

Ausgrid Submission

How the AER will assess the impact of capitalisation differences on our benchmarking - Consultation paper

February 2022

18 February 2022



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Dear Sebastian,

Ausgrid welcomes the opportunity to provide a submission on the Australian Energy Regulator's (**AER**) consultation paper on how it will assess the impact of capitalisation differences on benchmarking. Ausgrid has made submissions in the past about this issue and is pleased to see the AER progress the matter.

We note that the AER is not proposing to look at differences in Cost Allocation Methods (**CAMs**) in this consultation on the basis that the focus of stakeholder feedback has been on capitalisation. While we agree that capitalisation treatment requires review, the use of frozen CAMs for some distribution network service providers (**DNSPs**) also remains a key concern. The use of frozen CAMs affects the comparability of benchmarking for all DNSPs in the National Electricity Market (**NEM**).

The AER's preferred option is to apply an Operating Environment Factor (**OEF**) adjustment for capitalisation differences using operating expenditure (**opex**)/capital ratios. However, we have concerns with the AER's proposed OEF approach due to high variability in potential outcomes depending on the time horizon and combination of opex/capital ratios used. An econometric model solution based on applying an explanatory variable for capitalisation differences appears to be viable and we recommend the AER re-assess at this.

We also would like to bring to the AER's attention recent changes in the accounting interpretation of Software as a Service (**SaaS**), affecting the comparability of opex for future benchmarking and in the setting of opex allowances.

We appreciate that further investigation and consideration of the issues and options raised by stakeholders may take time. Due to the proximity of upcoming regulatory proposals, were the AER to continue with its preferred option in the interim, then we consider it more appropriate for the AER to apply equal weighting to each of the three opex/capital ratios.

If you have any questions regarding this submission, please contact [REDACTED] at [REDACTED].

A handwritten signature in black ink, appearing to read "Alex McPherson", written in a cursive style.

Alex McPherson
Head of Regulation

Submission

Introduction

Ausgrid welcomes the opportunity to provide a submission on the AER’s consultation paper relating to the impact of capitalisation differences on benchmarking. We appreciate the AER’s efforts in examining this issue and in continuing to work towards improving the comparability of benchmarking results.

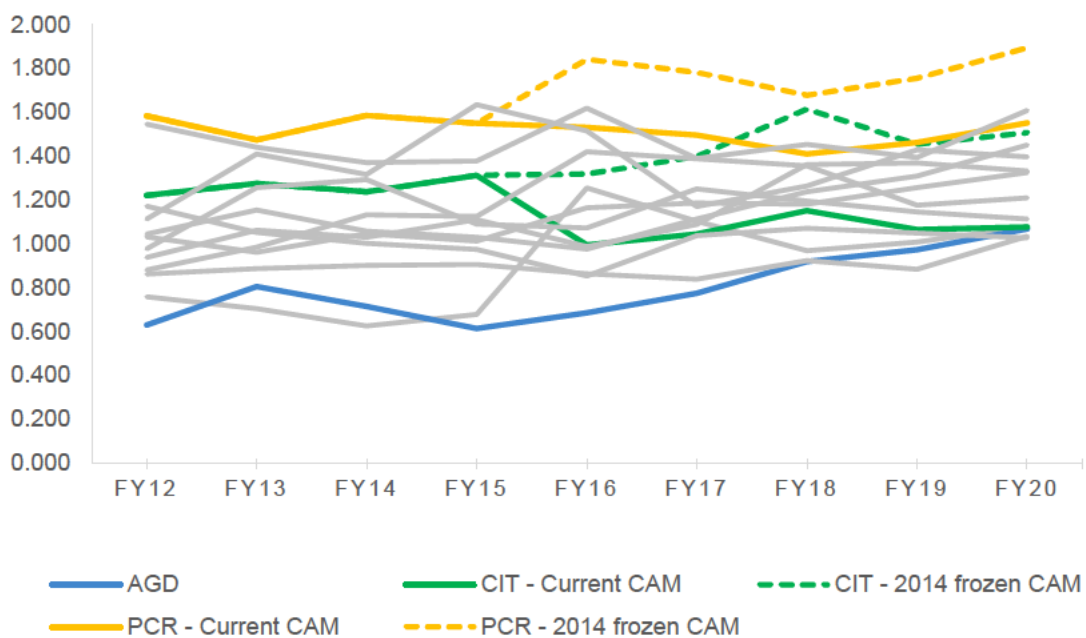
Frozen CAM approach requires review

Frozen CAMs are a problem we have highlighted in previous submissions to the AER.

The use of the 2014 frozen CAMs for benchmarking is a major concern because the use of frozen CAMs means that the opex that is benchmarked does not reflect actual opex being incurred by those DNSPs that have changed their CAMs. Hence benchmarking will not produce an accurate estimate of efficiency for any DNSP. For example, in our most recent submission on this issue we presented analysis and evidence showing that Powercor and CitiPower’s opex multilateral partial factor productivity (MPFP) efficiency scores are significantly higher under their 2014 frozen CAMs compared to their current CAMs.¹

The chart below indicates the extent to which Powercor and CitiPower benefit from higher opex MFPP efficiency scores by using their frozen CAMs compared to Ausgrid and other electricity distributors in the NEM. The dotted yellow (Powercor) and dotted green (CitiPower) lines show that these businesses’ efficiency scores are much higher under their 2014 frozen CAMs used for benchmarking purposes compared to their scores using their actual reported opex under current CAMs.

Figure 1: Opex MPFP index modelling – All DNSPs (PCR, CIT and AGD highlighted)



¹ Ausgrid Submission – Draft 2021-26 Victorian Distribution Determination dated January 2021.

While the MPFP is not used to drive the assessment of base year efficiency for the purpose of a regulatory determination:

- these scores are published by the AER and therefore have reputational implications for networks; and
- there would be a similar impact in the econometric models that are used for assessing base year efficiency.

Ergon Energy, Energex and Jemena have also made recent changes to their CAMs, through greater expensing of overheads. This will further increase the divergence and comparability of opex used for benchmarking (frozen CAMs) and the actual opex allocated according to current CAMs. We therefore continue to encourage the AER to review cost allocation differences more broadly including reviewing the impact of frozen CAMs.

A wider review of cost allocation differences will necessarily incorporate a review of differences in DNSPs' capitalisation practices, as capitalisation policies are usually incorporated into their CAMs. The effect of reporting the impact of changing CAMs for benchmarking and other regulatory information data increases the complexity of understanding and comparing data and information across DNSPs. As businesses continue to review, refine and/or change their capitalisation policies and cost allocation methodologies, a review of how benchmarking and the AER's benchmarking models should appropriately account for these changes should be considered.

Appropriateness of ratios and weighting

The AER combines differences in cost reporting and opex/capex trade-offs under the broad umbrella of 'capitalisation practices'. By combining these two matters, we do not know if improvements in benchmarking results are driven by efficient opex/capex trade-offs or simply differences in cost reporting. Differences in cost reporting should not impact assessments of efficiency. While we appreciate the difficulty, we would encourage the AER to do further development work to distinguish between these two factors. This work could form part of a subsequent review.

We have also considered the following three ratios proposed by the AER to measure capitalisation practices:

- Opex/totex ratio;
- Opex/total cost ratio; and
- Opex/total inputs ratio.

The AER has set out the advantages and disadvantages of each of the opex/capital ratios in the consultation paper and subject to some concerns below, we generally agree with the AER's views. None of the ratios is a perfect measure, but in combination they may be useful for the purpose of assessing capitalisation differences.

Opex/totex ratio

As a broad measure, we consider that the opex/totex ratio overall would capture the net impact of all types of capitalisation practices, including reporting differences and opex-capex trade-offs. Because overhead cost is a major component of opex that is impacted by capitalisation policy, we also consider that differences in the reporting of overhead cost would be reflected in differences in the opex/totex ratio among DNSPs. On this basis, we expect to see some relationship between overhead capitalisation rates and the opex/totex ratio. The higher the capitalisation of overheads, the lower the reported opex as a proportion of totex. We therefore reviewed overhead costs reported by DNSPs in their Category Analysis Regulatory Information Notices (**RIN**), as well as their reported opex and

totex. However, our analysis of the data did not indicate a correlation between overhead capitalisation and opex/totex.

We would encourage to AER to undertake further analysis on overhead cost reporting differences and opex-capex trade-offs. This will help establish the robustness of the opex/totex ratio more fully as an indicator of capitalisation practice differences.

The opex/totex ratio will also fluctuate year-to-year in line with the lumpiness of capital expenditure, although we note that taking the average of the ratio over a long period, as the AER proposes, may moderate these fluctuations.

Opex/total cost ratio

We have some concerns with the opex/total cost ratio that warrant further consideration. The total cost in this ratio uses the annual user cost of capital (**AUC**) which the AER defines as the sum of return on capital, return of capital and tax. We don't understand why tax is included in the AUC as it does not have a direct impact on the consumption or cost of capital. We consider that tax should be excluded from the calculation.

In our view, the return on capital and return of capital should reflect the amounts in the post-tax revenue model for each DNSP. We recommend the AER adopt the trailing average cost of debt and not apply the same weighted average cost of capital (**WACC**) to each DNSP. We note that the WACC is updated annually for the trailing average cost of debt.

We would encourage the AER to look more closely into the calculation of the AUC and the total cost ratio to address these potential errors.

One advantage of using the opex/totex and opex/total cost ratios is that their measurement will not impose additional burden on DNSPs as the underlying data are already being reported in the RINs and/or used in the current benchmarking models. DNSPs can easily track where they sit in relation to opex/capital ratios with the publication of annual RINs and benchmarking.

Opex/total inputs ratio

We consider the opex/totex inputs ratio is a less direct measure given that it is based on opex and capital quantity inputs rather than cost. We also note that the inputs captured by this ratio are specific to the physical quantity inputs being captured in the AER's multilateral total factor productivity (**MTFP**) benchmarking models, e.g., distribution lines (both overhead and underground) sub-transmission lines (overhead and underground) and transformers. Capex-opex trade-offs relating to inputs, such as cloud-based computing services rather than the purchase of information technology assets, would not be directly captured by this ratio. Notwithstanding these issues, we consider that this ratio provides a relevant measure of the opex/capital relationship from an input quantity perspective. It is also able to be easily calculated from the results of the AER's annual MTFP and MPFP benchmarking.

Subject to our comments above, we agree that the use of the opex/totex and opex/total cost ratios would be appropriately agnostic on the source of the capitalisation practice differences between capitalisation policy and opex-capex trade-offs. However, we also have concerns around how the AER proposes to use these ratios.

The AER's preferred option is to apply an OEF adjustment based on combinations of these opex/capital ratios. Among the assessment principles the AER has sought to use in considering this and other options are accuracy, reliability and robustness. In particular, the AER noted robustness as a principle that needs to be closely examined.

However, there does not appear to be consistency and stability of outcomes under the AER's preferred approach based on our analysis of the volatility of results for opex/capital ratio differences as a percentage of the customer-weighted comparator average, when calculated at various points over the last four years 2017 to 2020. The results of this analysis across all DNSPs, over both the short and long period, showing the range of the outcomes, are summarised in the table below (refer to Appendix for detailed DNSP results).

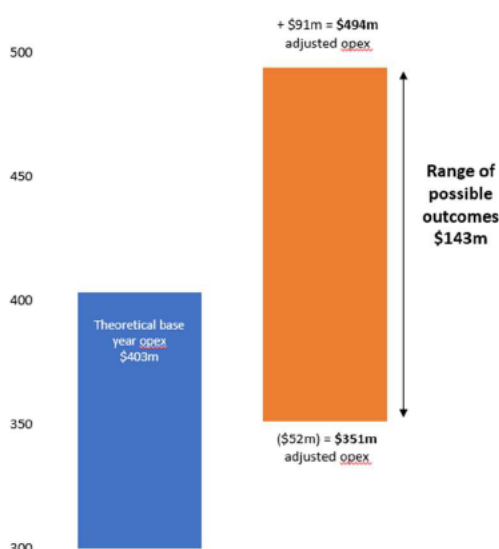
Table 1: Opex/capital ratio difference as a % of comparator average – range of outcomes

| Opex/capital ratio as a % of comparator average | Difference between highest and lowest result when measured every year from 2017 to 2020 across DNSPs | | |
|---|--|---------|---------|
| | Maximum | Minimum | Average |
| Opex/totex - long period | 7.6% | 0.8% | 3.1% |
| Opex/totex - short period | 8.8% | 2.5% | 5.9% |
| Opex/total cost - long period | 3.1% | 0.5% | 1.4% |
| Opex/total cost - short period | 6.3% | 0.2% | 3.0% |
| Opex/total inputs - long period | 7.8% | 0.9% | 2.1% |
| Opex/total inputs - short period | 7.5% | 0.7% | 3.2% |

The above table indicates that over the long period, across four yearly observations, the maximum difference in the result for the opex/totex ratio difference as a percentage of comparator average, for any DNSP is 7.6% and the minimum difference for any DNSP is 0.8%. Across all DNSPs, the average difference between the highest and lowest outcome for this ratio is 3.1%. There is more variability in the measurement of the opex/totex ratio difference as a percentage of comparator average over the short period, with an average difference of 5.9% across DNSPs. This is also observed in the results for the opex/total cost ratio and the opex/total inputs ratio.

In terms of what this means for adjustments to a theoretical base year opex and using Ausgrid's results for 2006-20 as an example, the OEF capitalisation adjustment using each of the three ratios individually could range from a negative opex adjustment of \$52m to a positive opex adjustment of \$91 million. This is depicted in Figure 2.

Figure 2: Range of outcomes from the three ratios



The table below shows the range of outcomes for the average of the opex/totex and opex/total ratios and the weighted average of the three ratios, as proposed in the consultation paper as well as the outcome based on simple average of the three ratios.

Table 2: Combinations of opex/capital ratios difference as a % of comparator average – range of outcomes

| Combinations of Opex/capital ratios as a % of comparator average | Difference between highest and lowest result when measured every year from 2017 to 2020 across DNSPs | | |
|--|--|---------|---------|
| | Maximum | Minimum | Average |
| Average of opex/totex and opex/total cost - long | 4.2% | 0.2% | 1.8% |
| Average of opex/totex and opex/total cost - short | 3.9% | 1.7% | 2.6% |
| Average of 3 opex/capital ratios - long | 4.2% | 0.5% | 1.7% |
| Average of 3 opex/capital ratios - short | 4.6% | 1.5% | 2.5% |
| Weighted average* of 3 opex/capital ratios - long | 4.1% | 0.3% | 1.9% |
| Weighted average* of 3 opex/capital ratios - short | 5.0% | 2.2% | 3.3% |

*50% Opex/totex, 25% Opex/total cost and 25% Opex/total inputs

Again, these results indicate the variability of outcomes for these ratios when combined, as proposed. The results suggest that the amount of capitalisation OEF adjustment that a DNSP would receive under the AER's preferred approach is highly subject to the timing of its regulatory reset.

For example, based on the average of the opex/totex and opex/total cost ratio, if Ausgrid's regulatory reset had been in 2021 it would have received a negative capitalisation OEF adjustment of -5.9% based on the long period and -5.0% based on the short period. If the timing of the reset was four years prior, then its capitalisation OEF adjustment would have been higher at -6.1% on the long period but significantly less at -1.9% based on the short period.

In looking at the individual DNSP results (refer Appendix), it is even possible for the direction of the adjustment to go from being positive in one year to negative when measured in the following or subsequent years and vice versa.

The variability, including changing direction of the calculated OEF adjustments, do not seem sensible and brings into question the consistency and reliability of the AER's preferred approach of applying an OEF adjustment for capitalisation practice differences. The results are vastly different depending on the combination of ratios taken. Not only does the magnitude of the OEF adjustment change materially but the direction of the adjustment can change up or down depending on which combination of ratios and ratio weightings are assumed.

Given the volatility and inconsistency of the results, we therefore have concerns with the robustness of the AER's preferred approach. The combinations of the three ratios seem arbitrary and lead to inconsistent outcomes for the OEF adjustment which does not meet the AER's assessment principles for robustness, accuracy and reliability.²

For the above reasons, we encourage the AER to re-examine their preferred approach of applying an OEF adjustment. While we would like these issues to be resolved in time for our regulatory submission in January 2023, we also acknowledge that further investigations and development work, including continuing stakeholder consultation, takes time.

² AER Consultation paper – How the AER will assess the impact of capitalisation differences on our benchmarking, November 2021, p.28.

In the interim, were the AER to continue with its preferred approach for practical reasons, the AER may want to consider deriving the OEF capitalisation based on an equal weighting (simple average) of the three ratios. This reflects the fact that each has strengths and weaknesses, including those noted by the AER, and there does not appear to be a strong basis to attempt to distinguish their validity.

Econometric solution

Given the range of outcomes that could be obtained under any combination of the ratios and the materiality of the opex OEF adjustments arising from their application, we encourage the AER to fully explore the viability of the econometric option. The econometric option would directly incorporate capitalisation practice differences in the benchmarking econometric models rather than accounting for these as OEF adjustments.

The econometric option is the AER's Option 2 which is to add an explanatory variable to the econometric cost function benchmarking models that directly captures capitalisation practices. The AER raised but immediately discounted this option based on 2014 advice from Economic Insights that this has not been possible due to lack of comparable data for the Ontario DNSPs.³ We have received advice and understand that the data required to compute the opex/totex and opex/total cost ratios for all of the Ontarian DNSPs is readily available on the Ontario Energy Board's website.⁴ Similar data is also available on the New Zealand Commerce Commission's website, thus allowing the same ratios to be computed for the New Zealand DNSPs. This means that the econometric approach that the AER appears to have ruled out based on lack of data can in fact be implemented and should therefore be considered seriously by the AER. The AER could use the period averages for the opex/totex and opex/total cost ratios of each DNSP directly as an explanatory variable in its econometric models (in the same way the AER proposes to do when implementing an ex-post OEF adjustment for capitalisation differences).

An advantage of the econometric approach is that capitalisation differences are accounted for directly within the econometric models rather than derived through a comparison with some comparator average. This means that the estimated efficiency scores derived using the models will have already controlled for differences in capitalisation practices between DNSPs and will therefore produce more reliable estimates of the true level of efficiency for each of the Australian DNSPs—without requiring any further OEF adjustments.

New accounting interpretation for SaaS will potentially invalidate benchmarking

Recent changes in the accounting interpretation of SaaS implementation costs, has the potential to invalidate future opex benchmarking.

Certain SaaS implementation costs that have previously been reported by businesses as capex are now required under the new accounting interpretation to be reported as opex. As opex reported for benchmarking follows the accounting treatment, this has the potential to significantly impact the validity of opex benchmarking. Depending on where a DNSP sits in its SaaS implementation journey, the DNSP's reported opex may go up or down with SaaS implementation costs, impacting not only the comparability across businesses but also opex benchmarking of a series that hasn't included SaaS as opex before.

³ AER Consultation paper – How the AER will assess the impact of capitalisation differences on our benchmarking, November 2021, p.33.

⁴ <https://www.oeb.ca/ontarios-energy-sector/performance-assessment>.

We consider it necessary for the AER to engage with the industry and customer advocates on this important related issue to enable businesses to obtain guidance and clarity.

Consultation questions

| Question | Response |
|--|--|
| Do you have any comments on our planned process for consultation, including on the timelines? | We note that the final guidance is due mid-August 2022, which means our draft FY25-29 regulatory proposal scheduled for the same month will not reflect the AER's decision. If there are material changes between the draft and final guidance our stakeholders will not have an opportunity to comment on the opex position that is ultimately used in our proposal. We also note the other benchmarking-related reviews that the AER may commence in 2022 will not be reflected in our draft proposal, or possibly the actual proposal we submit in January 2023. |
| Do you have any views at this stage on whether group workshop sessions or one-on-one meetings would be preferable? | We would prefer one-on-one meetings as it will allow deeper interaction on the issues raised by each stakeholder. |
| Do you agree with the proposed definition of capitalisation practices? Do you consider this is capturing the range of capitalisation practices that (at least in theory) could be influencing the comparability of the benchmarking results? If you consider the range is too narrow or too broad, please provide the definition you consider is appropriate and your reasoning and supporting evidence. | See Appropriateness of ratios and weighting section of submission. |
| Do you consider that our focus on capitalisation practice differences instead of cost allocation differences more broadly is appropriate? If not, please provide your reasoning and supporting evidence. | See Frozen CAM approach requires review section of submission. |
| What are your views on the use of the three ratios set out above to measure capitalisation differences between DNSPs? | See Appropriateness of ratios and weighting section of submission. |
| What are your views about the advantages and disadvantages of each of the opex/capital ratios? | See Appropriateness of ratios and weighting section of submission. |
| Do you consider that one or more of these ratios is more appropriate? | See Appropriateness of ratios and weighting section of submission. |
| Do you have any other suggestions as to how we can review and measure the differences in capitalisation practices between DNSPs? | See Econometric solution section of submission. |
| Do you have any views about the proposed framework for using these ratios to determine that the differences as a result of capitalisation are material i.e., where the difference in capitalisation leads to an opex difference that is greater than 0.5 per cent? | Were the AER to continue with the approach it applied in the recent Victorian decisions which is to provide an OEF adjustment for capitalisation differences, then an opex difference that is greater than 0.5% would be consistent with how the AER generally approaches OEF adjustments. There will be no need to first establish that any opex difference is material (i.e., greater than 0.5%) if capitalisation differences are incorporated directly as an additional explanatory variable in the econometric benchmarking models. |

| | |
|---|---|
| <p>What are your views on the approaches presented in this section for determining the impact of capitalisation differences on the benchmarking results?</p> | <p>We agree with the approaches presented by the AER in determining whether capitalisation differences are having a material impact on the opex benchmarking scores. The sensitivity analysis presented in the paper based on applying the comparator-average opex/capital ratio to each DNSP's opex one at a time, running the opex econometric models and noting the material change in opex efficiency scores of most DNSPs, provide further confirmation that opex benchmarking results are sensitive to capitalisation changes and capitalisation practice differences. These results reinforce our analysis regarding the material differences in opex MPFP benchmarking based on frozen CAMs and benchmarking based on current cost allocation (and capitalisation) practices.</p> |
| <p>Do you consider there are other approaches that could be used to determine the impact of capitalisation differences on the benchmarking results?</p> | <p>Similar to our analysis of comparing the opex MPFP efficiency scores of CitiPower and Powercor under their frozen CAMs compared to their current CAMs, the AER could also run the econometric benchmarking models based on DNSPs' current CAMs and compare the resulting efficiency scores against the efficiency scores based on frozen CAMs. The impact of differing capitalisation practices can be inferred from the resulting differences in efficiency scores since the current CAM incorporates DNSPs' current capitalisation practices.</p> |
| <p>What are your views about the assessment principles we have used to examine these options? Are there other factors that you consider we should take into account as a part of our assessment?</p> | <p>We agree with the assessment principles the AER used to examine the options and support the AER's emphasis on robustness of the options. We believe that if the AER's preferred option is to adjust for capitalisation differences as an OEF adjustment, then the metric used to derive the OEF adjustment should be robust – i.e., valid under different assumptions and conditions and stable over time.</p> |
| <p>What are your views about the options we have identified for addressing the impact of material capitalisation differences on our benchmarking? Are other options that should be considered?</p> | <p>We believe the AER has identified and considered a reasonably good range of possible options to address the impact of differences in capitalisation practices, however the econometric model option seems to have been discounted without thorough analysis.</p> |
| <p>What are your views about the advantages and disadvantages identified for each of these options and how the assessment principles are considered? Do you consider there are further issues that should also be taken into account, and if so, what are they and why are they relevant?</p> | <p>The AER has given a reasonably good consideration of the advantages and disadvantages of the options tabled, apart from the option of adding an explanatory variable to the econometric benchmarking models that directly captures capitalisation practices. The AER appears to have relied on previous advice given by Economic Insights that data is not available in dismissing this option. Our investigations indicate that the required data is now available. As it has been seven years since this advice was made, we would encourage the AER to further explore the feasibility of this option given our understanding that the required data for overseas jurisdictions is now available.</p> |

| | |
|---|--|
| | Furthermore, given the impact of frozen CAMs on benchmarking and the continuing divergence between capitalisation policies used for benchmarking and the capitalisation policies used for setting opex allowance as DNSPs revise their CAMs, we would also encourage the AER to reconsider the option of benchmarking based on current CAMs. |
| Do you agree or disagree with our preferred option of applying an OEF adjustment informed by opex/capital ratios? Please provide arguments to support your view. Do you agree with our view that this approach is appropriately agnostic on the source of capitalisation practices differences between capitalisation policy and opex/capital trade-offs? If not, please provide reasons why you consider that there should be differential treatment of these two sources of capitalisation practices. | See Appropriateness of ratios and weighting section of submission. |
| Do you have a different preferred approach? Please outline what this is and provide supporting arguments about why this is considered to better address the material impacts of capitalisation differences on the benchmarking results. | See Econometric solution section of submission. |
| Assuming for present purposes that we adopt our preferred approach (Option 1), what are your views on which ratios should be used to drive the OEF adjustment? | See Appropriateness of ratios and weighting section of submission. |

Appendix

Table A1: Opex/totex ratio difference as a % of comparator average – Long Period

| DNSP | 2006-17 | 2006-18 | 2006-19 | 2006-20 | Difference between highest and lowest result |
|------|---------|---------|---------|---------|--|
| ACT | 12.4% | 12.3% | 13.0% | 13.8% | 1.5% |
| AGD | -16.6% | -14.9% | -14.4% | -13.0% | 3.5% |
| AND | -12.6% | -12.6% | -12.0% | -11.3% | 1.3% |
| CIT | -27.4% | -26.9% | -25.7% | -25.9% | 1.7% |
| END | -13.8% | -12.4% | -11.4% | -10.4% | 3.4% |
| ENX | -21.7% | -19.0% | -16.1% | -14.1% | 7.6% |
| ERG | -18.3% | -16.1% | -13.7% | -13.0% | 5.3% |
| ESS | -13.3% | -10.9% | -8.3% | -6.7% | 6.6% |
| JEN | -0.3% | -0.1% | 2.0% | 2.5% | 2.8% |
| PCR | -3.7% | -4.2% | -4.1% | -5.0% | 1.3% |
| SAP | 10.2% | 9.8% | 10.1% | 10.5% | 0.8% |
| TND | -7.5% | -7.6% | -5.8% | -4.8% | 2.7% |
| UED | 4.6% | 5.4% | 6.7% | 7.1% | 2.5% |

Table A2: Opex/totex ratio difference as a % of comparator average – Short Period

| DNSP | 2012-17 | 2012-18 | 2012-19 | 2012-20 | Difference between highest and lowest result |
|------|---------|---------|---------|---------|--|
| ACT | 20.7% | 13.4% | 13.3% | 14.5% | 7.4% |
| AGD | 6.7% | 1.5% | -0.6% | 0.3% | 7.3% |
| AND | -5.1% | -10.7% | -11.0% | -9.9% | 5.9% |
| CIT | -16.8% | -21.2% | -20.8% | -21.6% | 4.9% |
| END | 6.4% | 1.2% | 0.3% | 0.7% | 6.1% |
| ENX | -0.7% | -3.3% | -0.9% | 1.0% | 4.3% |
| ERG | -3.2% | -5.7% | -3.7% | -3.5% | 2.5% |
| ESS | 5.3% | 2.1% | 4.2% | 5.7% | 3.6% |
| JEN | 4.7% | -0.7% | 2.0% | 2.9% | 5.4% |
| PCR | 1.3% | -5.1% | -6.0% | -7.5% | 8.8% |
| SAP | 16.2% | 8.9% | 8.3% | 9.2% | 7.9% |
| TND | 13.7% | 5.1% | 5.6% | 6.1% | 8.6% |
| UED | 6.7% | 2.9% | 4.3% | 5.2% | 3.9% |

Table A3: Opex/total cost ratio difference as a % of comparator average – Long Period

| DNSP | 2006-17 | 2006-18 | 2006-19 | 2006-20 | Difference between highest and lowest result |
|------|---------|---------|---------|---------|--|
| ACT | 9.6% | 9.2% | 9.1% | 8.3% | 1.3% |
| AGD | 4.3% | 3.1% | 2.2% | 1.2% | 3.1% |
| AND | 10.8% | 10.4% | 10.4% | 10.6% | 0.5% |
| CIT | -26.7% | -27.1% | -26.6% | -26.5% | 0.6% |
| END | 7.2% | 7.4% | 7.6% | 9.4% | 2.2% |
| ENX | -0.7% | -0.3% | 0.1% | 0.2% | 0.9% |
| ERG | -2.4% | -2.0% | -1.3% | -0.3% | 2.1% |
| ESS | 10.1% | 9.8% | 10.4% | 11.1% | 1.4% |
| JEN | 17.8% | 17.5% | 17.8% | 17.2% | 0.6% |
| PCR | 12.0% | 11.9% | 11.9% | 11.4% | 0.6% |
| SAP | -6.6% | -5.7% | -4.6% | -4.3% | 2.3% |
| TND | -4.2% | -2.9% | -2.8% | -2.6% | 1.6% |
| UED | 7.9% | 7.0% | 6.6% | 6.4% | 1.5% |

Table A4: Opex/total cost ratio difference as a % of comparator average – Short Period

| DNSP | 2012-17 | 2012-18 | 2012-19 | 2012-20 | Difference between highest and lowest result |
|------|---------|---------|---------|---------|--|
| ACT | 5.1% | 6.4% | 6.0% | 5.2% | 1.4% |
| AGD | -10.6% | -9.4% | -10.0% | -10.3% | 1.1% |
| AND | 5.9% | 7.2% | 7.3% | 7.9% | 2.0% |
| CIT | -24.6% | -24.5% | -24.4% | -24.4% | 0.2% |
| END | 1.4% | 3.9% | 4.2% | 6.1% | 4.8% |
| ENX | -5.5% | -2.7% | -2.3% | -1.8% | 3.7% |
| ERG | -9.5% | -6.5% | -5.3% | -3.2% | 6.3% |
| ESS | 0.1% | 2.3% | 3.8% | 5.7% | 5.6% |
| JEN | 10.2% | 12.4% | 13.0% | 12.5% | 2.8% |
| PCR | 8.0% | 9.9% | 9.5% | 9.1% | 1.9% |
| SAP | -2.8% | -0.3% | 0.5% | 0.5% | 3.3% |
| TND | -9.9% | -5.6% | -5.5% | -4.8% | 5.1% |
| UED | 2.9% | 3.3% | 2.5% | 2.7% | 0.8% |

Table A5: Opex/total inputs ratio difference as a % of comparator average – Long Period

| DNSP | 2006-17 | 2006-18 | 2006-19 | 2006-20 | Difference between highest and lowest result |
|------|---------|---------|---------|---------|--|
| ACT | 12.7% | 12.5% | 13.5% | 13.1% | 1.0% |
| AGD | 25.3% | 23.9% | 23.9% | 22.5% | 2.8% |
| AND | 1.9% | 1.8% | 3.2% | 3.6% | 1.8% |
| CIT | -0.8% | -1.2% | 0.3% | 0.8% | 2.0% |
| END | 11.8% | 11.0% | 11.4% | 18.7% | 7.8% |
| ENX | 11.0% | 10.8% | 11.7% | 11.4% | 0.9% |
| ERG | 26.5% | 26.0% | 27.3% | 27.3% | 1.3% |
| ESS | 10.7% | 9.6% | 10.6% | 10.1% | 1.1% |
| JEN | 22.2% | 22.4% | 24.2% | 23.7% | 2.0% |
| PCR | -17.2% | -17.1% | -16.2% | -16.5% | 1.1% |
| SAP | 4.0% | 4.9% | 7.0% | 7.5% | 3.4% |
| TND | -13.0% | -12.9% | -12.1% | -12.3% | 0.9% |
| UED | 14.9% | 14.0% | 14.6% | 14.2% | 0.9% |

Table A6: Opex/total inputs ratio difference as a % of comparator average – Short Period

| DNSP | 2012-17 | 2012-18 | 2012-19 | 2012-20 | Difference between highest and lowest result |
|------|---------|---------|---------|---------|--|
| ACT | 16.6% | 14.0% | 13.2% | 12.6% | 4.0% |
| AGD | 22.7% | 18.8% | 16.9% | 15.2% | 7.5% |
| AND | 6.1% | 3.9% | 4.0% | 4.6% | 2.2% |
| CIT | 5.4% | 2.4% | 2.6% | 2.9% | 3.0% |
| END | 7.8% | 5.3% | 4.4% | 11.8% | 7.4% |
| ENX | 11.4% | 9.4% | 8.9% | 8.6% | 2.8% |
| ERG | 22.0% | 20.0% | 20.3% | 21.2% | 1.9% |
| ESS | 6.0% | 3.2% | 3.4% | 3.4% | 2.8% |
| JEN | 25.0% | 23.2% | 23.8% | 23.2% | 1.9% |
| PCR | -15.4% | -16.6% | -16.8% | -17.1% | 1.7% |
| SAP | 11.3% | 10.3% | 11.2% | 11.5% | 1.2% |
| TND | -15.5% | -16.1% | -16.2% | -15.9% | 0.7% |
| UED | 15.4% | 12.0% | 11.0% | 10.8% | 4.6% |

Table A7: Average of Opex/totex and Opex/total cost ratio difference as a % of comparator average – Long Period

| DNSP | 2006-17 | 2006-18 | 2006-19 | 2006-20 | Difference between highest and lowest result |
|------|---------|---------|---------|---------|--|
| ACT | 11.0% | 10.7% | 11.0% | 11.1% | 0.3% |
| AGD | -6.1% | -5.9% | -6.1% | -5.9% | 0.2% |
| AND | -0.9% | -1.1% | -0.8% | -0.3% | 0.8% |
| CIT | -27.1% | -27.0% | -26.2% | -26.2% | 0.9% |
| END | -3.3% | -2.5% | -1.9% | -0.5% | 2.8% |
| ENX | -11.2% | -9.7% | -8.0% | -7.0% | 4.2% |
| ERG | -10.3% | -9.0% | -7.5% | -6.6% | 3.7% |
| ESS | -1.6% | -0.6% | 1.1% | 2.2% | 3.8% |
| JEN | 8.7% | 8.7% | 9.9% | 9.9% | 1.2% |
| PCR | 4.1% | 3.9% | 3.9% | 3.2% | 0.9% |
| SAP | 1.8% | 2.0% | 2.8% | 3.1% | 1.3% |
| TND | -5.8% | -5.3% | -4.3% | -3.7% | 2.1% |
| UED | 6.2% | 6.2% | 6.6% | 6.7% | 0.5% |

Table A8: Average of Opex/totex and Opex/total cost ratio difference as a % of comparator average – Short Period

| DNSP | 2012-17 | 2012-18 | 2012-19 | 2012-20 | Difference between highest and lowest result |
|------|---------|---------|---------|---------|--|
| ACT | 12.9% | 9.9% | 9.6% | 9.8% | 3.2% |
| AGD | -1.9% | -3.9% | -5.3% | -5.0% | 3.4% |
| AND | 0.4% | -1.7% | -1.9% | -1.0% | 2.3% |
| CIT | -20.7% | -22.8% | -22.6% | -23.0% | 2.3% |
| END | 3.9% | 2.5% | 2.2% | 3.4% | 1.7% |
| ENX | -3.1% | -3.0% | -1.6% | -0.4% | 2.7% |
| ERG | -6.4% | -6.1% | -4.5% | -3.3% | 3.0% |
| ESS | 2.7% | 2.2% | 4.0% | 5.7% | 3.5% |
| JEN | 7.5% | 5.9% | 7.5% | 7.7% | 1.9% |
| PCR | 4.7% | 2.4% | 1.8% | 0.8% | 3.9% |
| SAP | 6.7% | 4.3% | 4.4% | 4.8% | 2.4% |
| TND | 1.9% | -0.2% | 0.0% | 0.6% | 2.1% |
| UED | 4.8% | 3.1% | 3.4% | 3.9% | 1.7% |

Table A9: Average of Opex/totex, Opex/total cost and Opex/total inputs ratio difference as a % of comparator average – Long Period

| DNSP | 2006-17 | 2006-18 | 2006-19 | 2006-20 | Difference between highest and lowest result |
|------|---------|---------|---------|---------|--|
| ACT | 11.6% | 11.3% | 11.8% | 11.7% | 0.5% |
| AGD | 4.3% | 4.0% | 3.9% | 3.5% | 0.8% |
| AND | 0.0% | -0.1% | 0.5% | 1.0% | 1.1% |
| CIT | -18.3% | -18.4% | -17.4% | -17.2% | 1.1% |
| END | 1.7% | 2.0% | 2.5% | 5.9% | 4.2% |
| ENX | -3.8% | -2.8% | -1.4% | -0.8% | 3.0% |
| ERG | 1.9% | 2.7% | 4.1% | 4.7% | 2.7% |
| ESS | 2.5% | 2.8% | 4.2% | 4.8% | 2.4% |
| JEN | 13.2% | 13.3% | 14.7% | 14.5% | 1.5% |
| PCR | -3.0% | -3.1% | -2.8% | -3.3% | 0.6% |
| SAP | 2.6% | 3.0% | 4.2% | 4.6% | 2.0% |
| TND | -8.2% | -7.8% | -6.9% | -6.6% | 1.7% |
| UED | 9.1% | 8.8% | 9.3% | 9.2% | 0.5% |

Table A10: Average of Opex/totex, Opex/total cost and Opex/total inputs ratio difference as a % of comparator average – Short Period

| DNSP | 2012-17 | 2012-18 | 2012-19 | 2012-20 | Difference between highest and lowest result |
|------|---------|---------|---------|---------|--|
| ACT | 14.1% | 11.3% | 10.8% | 10.8% | 3.3% |
| AGD | 6.3% | 3.6% | 2.1% | 1.7% | 4.6% |
| AND | 2.3% | 0.2% | 0.1% | 0.9% | 2.2% |
| CIT | -12.0% | -14.4% | -14.2% | -14.4% | 2.4% |
| END | 5.2% | 3.5% | 2.9% | 6.2% | 3.3% |
| ENX | 1.7% | 1.1% | 1.9% | 2.6% | 1.5% |
| ERG | 3.1% | 2.6% | 3.8% | 4.8% | 2.2% |
| ESS | 3.8% | 2.5% | 3.8% | 4.9% | 2.4% |
| JEN | 13.3% | 11.7% | 12.9% | 12.9% | 1.7% |
| PCR | -2.0% | -4.0% | -4.4% | -5.2% | 3.1% |
| SAP | 8.2% | 6.3% | 6.7% | 7.0% | 2.0% |
| TND | -3.9% | -5.5% | -5.4% | -4.9% | 1.6% |
| UED | 8.3% | 6.1% | 5.9% | 6.2% | 2.4% |

Table A11: Weighted average of Opex/totex, Opex/total cost and Opex/total inputs ratio difference as a % of comparator average* – Long Period

| DNSP | 2006-17 | 2006-18 | 2006-19 | 2006-20 | Difference between highest and lowest result |
|------|---------|---------|---------|---------|--|
| ACT | 11.8% | 11.6% | 12.1% | 12.2% | 0.7% |
| AGD | -0.9% | -0.7% | -0.7% | -0.6% | 0.3% |
| AND | -3.1% | -3.2% | -2.6% | -2.1% | 1.1% |
| CIT | -20.6% | -20.5% | -19.5% | -19.4% | 1.2% |
| END | -2.2% | -1.6% | -1.0% | 1.8% | 4.0% |
| ENX | -8.3% | -6.9% | -5.1% | -4.1% | 4.1% |
| ERG | -3.1% | -2.0% | -0.4% | 0.3% | 3.4% |
| ESS | -1.4% | -0.6% | 1.1% | 2.0% | 3.4% |
| JEN | 9.8% | 9.9% | 11.5% | 11.5% | 1.7% |
| PCR | -3.2% | -3.4% | -3.1% | -3.8% | 0.7% |
| SAP | 4.5% | 4.7% | 5.7% | 6.1% | 1.6% |
| TND | -8.1% | -7.7% | -6.7% | -6.1% | 1.9% |
| UED | 8.0% | 7.9% | 8.7% | 8.7% | 0.7% |

*50% Opex/totex, 25% Opex/total cost and 25% Opex/total inputs

Table A12: Weighted average of Opex/totex, Opex/total cost and Opex/total inputs ratio difference as a % of comparator average* – Short Period

| DNSP | 2012-17 | 2012-18 | 2012-19 | 2012-20 | Difference between highest and lowest result |
|------|---------|---------|---------|---------|--|
| ACT | 15.7% | 11.8% | 11.4% | 11.7% | 4.3% |
| AGD | 6.4% | 3.1% | 1.4% | 1.4% | 5.0% |
| AND | 0.5% | -2.5% | -2.7% | -1.8% | 3.1% |
| CIT | -13.2% | -16.1% | -15.8% | -16.2% | 3.0% |
| END | 5.5% | 2.9% | 2.3% | 4.9% | 3.2% |
| ENX | 1.1% | 0.0% | 1.2% | 2.2% | 2.2% |
| ERG | 1.5% | 0.5% | 1.9% | 2.7% | 2.2% |
| ESS | 4.2% | 2.4% | 3.9% | 5.1% | 2.7% |
| JEN | 11.2% | 8.6% | 10.2% | 10.4% | 2.6% |
| PCR | -1.2% | -4.2% | -4.8% | -5.7% | 4.6% |
| SAP | 10.2% | 6.9% | 7.1% | 7.6% | 3.3% |
| TND | 0.5% | -2.9% | -2.6% | -2.1% | 3.4% |
| UED | 7.9% | 5.3% | 5.5% | 6.0% | 2.7% |

*50% Opex/totex, 25% Opex/total cost and 25% Opex/total inputs



Thank you

