment is required.
5. We also welcome Ofwat's proposed introduction of an energy ex-post true-up mechanism that will partially protect us from future movements in energy prices.
6. Nevertheless, we make this representation to provide feedback on the specifics of how the energy adjustment has been applied to our costs. Specifically, we wish to highlight the counterintuitive result within the draft determinations, where Ofwat has reduced our allowance on the basis that it expects real energy prices over AMP8 to be lower than the average over the past decade. While we intuitively expect energy prices to fall from recent peaks, we do not expect it to fall as significantly as implied by Ofwat's adjustment. Ofwat's approach creates unnecessary pressure on our balance sheet.
7. We propose two key changes to how Ofwat has modelled the energy price adjustment:
   - **(a)** That Ofwat adjust how it combines the historical DESNZ energy price index with the forecast Ofwat/CEPA-produced index, to correct the inaccurate assumption that both indices have the exact same value for 2022/23; and
   - **(b)** That Ofwat applies the energy price adjustments to all base costs and not just the specific subset of costs that are benchmarked.
8. The remainder of this representation is structured as follows:
   - Section B provides further context around our energy procurement strategy, particularly in the context of Pennon's recent purchase of SES Water;

[1] See differences in Table 19 and Table 20 within SES005B: https://seswater.co.uk/-/media/files/seswater/about-us/publications/pr24/appendices/ses005-explaining-our-costs.pdf
[2] SES Water (2023) PR24 Business Plan, Appendix SES005B: Cost efficiency benchmarking, paragraph 87. https://seswater.co.uk/-/media/files/seswater/about-us/publications/pr24/appendices/ses005-explaining-our-costs.pdf

- Section C outlines why we consider that the historical and forecast series, used to construct energy price index for estimating the energy price adjustment, are internally inconsistent with each other;
- Section D provides further detail on why we consider the energy price adjustment has been applied inappropriately; and
- Section E presents conclusions and summarises what the impact of a corrected energy price adjustment would be on our cost allowances.

B. Our current expectations of our energy prices in AMP8

Hedging strategy in the current AMP

9. [redacted]

10. [redacted]

11. [redacted]

Energy prices in the next AMP

12. [redacted]

13. [redacted]

14. [redacted]

C. Inconsistencies in Ofwat's energy prices indices

Ofwat's approach to the energy price adjustment in its draft determination

15. Ofwat's energy price adjustment, which has been informed by a CEPA report,[3] consists of two discrete steps:

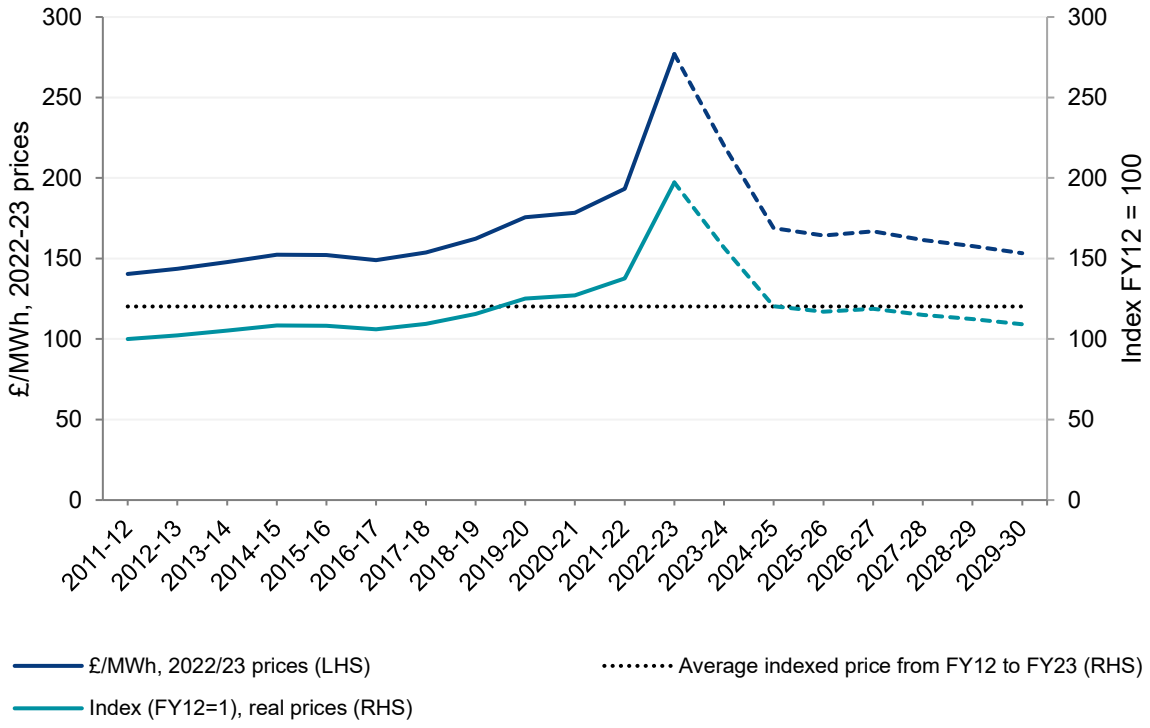
    (a) An energy price uplift that brings modelled base costs to 2022/23 energy prices, and

    (b) An energy real price effect (RPE) that adjusts modelled base costs from 2023/24 onwards, in line with the expected trajectory of energy prices.

16. The energy price uplift uses a historical data series of industrial gas and electricity prices published by DESNZ, while the energy real price effect uses wholesale gas and electricity prices derived from forward contract prices adjusted to include estimates of third-party costs.

17. The combined series results in a forecast of energy prices that implies energy prices in AMP8 will be lower, in real terms, than the average price observed over the period 2011/12 to 2022/23. This is shown in the figure below.

Figure 1: Ofwat / CEPA combined energy price series



Source: SES Water analysis

Inconsistencies in Ofwat's energy prices indices

18. CEPA and Ofwat acknowledge that there is an inconsistency between the historical data series and the forecast series as the former represents hedged electricity prices while the

[3] CEPA (2024) PR24 Draft Determinations: Frontier Shift, Real Price Effects and the energy crisis cost adjustment mechanism. Available at: https://www.ofwat.gov.uk/wp-content/uploads/2024/07/CEPA-frontier-shift-real-price-effects-and-the-energy-crisis-cost-adjustment-mechanism.pdf

latter represents an unhedged price.[3] This risk was recognised in our own Business Plan submission,[4] where we stated that combining the historic series with an unhedged forecast would mean that we are implicitly assuming either:

(a) spot rates are broadly aligned with average hedged prices: or

(b) most industry hedges will have expired by 2023/24 onwards.

19. While we recognise that these are both strong assumptions, we also understand the challenge of developing a forecast of hedged prices.

20. However, there is a further inconsistency with the approach Ofwat and CEPA have taken. Ofwat and CEPA have assumed that the implied energy price in 2022/23 under the historical DESNZ series is equivalent to the 2022/23 energy price in the forecast unhedged series. In other words, Ofwat and CEPA have assumed that the average price paid by industrial customers in 2022/23 is equivalent to the spot price plus third-party costs. This is a very strong assumption, and as we demonstrate later, an incorrect one.

21. Ofwat have acknowledged this assumption in its response to a query raised by Severn Trent Water [emphasis added]:

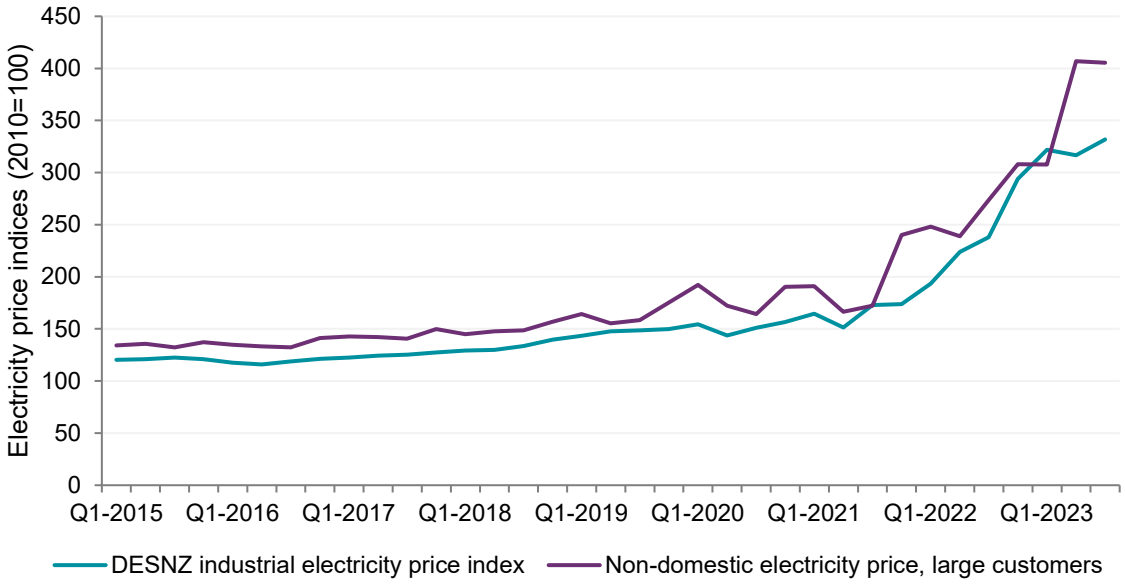
> As detailed in CEPA's report, CEPA acknowledge that the DESNZ industrial energy price indices used for the uplift include the impact of hedging, whereas the Ofgem day ahead prices plus third-party costs used as the starting point of the RPE calculation do not. This 'inconsistency' as you describe it is not an error. **As DESNZ industrial energy price indices are not expressed in £/MWh or p/therm, they could not be used as the starting point for the RPE.**

22. While it is true that the DESNZ industrial energy price indices are not expressed in £/MWh or p/therm terms, it is incorrect to say that they could not be used as a starting point for the RPE. In addition to publishing the indices in index form, DENSZ also publish a separate series of quarterly energy prices for non-domestic customers,[5] that is expressed in £/MWh and p/therm terms. While it is not clear whether the series are constructed from the same source data, it is apparent that the two series move together closely enough that the series can be used to convert the industrial energy price indices into ones expressed in cost per energy unit. We show a comparison of the two data series in Figure 2 overleaf.

[4] SES Water (2023) Appendix SES005: B. Cost Efficiency Benchmarking, p.47. Available at: https://seswater.co.uk/-/media/files/seswater/about-us/publications/pr24/appendices/ses005-explaining-our-costs.pdf

[5] DESNZ (2024) Gas and electricity prices in the non-domestic sector. Available at: https://www.gov.uk/government/statistical-data-sets/gas-and-electricity-prices-in-the-non-domestic-sector

Figure 2: Comparison of DESNZ industrial electricity price index and non-domestic electricity prices for large customers



Source: DESNZ data (2024)

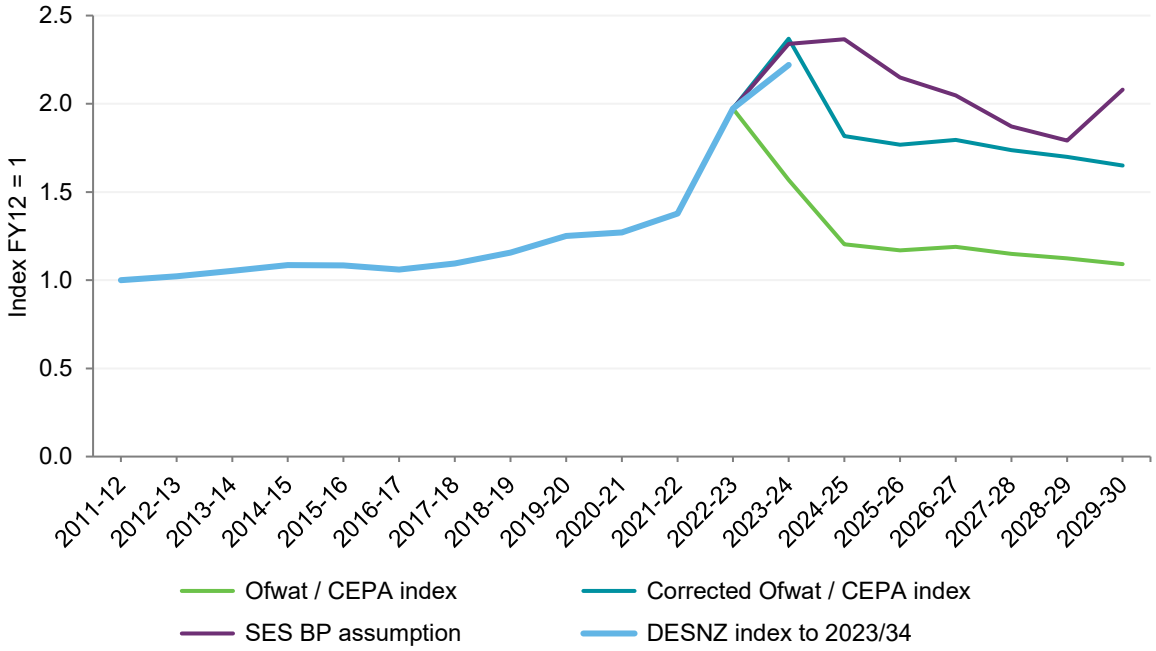
23. Indeed, this is what we did in our Business Plan.[6] We used the price series for large electricity customers from DESNZ to convert the series into one expressed in £/MWh. The series for large electricity customers represents a consumption band that most closely reflects our own consumption levels, at 20,000 MWh to 69,999 MWh per annum. This resulted in an estimate of 2022/23 prices of £183.3/MWh,[7] which compares with Ofwat/CEPA's estimate of £277.0/MWh.

24. The figure below shows what impact this has by comparing the forecast electricity series used by Ofwat in its draft determinations (labelled "Ofwat/CEPA index") with an equivalent series where 2022/23 prices are assumed to be our estimate of £183.3/MWh (labelled "corrected Ofwat/CEPA index"). For comparison, we also roll forward the DESNZ index now that we have outturn data up to Q1 2024 and show our Business Plan assumption which was based on Cornwall Insight forecasts from last summer.

[6] SES Water (2023) Appendix SES005: B. Cost Efficiency Benchmarking, p.47. Available at: https://seswater.co.uk/-/media/files/seswater/about-us/publications/pr24/appendices/ses005-explaining-our-costs.pdf

[7] To estimate this, we took the Q1 2023 price per KWh excl. CCL for large customers at 20.88 p/KWh and added on estimated CCL costs at 0.775 c/KWh, which results in a cost incl. CCL of 21.655 p/KWh or £216.55 / MWh. We then assumed that this price of £216.55 was represented by the Q1 2023 index value from the DESNZ industrial energy price index at 327.5. Finally, we used the 2022-23 index value of 277.2, to convert the price in Q1 2023 of £216.55 / MWh to an average 2022-23 price of £183.32 / MWh.

Figure 3: Comparison of different energy price forecasts



Source: SES Water analysis
Note: The SES Water Business Plan assumption is based on the electricity price forecast produced for us by Cornwall Insight

25. The figure shows the materiality of the assumption around the average energy price in 2022/23. This single assumption around the implied 2022/23 price – as shown by the series labelled "Ofwat/CEPA index" and "Corrected Ofwat/CEPA index" – leads to very different estimates of the energy price at the end of AMP8, with our proposed correction to the Ofwat/CEPA series resulting in a 2029/30 electricity price that is 51% higher than what was assumed by Ofwat/CEPA in the draft determinations.

26. The figure also shows that our proposed correction to the series more closely reflects outturn movements in the energy price paid by industrial customers between 2022/23 and 2023/24, as shown by the DESNZ index. It also shows that the approach taken by Ofwat/CEPA has materially overestimated the reduction in energy prices.

27. While it can be argued that this issue will correct itself in the ex-post energy true-up, the materiality of the discrepancy means that there is a very large revenue gap that needs to be financed by companies. This creates a cashflow risk that Ofwat is requiring companies to manage. For us, this discrepancy alone, results in a roughly £14 million lower revenue allowance, which is material enough to pose a financeability challenge given it represents over 3% of our Business Plan totex.

28. We consider that this approach can be easily remedied by adopting a similar approach to the one we used in our Business Plan for estimating the energy price in 2022/23.

Estimates of third-party costs

29. We have not reviewed in detail the company submitted estimates of third-party costs, and how Ofwat has used them to estimate delivered electricity prices. However, we would like to stress the importance of appropriately considering third-party costs given they make up a substantial portion of total electricity costs (currently in excess of 60% of our delivered energy cost). We recommend Ofwat validate its forecasts against independent projections of third-party costs including network costs and policy levies.

The Baringa report for Water UK

30. A report from Baringa,[8] on Ofwat's treatment of energy costs in its draft determinations, broadly aligns with our arguments presented in this section.

31. While Baringa also agrees with the approach on how energy costs are treated, it finds the implementation to be 'flawed', leading to energy cost allowances that are likely to be lower than what companies will be paying for energy. The ex-post true-up mechanism is considered an insufficient solution due to the cash-flow timing issues companies are left to manage.

32. Moreover, Baringa finds Ofwat's proposal in its draft determinations to be inconsistent with its principles:

> Ofwat knowingly setting allowances that are likely to be 'predictably' incorrect is inconsistent with funding efficient costs through ex-ante allowances.

[8] Baringa (2024), *Ofwat's draft determination proposals for the treatment of energy costs in AMP8,* final draft report for Water UK.

D. Application by Ofwat of energy price adjustment to cost adjustment claims

Ofwat's approach to the application of the energy price adjustment

33. Ofwat has applied the energy price adjustment to the modelled base costs, i.e. the costs that form part of the base cost efficiency benchmarking. In applying the price adjustment to the modelled base costs only, Ofwat is excluding any company-specific and sector-wide adjustments, or unmodelled costs.

34. This approach has been confirmed where in response to the following query:[9]

> Our understanding of Ofwat's draft determinations is that base costs are modelled, to produce a set of modelled allowances, and that the energy cost adjustment is applied to these modelled allowances after catch-up challenge, before RPEs and OE….

Ofwat responded with:

> We confirm your understanding is correct:
>
> - we apply the energy cost adjustment after catch-up challenge and before frontier shift and RPEs; …
>
> *[Ofwat Statement One]*

35. Separately, however, Ofwat has also implied in its assessment of our cost adjustment claim for softening, that it has applied the energy price adjustment to softening costs:[10]

> Firstly, the claim should focus on volume effects (i.e. why SES Water consumes more inputs than other companies due to its statutory obligations) but it also includes price effects (e.g. increases in energy and chemical prices over time). The latter effects all companies and is not unique to the company. For example, we have dealt with energy price uncertainty through our proposed energy cost end-of-period reconciliation.
>
> *[Ofwat Statement Two]*

36. Our review of how Ofwat has applied this energy price adjustment within its modelling suite leads us to conclude that the former of these statements [Ofwat Statement One] is true.[11] In other words, the energy price adjustment has *not* been applied to any of our cost adjustment claims.

37. For us, the following cost adjustments are excluded from Ofwat's application of the energy price adjustment:

    (a) Costs related to our obligation to soften water for our customers (the "softening claim");

    (b) Costs related to our unique topography, which means we face higher pumping costs than the rest of the sector (the "pumping claim");

    (c) The sector-wide adjustment Ofwat made in its draft determinations on net zero costs (the "net zero adjustment"); and

[9] Ofwat (2024) Ofwat response to query OFW-IBQ-SES-004
[10] Ofwat (2024) SES CAC feeder model, tab SES_CAC3
[11] We have reviewed how the energy cost adjustment is flows through the energy price adjustment model, the base cost models, the SES Water cost adjustment claim model, and the base costs aggregator model.

(d) The sector-wide adjustment Ofwat made in its draft determinations on meter replacement costs (the "meter replacement adjustment").

38. Below, we explain why we consider Ofwat's approach to be incorrect and how we have applied the energy price adjustment to each of the above costs.

Why we consider Ofwat's approach to be incorrect

39. The decision to exclude the costs we have listed above from the energy price adjustment appears arbitrary and inconsistent with the principles underpinning the adjustment. The energy price adjustment is intended to ensure that our cost allowances reflect our exposure to recent increases in energy prices. By not applying it to key elements of our cost base, Ofwat is undermining its purpose.

40. Below, we take each of the above cost adjustments and explain why it should be included in the energy price adjustment

41. **Softening claim:** power costs form a significant proportion of our total softening costs, forming approximately 25% of our softening opex and approximately 13% of our total softening claim for AMP8. Despite this, Ofwat has not applied the energy price adjustment to this claim, nor has it provided any rationale for why our softening costs would remain unaffected by recent increases in energy prices while other areas of our cost base would. We assume this is an oversight. The softening claim is provided in Appendix SES104: Softening CAC.

42. **Pumping claim:** the vast majority of our pumping claim relates to our higher power consumption due to our network topography, which means we face higher pumping requirements. While Ofwat rejected our claim in its draft determinations, we have resubmitted our claim in Appendix SES103: NERA report on Pumping Costs CAC, providing additional evidence of our unique circumstances and evidence demonstrating how Ofwat's benchmarking models fail to reflect these unique circumstances.

43. Again, Ofwat's response to our claim does not address why price effects would not apply to our pumping claim, despite it primarily reflecting our exposure to higher power prices. In its assessment of our pumping claim Ofwat state:

> "It is not clear why increases in energy prices were reflected in this claim, as the focus should have been on why SES Water consumes more energy to pump water than other water companies."[12]

44. At the time of the submission of our pumping claim, it was not clear how Ofwat would be treating the recent increases in energy prices. And so, we included the energy price component into our claim. While we are indifferent as to whether the energy price adjustment is reflected within the claim itself or through the more general adjustment, it is essential that an adjustment is applied somewhere. Without such an adjustment, Ofwat would be implying that our relatively higher power consumption due to pumping is unaffected by recent power price increases, even though the rest of our power consumption is. It is unclear what the logic of such an implication would be.

45. **Net zero and meter replacement adjustments:** while the activities that are reflected in the net zero and meter replacement adjustments are unlikely to have a significant power consumption component, such costs do form part of the calculation of our power share of totex. We understand that the power share of totex is calculated as follows:

[12] Ofwat (2024) SES PR24 Cost Adjustment Claims model

$$\sum_{FY18}^{FY23} \frac{Base\ outturn\ power\ costs}{Base\ outturn\ totex} \div 5$$

46. The denominator in the calculation of power shares includes a range of activities including those related to net zero and meter replacements. It appears arbitrary then, for such activities to then be excluded when the energy price adjustment is applied.

Our proposed approach

47. For the energy price adjustment of our **softening costs**, we consider this is best applied within our softening claim itself. This is because our estimates of energy prices are all set with reference to our outturn prices in 2017/18 and so, assume a different base price than is reflected in the more general energy price adjustment. Our assessment of the impact of energy price movements on our softening costs, is captured within our softening cost adjustment claim.

48. For the **pumping claim**, we are indifferent as to whether the price adjustment is applied within the claim itself or as part of the general price adjustment. But as set out above, it is crucial that Ofwat include the adjustment within its final determinations. We capture the impact of energy price movements on our pumping costs within this representation, i.e. as part of our assessment of the general energy price adjustment.

49. For net zero and meter replacement costs, we consider these are best applied through the general energy price adjustment within Ofwat's energy price adjustment model, given they are sector-wide cost adjustments. We capture the impact of energy price movements these costs areas within this representation, i.e. as part of our assessment of the general energy price adjustment.

E. Conclusions

50. In summary, we strongly welcome Ofwat's intention behind its energy price adjustment and the ex-post true-up mechanism. But we are concerned with the proposed design of the mechanism in Ofwat's draft determination, which results in us being provided a net negative energy price adjustment over AMP8 of -£1.3 million.

51. As such, this appendix makes two key representations:

    (a) That Ofwat adjust how it combines the historical DESNZ energy price index with the forecast Ofwat/CEPA-produced index, to correct the inaccurate assumption that both indices have the exact same value for 2022/23; and

    (b) That Ofwat applies the energy price adjustments to all base costs and not just the specific subset of costs that are benchmarked.

52. As we show in this appendix, the approach Ofwat and its advisors have taken to producing a hybrid energy series leads to the risk of a materially inaccurate forecast. At minimum, this can partially be corrected by updating the historical series with more recently published data by DESNZ. But it can only be fully corrected by turning the DESNZ index into a series that is expressed in £/MWh terms. We have provided a suggested alternative DESNZ series that can be used for this.

53. This change is essential for ensuring our financeability over the AMP, given the size of the funding gap this issue creates.

54. Also, Ofwat's decision to apply the energy price adjustment to modelled base costs only, appears to be an oversight and indeed inconsistent with statements that it has made in our cost adjustment claim assessments. There is no rationale for why the energy price adjustment would not also apply to our softening cost adjustment claim or pumping cost adjustment claim. For the reasons outlined in this appendix, we consider that a bespoke energy price adjustment is more appropriate for our softening claim, whereas the pumping claim is better suited to the general 'notional' energy price adjustment. Similarly, Ofwat's decision not to apply the energy price adjustment to sector-wide cost adjustments also appears arbitrary and inconsistent.

55. This second change is essential for ensuring that the energy price adjustment and ex-post true-up, protects our full cost base from changes in energy prices rather than an arbitrary subset of our cost base. More fundamentally, it prevents us from recovering our efficiently incurred costs.

56. In the table below, we provide estimates for the impact of making these changes on the size of our energy price adjustment using Ofwat's draft determination. We consider the net effect of these changes is £23.4 million (i.e. moving from a negative £1.3 million adjustment to a positive £22.1 million adjustment).

Table 1: Comparison of size of energy price adjustment under different approaches (£m, 2022-23 prices)

Size of energy price adjustment under different approaches	25/26	26/27	27/28	28/29	29/30	AMP8 total
Ofwat DD approach	-0.1	-0.1	-0.2	-0.4	-0.5	**-1.3**
Correct how energy price indices are combined						
Use corrected Ofwat forecast	2.6	2.7	2.5	2.3	2.1	**12.3**
Use SES BP forecast	4.3	3.9	3.1	2.8	4.1	**18.3**
Apply energy price adjustment to all base costs (using SES BP forecast from above line)						
Apply adjustment to pumping claim	4.7	4.3	3.4	3.0	4.5	**19.9**
Apply adjustment to sector claims	5.3	4.7	3.8	3.3	5.0	**22.1**

Source: SES Water analysis