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

Final Guidance note

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AUSTRALIAN ENERGY REGULATOR

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Overview

Final position

We will address differences in capitalisation practices (a term referring to application of capitalisation accounting policy and opex/capital trade-offs) by adapting our economic benchmarking by allocating a fixed proportion (100%) of corporate overheads expenditure to the operating expenditure (opex) series for benchmarking purposes. We intend to adopt this approach for our electricity distribution annual benchmarking reports, starting from 2023.

Purpose of this final guidance note

This final guidance note sets out how we will address the impact of differences between distribution network service providers' (DNSPs) capitalisation practices on our economic benchmarking, and the reasons for this final view.

What is the issue?

The AER publishes benchmarking results each year in a report on the productivity growth and efficiency of electricity DNSPs in the National Electricity Market (NEM). While DNSPs are broadly comparable, they differ on a range of characteristics, such as network size and aspects of their operating environment. The aim of our efficiency benchmarking is that the results should largely reflect differences in DNSPs' efficiency, with all other major sources of differences otherwise accounted for. It is therefore important for benchmarking to be carried out on the basis of data that is as consistent and comparable as possible. One possible difference between DNSPs that may impact the comparability of the benchmarking results relates to differences in their capitalisation practices, i.e. their accounting for and/or use of opex versus capital inputs. This final guidance sets out how we will account for these differences in our benchmarking.

Our consultation process

This final guidance follows our 29 November 2021 Consultation Paper and 31 October 2022 draft guidance note which presented our preliminary and draft views, respectively, on the nature and extent of the impact of capitalisation differences on our benchmarking and options to address the issue.

We have been informed by stakeholder feedback in coming to our final position. Stakeholder views are summarised in Appendix A.

Final position

Is there an issue?

Consistent with our draft guidance note, we consider there are material differences in application of capitalisation accounting policy and opex/capital trade-offs between DNSPs, and these are having a material impact on our benchmarking results. Key measures to which we have had regard in coming to this position are the opex/capital ratios and overheads measures we presented in the draft guidance note. We therefore consider these differences, if not addressed, pose an issue to the comparability of our benchmarking.

Our preferred option to address the issue

In light of our analysis and the evidence provided in submissions, we consider conducting benchmarking by allocating a fixed proportion (100%) of corporate overheads expenditure to the opex series for benchmarking purposes (Option 5)[1] is the most appropriate means of addressing material differences. We intend to adopt this approach for our electricity distribution annual benchmarking reports, starting from 2023.

The key advantage of Option 5 is that it addresses a material and known source of capitalisation differences, namely the differing approaches by DNSPs to expensing/capitalisation of corporate overheads. Equally, it also limits inadvertently accounting for factors that are not related to capitalisation. The main limitation of Option 5 is that it does not comprehensively capture all sources of capitalisation differences, particularly in relation to opex/capital trade-offs. While opex/capital trade-offs are to some extent indirectly taken into account in our econometric opex cost function models,[2] the extent to which opex/capital trade-offs are taken into account is unknown.

However, we consider the limitations of the other options are more significant. Of the other options put forward:

- We do not consider the econometric option (Option 2), which involves adding an explanatory variable for capitalisation practices, as having requisite feasibility to be implementable at this stage
- The post-modelling operating environment factor (OEF) adjustment to the opex econometric models, based on opex/capital ratios (Option 1), may be capturing factors other than capitalisation practices, such as capital expenditure (capex) replacement cycles and differing levels of efficiency between opex and capital. In addition, this adjustment may to some extent duplicate what is already captured indirectly in the opex econometric models output specification.

Implementation of our preferred option

In the draft guidance note, we raised a number of implementation matters that we had identified with Option 5, to which we sought and received stakeholder feedback. We have given these issues further thought and taken submissions into account in deciding to use the following approach:

- Using a frozen Cost Allocation Method (CAM) approach for benchmarking purposes rather than a 'floating' one (CAM of the day). This is due to the importance of time-series data consistency when interpreting benchmarking results and as a means to limit strategic cost re-allocations by DNSPs. While a floating CAM may be more representative of current opex, if CAM changes were admitted for benchmarking purposes, it would not be clear if changes to the benchmarking scores are the result of change in opex efficiency or due to a change in CAM. A floating CAM approach also provides DNSPs more opportunity to engage in strategic CAM updates, given a DNSP

[1] We presented a range of numbered options in the draft guidance note for addressing this issue, including the preferred Option 5. See AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 29–32.

[2] This is due to the high correlation of the outputs in that modelling and a capital input variable. If the omitted capital input is closely correlated with the outputs, then to some extent it may be accounted for in the measurement of opex efficiency through the opex cost function model.

may have an incentive to improve its benchmarking performance by re-allocating expenditure from opex to capex in response to its benchmarking performance.

- Moving from the 2014 set of CAMs to the current (2022) set as the basis for the frozen CAM. Moving to a more recent set of CAMs makes the CAM basis we use for benchmarking more current. This addresses the concerns in relation to the 2014 CAMs being outdated and causing a growing divergence between opex used for benchmarking and actual reported opex. In addition, moving to the current CAMs alleviates the administrative burden of re-casting opex each year under an old CAM for those DNSPs who have changed their CAMs. Further, the change in the benchmarking approach to use Option 5 presents an opportune juncture to update the CAM basis for benchmarking, and aligns with the nature of the recent CAM changes for some DNSPs.
- Allocation of only corporate, not additionally network, overheads to opex for benchmarking purposes. This is on account of the opex nature of corporate overheads relative to network overheads, which are more driven by capex needs. In addition, compared to the case of network overheads, we note the consistent way corporate overheads are delineated from other opex categories within and across DNSPs. We also recognise the regulatory framework having safeguards to protect against strategic cost re-allocations (between corporate and network overheads) by DNSPs.
- Percentage of capitalised corporate overheads to be allocated to opex of 100%. This is on account of the simplicity of this approach, and that it increasingly reflects the current practices of some DNSPs.
- Capitalised corporate overheads to be included in base year opex, when comparing to modelled efficient opex. This is so that there is a consistent basis for comparison.
- Option 5 to be integrated/harmonised with our current approach to assessing proposed capitalised corporate overheads forecasts under the assessment of capex. This will provide further information on the efficiency of past capitalised corporate overheads.
- To rely on estimated data for 2006–08 corporate overheads, rather than to move the start of the benchmarking period from 2006 to 2009. This allows us to retain the statistical benefits of a longer time series. We are currently consulting with the DNSPs on the detailed implementation of this approach in the context of the 2023 annual benchmarking report.

Contents

1 Outline of this final guidance note

In this final guidance note we examine the following key questions, and the associated issues, and our analysis and views:

- Section 2 – is there a problem posed by differences in the application of capitalisation accounting policy and opex/capital trade-offs between DNSPs, and over time, in terms of the impact on the comparability of our benchmarking results? We break this down into the following questions:
  - Are there material differences in capitalisation accounting policies and opex/capital trade-offs between DNSPs that drive material differences in opex, and if so, how material are these differences (Section 2.2.1)?
  - Are these differences having a material impact on the benchmarking results (Section 2.2.2)?
- Section 3 – if there are material differences in these two capitalisation-related practices between DNSPs, and over time, in terms of the impact on the benchmarking results, how should this be addressed? We summarise stakeholder views in response to our draft guidance note, and our final position.
- Section 4 – we set out our views on implementation matters associated with our final position to use Option 5.

2 Do differences in capitalisation practices impact our benchmarking results?

We use the term *capitalisation practices* to encompass:

- capitalisation policy, i.e. a DNSP's accounting policy of classifying expenditure as opex or capex, (e.g. expensing/capitalising overheads)
- opex / capital trade-offs, e.g. the choice between pole maintenance (opex) or replacement (capital inputs), or the choice between cloud computing (opex) and in-house equipment (capital inputs) for ICT.

We provide further discussion on the types of capitalisation practices, and the potential impact of differences in these practices between DNSPs, and over time, on our benchmarking in Section 2.1 of our draft guidance note.[3]

Consistent with our draft guidance note, our final view is that we consider there are material differences in these two capitalisation practices between DNSPs, and that these are having a material impact on our benchmarking results. Key measures to which we have had regard are the opex/capital ratios, and overheads measures, which we presented in Section 2.2 and 2.3 of the draft guidance note.[4] We therefore consider these differences, if not addressed, pose an issue to the comparability of our benchmarking.

This section summarises stakeholder submissions to the draft guidance note and presents our final view and our reasons.

2.1 Submissions to the draft guidance note

There was widespread agreement among stakeholders that there are material differences in capitalisation practices and that these would be having a material impact on the benchmarking results.[5] These are summarised in more detail in Appendix A.1.

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[3] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 2–4.

[4] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 4–28.

[5] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1; AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 1; CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 1; Energy Queensland, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 1; Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1; Evoenergy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1; Jemena, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1; SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 1; TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 1.

2.2 Reasons for AER final guidance

We consider there are material differences in capitalisation practices (the application of capitalisation accounting policy and opex/capital trade-offs) between DNSPs, and these are having a material impact on our benchmarking results.

2.2.1 How material are the differences in capitalisation practices between DNSPs?

We consider there are material differences in capitalisation practices between DNSPs. The measures we have considered provide useful high-level gauges of differences in capitalisation practices. The differences are indicated by observing the differences in the opex/capital ratios,[6] and in corporate overhead allocations, between businesses, combined with the share of total opex that opex overheads comprises.

This is consistent with our view in the draft guidance note and the analysis we set out there, including the relevant quantification of the issue and associated charts. Across the three opex/capital ratios averaged over the benchmarking period, we found that at least 7 of the 13 DNSPs had an opex/capital ratio of 7 per cent or more above or below the comparator-average ratio. We also found expensed corporate overheads comprise a material proportion of total opex for all DNSPs, and DNSPs have notably differing allocations of corporate overheads between opex and capex. As a result, we consider these also provide important information as measures of capitalisation differences. See Section 2.2 of our draft guidance note for this analysis and information.[7]

2.2.2 How material is the impact of these differences in capitalisation practices on our benchmarking results?

We consider these capitalisation differences are having a material impact on our benchmarking results. This impact is illustrated by analysis presented in the draft guidance note. In particular, observation of DNSPs' opex/capital ratios, relative to the benchmark comparators' opex/capital ratios, and sensitivity of opex benchmarking efficiency scores under current CAMs compared to using the 2014 CAMs.[8] As noted above, we found that many DNSPs' opex/capital ratios diverge materially from the comparator-average ratio. Our sensitivity analysis showed a significant change in the efficiency scores of all DNSPs under current CAMs compared to 2014 CAMs, (other than frontier firm Powercor). See Section 2.3 of our draft guidance note for this analysis and information.

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[6] In the Consultation Paper, we identified three particular types of opex/capital ratios for measuring capitalisation differences that reflected three different ways of measuring inputs: one based on expenditure (opex/total expenditure, which includes capex), one based on cost (opex/total cost, which includes capital cost), and one based on quantity (opex/total inputs, which includes capital input quantity as calculated in our Multilateral Total Factor Productivity technique).

[7] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 4–24.

[8] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 24–28.

3 How should we address the differences in capitalisation practices?

Based on the available information before us, we consider conducting benchmarking by allocating a fixed proportion (100%) of corporate overheads expenditure to the opex series for benchmarking purposes (Option 5) is the most appropriate means of addressing differences in capitalisation practices (differences in the application of capitalisation accounting policy and opex/capital trade-offs). We consider it performs best against the assessment criteria[9] we have used to assess the available options:

- Validity and fitness for purpose
  - reasonably reflects the material differences
  - limits perverse incentives for businesses to change their capitalisation policies in response to its benchmarking results
  - the extent to which it is consistent with our other assessment approaches e.g. for capex.
- Accuracy and reliability: reflects / takes into account the most recent data and practices, and produces unbiased and consistent results
- Robustness: remains valid under different assumptions and conditions and is stable over time.
- Transparency: is based on a transparent methodology that can be replicated by stakeholders.
- Parsimony: we will typically prefer a simpler technique (or one with fewer free parameters) over more complex techniques.

We intend to adopt this approach for our electricity distribution annual benchmarking reports, starting from 2023.

The draft guidance note enumerated seven options for how to address differences in capitalisation practices, covering capitalisation accounting policy and opex/capital trade-offs. In submissions we received particular comment from stakeholders on:

- Option 1 – Applying post-modelling OEF adjustment to the impacted DNSPs' efficiency scores under our current benchmarking approach (based on frozen 2014 CAMs) using opex/capital ratios
- Option 2 – Adding an explanatory variable to the econometric opex cost function benchmarking models that directly captures capitalisation practices
- Option 5 (AER-preferred option) – Obtaining benchmarking efficiency scores on the basis of applying a fixed proportion (100%) of corporate overheads expenditure in the opex series for benchmarking purposes.

[9] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 30–32.

The draft guidance note (Sections 3.1 and 3.2) contained more detail on the options[10] we considered and the reasons for our preferred option.[11]

We consider the key advantage of Option 5 is that it addresses a material and known source of capitalisation practice differences, namely the differing approaches by DNSPs to expensing/capitalisation of corporate overheads. Equally, it also limits inadvertently accounting for factors that are not related to capitalisation practices. The main limitation of Option 5 is that it does not comprehensively capture all sources of capitalisation practice differences, particularly in relation to opex/capital trade-offs. While opex/capital trade-offs are to some extent indirectly taken into account in our econometric opex cost function models,[12] the extent to which opex/capital trade-offs are taken into account is unknown.

However, we consider the limitations of the other options are more significant. Of the other options put forward by stakeholders:

- We do not consider the econometric option (Option 2) which involves adding an explanatory variable for capitalisation practices as having requisite feasibility to be implementable at this stage (see Section 3.2.3 for further discussion)
- The post-modelling OEF adjustment based on opex/capital ratios in Option 1 may be capturing factors other than capitalisation practices, such as capex replacement cycles and differing levels of efficiency between opex and capital (see Section 3.2.2 for further discussion). In addition, this adjustment may to some extent duplicate what is already captured indirectly in the opex econometric model output specification.

As noted above there were seven options considered. There were limited comments on the other options (Options 3, 4, 6 and 7) in response to the draft guidance note. These are summarised in Appendix A.2.4. We maintain our concerns with Option 4 in relation to its prescriptive use of opex/capital ratios.[13] We also maintain our concerns with Option 7, in relation to the use of CAM-of-the-day opex (set out below in Section 4.2.1) and in relation to a more intrusive approach to opex/capital trade-offs.[14]

The following sections summarise stakeholder submissions to the draft guidance note and present our final view of the most appropriate approach to address differences in capitalisation practices in our benchmarking results and our reasons.

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[10] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 29–32.

[11] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 33–38.

[12] This is due to the high correlation of the outputs in that modelling and a capital input variable. If the omitted capital input is closely correlated with the outputs, then to some extent it may be accounted for in the measurement of opex efficiency through the opex cost function model.

[13] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 60–61.

[14] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 65–67.

3.1 Submissions to the draft guidance note

This section summarises stakeholder submissions on the options to address differences in capitalisation practices (i.e. differences in the application of capitalisation accounting policy and opex/capital trade-offs). Appendix A.2 provides more detail on submissions.

3.1.1 Stakeholders broadly supported Option 5

There was widespread stakeholder support for Option 5, with most DNSPs stating it as their first or second preference.[15] One submission (Energy Queensland) preferred Option 2 to Option 5[16], whereas other DNSPs (Endeavour Energy[17] and Ausgrid[18]) moderated their previous support for Option 2, preferring Option 5. Jemena considered that addressing the Option 5 implementation matters (discussed in Section 4) was critical to ensuring it provides a material improvement to Option 1.[19] The pros and cons of Option 5 as given in submissions reflected those we had put forward in our draft guidance note. Appendix A.2.1 discusses these views in more detail. There were limited comments on the other options presented in (Sections 3.5, 3.6, and 3.8 of) the draft guidance note.

3.1.2 Stakeholder specific comments on Option 1

To the extent submissions commented on this option, it was largely to re-express or cross-reference their previous submissions, particularly in relation to the ratios not being fit-for-purpose to inform an OEF adjustment due to their volatility and as they are sensitive to a variety of factors unrelated to capitalisation. These views are discussed in detail in Section 3.3 of the draft guidance note.[20] Some DNSPs dropped their previous support for this option, acknowledging the shortcoming of the ratios in informing an OEF, as outlined by the AER and shifting support to other options.[21]

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[15] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 1; Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1; Evoenergy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2; TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 1; SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 1; AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 1; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1.

[16] Energy Queensland, *Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 1; Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, pp. 1–5.

[17] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1.

[18] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1.

[19] Jemena, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 1–2.

[20] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 41–48.

[21] Evoenergy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2; Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 1–3; AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 42, 47.

3.1.3 Stakeholder specific comments on Option 2

While noting this option is conceptually preferable, some DNSPs (Ausgrid[22] and Endeavour Energy[23]) moderated their previous support for Option 2, acknowledging the practical challenges to this approach as raised by the AER in Section 3.4 of the draft guidance note. In particular, they pointed to the data availability and consistency issues that exist with this option.

Energy Queensland recommended the AER fully explore the viability of Option 2 due both to its conceptual appeal and practicability.[24] It did not share our concerns on the use of opex/capital ratios as explanatory variable for capitalisation practices. Its views are set out in more detail in Section A.2.3.

3.1.4 Stakeholder specific comments on other options

In relation to Option 4 (applying a common opex/capital ratio to all DNSPs as a pre-modelling adjustment), Endeavour Energy noted that, given the limitations of opex/capital ratios, the use of these ratios to derive a common opex/capital ratio that would apply to all DNSPs limits the appeal of this approach.[25]

In relation to Option 7 (identifying specific opex/capital trade-offs and applying a common corporate overhead proportion), AusNet Services maintained its previous submission that this was its most preferred approach (with Option 5 as its second-preferred).[26] It argued that benchmarking should be based on actual (CAM of the day) opex, with a common / consistent approach across DNSPs for specific opex / capital trade-offs.[27]

3.2 Reasons for AER final guidance

As discussed above, our final position is to undertake our economic benchmarking on the basis of allocating a fixed proportion (100%) of corporate overheads expenditure to the opex series for benchmarking purposes (Option 5). We respond to stakeholder feedback below, both in relation to Option 5, as well as in relation to other options raised in the draft guidance note where there was material feedback.

3.2.1 Final position: Option 5 – Benchmarking on the basis of a fixed proportion of overheads

Section 3.1.1 sets out, in the context of discussing stakeholder submissions, the key advantages and main limitations of Option 5. On balance, we consider the advantages

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[22] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1.

[23] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1.

[24] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 1.

[25] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1–2.

[26] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 65–67.

[27] AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 1.

outweigh the limitations, and that this option, while not perfect, is at this time the best option able to address the material differences in capitalisation practices that are impacting the benchmarking results. In terms of our assessment criteria, we consider this approach scores particularly highly on validity and fitness for purpose, transparency and parsimony. The draft guidance note (Section 3.2) contains more detail on the reasons for preferring Option 5 relative to the other options, which we consider are still valid.[28] We set out below our responses to the key arguments raised in submissions in response to the draft guidance note.

3.2.1.1 Response to the argument that Option 5 does not account for network overheads

We recognise that there are differences in how DNSPs expense and capitalise network overheads, and that this source of differences is not directly addressed under our preferred option (which only accounts for corporate overhead differences). However, we consider that additionally allocating network overheads to opex is problematic, in light of:

- The recurrent and stable opex-like nature of corporate overheads, versus lumpier network overheads
- The consistent and stable way corporate overheads are delineated from other opex categories within and across DNSPs
- The regulatory framework's safeguards to limit strategic cost re-allocations by DNSPs.

These reasons are consistent with those given by several submitters and are discussed in further detail in Section 4.2.3.

3.2.1.2 Response to the argument that Option 5 does not account for opex/capital trade-offs

We recognise that Option 5 does not directly account for differences in opex/capital trade-offs between DNSPs. However, as we stated in the draft guidance note, opex/capital trade-offs are to some extent indirectly taken into account in our econometric opex cost function models, due to the high correlation of the outputs in that modelling and a capital input variable.[29] We recognise, however, that the exact extent is unknown and that this is an empirical question, which can only be investigated further by undertaking further analysis. We discuss this further in Section 3.2.3.

3.2.1.3 Status of Option 5 over the longer term

We intend to apply this final guidance to the 2023 annual benchmarking report and subsequent reports for a number of years. We recognise that a settled approach for a considerable period to this issue provides regulatory certainty to industry stakeholders. However, we will monitor the performance of this approach, and as with any final regulatory measure, this final guidance should not be considered as everlasting. We conduct a benchmarking development program that seeks continuous improvement in our benchmarking toolkit, including in light of ongoing performance. This includes ongoing

[28] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 32–37.

[29] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, p. 33.

development of our opex econometric cost functions over the medium-longer term. In addition, application of our benchmarking results to the assessment of efficiency of past opex in resets provides a further opportunity for both us, and stakeholders, to consider any further refinements, including whether our approach to capitalisation remains fit for purpose.

3.2.2 Option 1: Applying a post-modelling OEF adjustment for capitalisation to the efficiency scores under the frozen 2014 CAMs using opex/capital ratios

The pros and cons of Option 1 are discussed in detail in Sections 3.2 and 3.3 of our draft guidance note.[30] While we note this option potentially addresses both types of capitalisation practices in the OEF adjustment, we maintain our view from the draft guidance note in relation to the risks of applying a post-modelling OEF adjustment based on opex/capital ratios. In particular that it:

- Captures factors other than capitalisation practices, such as capex replacement cycles, differing degrees of technical inefficiency in the use of opex and capital inputs, allocative inefficiencies and operating environment factors (discussed further below in Section 3.2.3.)
- Duplicates, to some extent, what is already captured implicitly in the opex econometric model output specification, particularly in relation to the opex / capex trade-offs aspect of different capitalisation practices.

As a result, we do not consider on balance this option should be implemented. In terms of the criteria, we maintain our assessment of the draft guidance note that this approach scores lower than Option 5 on validity/fitness for purpose, accuracy, transparency and parsimony.[31]

We also note the limited support for this option by stakeholders, as mentioned above and shown in Appendix A.2.1.

3.2.3 Option 2: Adding an explanatory variable to the econometric benchmarking models that directly captures capitalisation practices

We recognise the conceptual appeal of this option – in particular that it would directly include capitalisation practices, including opex/capital trade-offs, in the benchmarking econometric opex cost function models. However, in light of our further investigations, we consider it is not feasible to develop this option at this stage because:

- there is insufficient knowledge of the materiality of opex/capital substitutability
- the proposed solution to the problem put forward by some stakeholders, namely the inclusion of an opex/capital ratio as explanatory variable, is methodologically flawed since it suffers from endogeneity and does not have a basis in economic theory. It also has some practical implementation issues in terms of insufficient consistency of capital cost data across the sample's three jurisdictions.

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[30] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 33–37, 41–48.

[31] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 35–36.

We consider both of these issues could potentially be advanced by further empirical analysis, using appropriately formulated econometric modelling. Broadly speaking, standard econometric approaches that would take account of substitution between capital and non-capital inputs include the estimation of short-run opex cost functions which include a capital quantity input, and the estimation of long-run opex cost functions either individually or as part of a system of equations.[32]

In terms of the arguments put forward by Energy Queensland in relation to the use of the opex/capital ratios as explanatory variable (outlined in Appendix A.2.3):

- We do not consider opex/capital ratios are an appropriate choice of explanatory variable. This primarily reflects the concerns we have in relation to the ratios. In particular, given these ratios could reflect a DNSP's allocative inefficiency in the use of opex and capital, their use as explanatory variables would not adequately distinguish allocative efficiency (which we do want to control for) from allocative inefficiency (which we want to capture in the error term as estimated measures of inefficiency). One potential means of distinguishing allocative efficiency and allocative inefficiency is the above-mentioned long-run opex cost function, which may take direct account of allocative efficiency with its inclusion of the input price ratio as an explanatory variable. We also consider the opex/capital ratios could reflect a response to a DNSP's particular operating environment (e.g. largely urban versus largely rural), meaning there may be potential duplication with our post-modelling OEF adjustments.[33]

  In relation to Energy Queensland's argument that a capital input variable is merely correlated with network scale (see Appendix A.2.3), this per se is not in question. However, while this may lead to multicollinearity, which affects the precision of parameter estimates via increased variances, we do not consider this correlation leads to biased parameter estimates.

- We maintain that use of opex/capital ratios, even if averaged, will contain some degree of endogeneity in the model because the dependent variable (opex) is partly a function of itself, and hence the parameter estimates may be biased. Further, we have investigated the Frontier Economics simulation analysis that it carried out for Energy Queensland.[34] This was conducted to test whether the averaging of the opex/capital ratio leads to an endogeneity problem for the regression. Our view is that this analysis did not demonstrate the claimed finding that using averaged opex/capital ratios instead

[32] As raised in the draft guidance note in Section 3.4, a long-run opex cost function includes relative input prices as an explanatory variable for the purpose of statistical testing of whether there is a substitution effect between capital and non-capital inputs, and if so, the relative importance of that effect. Relative input prices as an explanatory variable captures substitution between opex and capital inputs, as in response to relative price change (e.g. if opex price increases by more than the capital price), their relative use changes to substitute the increasingly cheaper input (capital) for the increasingly more expensive input (opex) in order to minimise total costs. Empirically, this can be modelled via a long-run opex cost function (a conditional input demand function), where opex quantity is a function of relative input prices. Thus, statistically testing for the coefficient with relative input prices tests for the substitution effect. See AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 51–52.

[33] AER, *Final Decision Jemena distribution determination 2021–26, Attachment 6 – Operating expenditure*, April 2021, pp. 28–30.

[34] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, pp. 3–4.

of annual opex/capital ratios reduces endogeneity. We understand the analysis used the parameter estimates, and the set of residuals from one of the opex cost benchmarking models, and reported the average correlation coefficient between simulated annual opex cost share and simulated residuals, and between simulated *average* opex cost share and simulated residuals. Energy Queensland reported the finding that the correlation for the former was 0.24 and the latter, 0.006. It considered this reduction in correlation illustrated that using averaged opex/capital ratios is likely to significantly reduce the severity of the endogeneity problem. We consider this analysis unusual and problematic, including as:

  - We do not agree with the characterisation of the simulated residuals as errors; rather, they are estimates of the errors
  - The method that is usually recommended to test whether the endogeneity of a variable is a problem is the Durbin-Wu-Hausman test.[35] We have not carried out this test due to the conceptual issues set out above, which mean we do not consider empirical testing worthwhile.

- We maintain that the lack of consistency of international data is problematic. While both Australia and New Zealand have broadly similar regulatory frameworks, and regulatory asset valuation methods based on depreciated replacement cost, North American regulators typically use a different asset valuation method based on depreciated original cost. This is a significant difference of measurement methodology in the context of econometric methods of benchmarking, which rely on like-for-like comparability across the sample. Hence, while it may be possible to construct a reasonably consistent measure of capital assets for Australia and New Zealand, it may not be feasible to construct a consistent measure of capital assets for Ontario DNSPs. As discussed in Section 3.4.2 of the draft guidance note, this poses a challenge to incorporating a consistent measure of capital input into the opex econometric cost function.[36]

  Further, we also do not agree we are being inconsistent with our use of country dummy variables for overseas DNSPs, whereby a country dummy variable captures variations in DNSP capitalisation of corporate overheads but is not adequate to control for differing opex/capital measures under Option 2. We consider a dummy variable is effective for the former purpose, but not adequate for the latter. This is because including country dummy variables for Ontario and New Zealand DNSPs is equivalent to having a different intercept for each of the two overseas jurisdictions compared to Australia.[37] These dummies will adequately account for differences in the conditional means of opex (i.e., conditional on the explanatory variables) arising from different average rates of corporate overhead expensing. Hence, the coefficients on these country dummy variables can therefore be expected to change to some extent when the revised data on corporate overheads capitalisation is used for Australia. As broader context, we note we are not seeking to measure the efficiency of individual overseas DNSPs, and for this

[35] Baum, Christopher F. 2006. *An Introduction to Modern Econometrics Using Stata*. Stata Press, pp. 211–14.

[36] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 53–55.

[37] In a log-log model, this is equivalent to a distinct multiplicative term applied to opex in each overseas distribution in the unlogged form of the model. This will account for average multiplicative effects, including differences in the average rate of capitalisation of corporate overheads, among other things.

reason, the jurisdictional country dummy variables provide a sufficient degree of precision. However, these jurisdictional dummy variables would not be adequate for controlling for the mismeasurement of a specific explanatory variable in the model arising from inter-jurisdictional capital measurement differences. Although one might attempt to include an interaction between jurisdictional dummies and the problematic capital measure (if a capital measure were included), the measurement inconsistencies are more complex and any such approach may lead to biased parameter estimates.

In terms of the criteria, therefore, while in theory it could be a fit-for-purpose, transparent and parsimonious approach if it could be implemented, we consider this option scores less well than Option 5 on validity, accuracy, reliability and robustness.

4 Option 5 implementation matters

In Section 3.2.2 of the draft guidance note, we raised a number of implementation matters, to which we sought and received stakeholder feedback.[38] Reflecting our further analysis, and the stakeholder feedback, we have decided to use the following approach to implement Option 5:

- Using a frozen CAM approach for benchmarking purposes, rather than a 'floating' one (CAM of the day)
- Moving from the 2014 set of CAMs to the current (2022) set as the basis for the frozen CAM
- Allocation of only corporate, not additionally network, overheads to opex for benchmarking purposes
- Percentage of capitalised corporate overheads to be allocated to opex of 100%
- Capitalised corporate overheads included in base year opex, when comparing to modelled efficient opex
- Option 5 to be integrated/harmonised with our current approach to assessing proposed capitalised corporate overheads forecasts under the assessment of capex
- To rely on estimated data for 2006–08 corporate overheads, rather than to move the start of the benchmarking period from 2006 to 2009. We are currently consulting with the DNSPs on the detailed implementation of this approach in the context of the 2023 annual benchmarking report.

Below we summarise stakeholder submissions and presents our reasons for the final view outlined above in relation to the implementation matters for Option 5.

4.1 Submissions to the draft guidance note

Submissions were broadly aligned and consistent with our final views on most of the Option 5 implementation matters as set out above and also in relation to our reasoning for these positions as set out below. Further detail on stakeholder views on implementation matters is contained in Appendix A.3.

There was, however, less consensus between submissions on the matter of whether to rely on estimated data for 2006–08 corporate overheads expenditure which is not consistently available from all DNSPs. Some DNSPs argued that we should rely on a degree of estimation of corporate overhead expenditure where actual data is unavailable, since it would allow the benchmarking start point of 2006 to be retained.[39] In contrast, three DNSPs argued that we should revise the start of our benchmarking series to 2009 as they had concerns

[38] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, pp. 38–41.

[39] AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 3; CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 5.

about credibly estimating corporate overhead expenditures for this period.[40] Five other DNSPs did not comment on this issue. DNSPs generally submitted that actual data for 2006–08 is not (readily) available on their systems, although we note that CitiPower / Powercor / United Energy submitted that they have actual data available for CitiPower and Powercor.

4.2 Reasons for AER final guidance

Our final positions on Option 5 implementation matters are outlined above. We elaborate on our reasons and respond to stakeholder feedback below.

4.2.1 Frozen CAMs versus CAM-of-the-day

We will continue to use a frozen CAM rather than a 'floating' (CAM of the day) approach.

This is due to the importance of time-series data consistency when interpreting benchmarking results and as a means to limit strategic cost re-allocations by DNSPs. While a floating CAM may be more representative of current opex, if CAM changes were admitted for benchmarking purposes, it would not be clear if changes to the benchmarking scores are the result of change in opex efficiency or due to a change in CAM. We recognise there is a trade-off here between how current a CAM is and the consistency and stability of the CAM. The longer the freezing period, the more likely the reported opex series for benchmarking departs from the actual opex in the current year. We consider that while a floating CAM would be current, it would not strike the optimal balance given the possibility of inconsistency/instability in the CAM. This trade-off also informs the assessment of how long a period of freezing would be appropriate. This is discussed in Section 4.2.2.

In relation to strategic cost re-allocations, we note the majority of stakeholders are aligned with our view that a floating CAM approach for benchmarking provides more opportunity to benefit from strategic CAM updates. We also recognise, however, these incentives can to some extent exist under any approach to CAM for benchmarking purposes. For example, DNSPs could strategically update their CAMs, as continuing to use frozen CAMs for benchmarking may create the incentive for a DNSP, depending on its benchmarking performance, to revise its CAM to allocate more expenditure to opex, as this opex will not be captured under opex benchmarking. In this way, its opex benchmarking score is unaffected (given the CAM is frozen), yet it is able to potentially increase its allowed opex forecast in its next reset. That said, we do not consider this form of strategic re-allocation to be a significant issue under a frozen CAM approach under Option 5, as corporate overheads, a principal source of capitalisation policy differences, will be allocated to opex for benchmarking purposes, irrespective of the CAMs in place. Further, we note that:

- As noted by some submissions, the ability to re-allocate expenditure is limited irrespective of a frozen CAM because there are accounting and audit standards

[40] TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 2; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 4; Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 7.

constraints,[41] and the AER assesses a new CAM's conformance to the cost allocation guidelines

- There are strategic constraints on a DNSP making broader cost allocation changes, in terms of allocation of common costs to other business units that are in contestable markets
- In relation to network overheads opex, the level of these is somewhat subject to the level of the capex program.

We will monitor annual relevant CAM changes, and the issue of strategic cost re-allocations under the frozen CAM approach, with a view to consistency and completeness of the opex and capex assessment under the regulatory resets. We will also periodically reconsider if/how any CAM changes impact the implementation of Option 5 as a part of the ongoing benchmarking development program.

Most DNSPs supported a frozen CAM position for the above reasons. The one stakeholder who did not support a frozen CAM approach was AusNet. We do not agree with AusNet's proposal for a CAM of the day approach, for the reasons stated above.

4.2.2 Backcast current CAMs versus 2014 CAMs

We will move to the current (2022) set of CAMs, from the 2014 set, as the new frozen CAM basis for benchmarking.

Moving to a more recent (i.e. 2022) set of CAMs makes the CAM basis we use for benchmarking more current. This addresses the issues raised by several DNSPs, with which we agree, in relation to the 2014 CAMs:

- Being outdated
- Resulting in a growing divergence between opex used for benchmarking and actual reported opex
- The administrative burden of re-casting opex each year under an old CAM for those DNSPs who have changed their CAMs.

The move to the 2022 CAM is also merited as the change in benchmarking approach presents an opportune juncture to update the CAM basis for benchmarking. Further, the nature of the change under Option 5 aligns with the nature of the CAM changes for three of the five DNSPs with changes relative to their 2014 CAMs, namely the move to allocate all corporate overheads expenditure to opex. While there remains significant divergence across the DNSPs on the degree of expensing of corporate overheads, these recent CAM changes have generally increased convergence, given two other DNSPs already expense 100% of corporate overheads, and two other DNSPs generally expense around 90% of corporate overheads.

In terms of strategic cost re-allocations, as discussed above in Section 4.2.1, we consider that DNSPs may have limited ability if the current CAMs are frozen for benchmarking purposes, and regulatory treatment for opex and capex are consistent and complete.

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[41] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 5.

Nevertheless, we recognise that a move from the frozen 2014 CAM basis may mean that DNSPs anticipate further CAM re-freezes in the future, and thus change their CAMs strategically in advance. However, we consider that the strategic opportunity for DNSPs to re-allocate opex is somewhat limited in practice, for the reasons given above in Section 4.2.1.

4.2.3 Inclusion of corporate overheads versus total (corporate plus network) overheads in opex for benchmarking purposes

We will allocate only corporate, not additionally network, overheads to opex for benchmarking purposes. As discussed in Section 3.2.2 of the draft guidance note[42] and further evidenced in submissions, this is on account of:

- The recurrent and stable opex-like nature of corporate overheads, which is not sensitive to the underlying network and variability in capital investment programs. In contrast, network overheads are lumpier and more driven by capex needs.
- The consistent and stable way corporate overheads are delineated from other opex categories within and across DNSPs. This follows from the well-defined nature of corporate overheads activities. This includes their delineation from network overheads activities, which is further evidenced by our not finding material cases of descriptive cost categories appearing under both network and corporate overheads in the Category Analysis Regulatory Information Notices (CA RINs), both within and across DNSPs. In contrast, there is less consistency, and less visibility, across DNSPs and over time in the delineation and/ or use of network overheads relative to direct cost categories. For example, differences in DNSPs' operating models (e.g. outsourcing vs insourcing of network support activities) will also affect whether costs are treated as direct costs or network overheads. Thus, an AER allocation of capitalised network overheads to opex for benchmarking purposes could undermine like-with-like comparability.
- The regulatory framework having safeguards to protect against strategic cost re-allocations by DNSPs, in this case between corporate and network overheads. For instance, we review and approve any changes to a DNSP's CAM. Through the cost information we collect annually through the Regulatory Information Notice process, we will also be able to monitor whether there are any strategic re-allocations and seek to understand the basis for these, and whether there is a need to refine the way we are implementing Option 5.

As outlined in Sections 4.1 and A.3.3, the majority of submissions agreed with this approach and reasoning.

4.2.4 The percentage of capitalised corporate overheads to be allocated to opex for benchmarking purposes

The percentage of capitalised corporate overheads that we will allocate to opex under Option 5 will be 100%. This has wide stakeholder support and is on account of:

- The simplicity of this approach

[42] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, p. 40.

- It increasingly reflects the current practices of some DNSPs.

As outlined in Sections 4.1 and A.3.4, the majority of submissions agreed with this approach and reasoning.

Jemena/CEG argued (see Appendix A.3.4) that allocating 100% of capitalised corporate overheads to opex would disadvantage smaller networks, due to a fixed costs component of corporate overheads, meaning these DNSPs are likely to have larger capitalised corporate overheads as a percentage of opex. Hence, allocating 100% of capitalised corporate overheads to opex may (all else being equal) increase the opex of smaller networks more than for larger networks under Option 5. This argument is abstract in the sense that it does not address the actual current cost allocation practices of different networks. In any case, we do not agree because the opex benchmarking models include measures of output—that is, the size of the networks—and hence control for any economies or diseconomies of scale. Therefore, we do not consider that there is a need to have a separate scale OEF, as suggested by Jemena/CEG as an alternative approach.

4.2.5 Capitalised corporate overheads should be included in base year opex, when comparing to modelled efficient opex

Capitalised corporate overheads will be included in base year opex, when comparing these to modelled efficient opex in the application of our benchmarking results to assess the efficiency of base year opex in resets. This ensures a consistent basis for comparison. Most submissions agreed that this approach was appropriate.

This implies that under the resets, efficiency of historical capitalised corporate overheads (over the benchmarking period), as well as in the base year, will then be assessed as part of the opex using the overall opex benchmarking results. We discuss how this integrates with our capex assessment approach in Section 4.2.6.

4.2.6 Harmonisation with our capex assessment approach

We consider Option 5 can be integrated/harmonised with, and enhance, our current approach to assessing proposed capitalised corporate overheads forecasts under the assessment of capex. In particular, as discussed above, the benchmarking results could inform our efficiency assessment of historical capitalised corporate overheads within the assessment approach. This provides an additional tool for determining an efficient level of capitalised corporate overheads as a starting point for forecasting.

We consider Jemena/CEG's inconsistency argument (see Appendix A.3.6) to mischaracterise our intended method of opex and capex forecasting. Jemena/CEG seem to assume that including capitalised corporate overheads with opex for the purpose of informing an efficiency adjustment factor implies that, for consistency, capitalised corporate overheads should be forecast together with opex within total forecast opex when using the base-trend-step method. This is not the case. For forecasting purposes, we will continue to include capitalised corporate overheads within the capex forecasts where the standardised forecasting methodologies for capitalised overheads may apply,[43] not in the opex forecasts.

[43] For details about the methodology, see AER, *Explanatory Note – AER Standardised Model for Standard Control Services Capital Expenditure*, December 2021, pp. 7–8.

The view that Option 5 necessitates a change in the way capitalised corporate overhead is forecast appears to overlook that the key output of the benchmarking roll-forward model analysis is a percentage decrement to base year opex if any inefficiency is found. This step effectively decouples the specific concept of opex used in benchmarking for base year assessment from that used in opex forecasting. Hence, methods of forecasting capitalised corporate overhead do not need to be addressed in this review.

4.2.7 Estimated capitalised corporate overheads data for 2006–08 versus a revised benchmarking start point of 2009

Our preferred position is to use estimated data for 2006–08 capitalised corporate overheads, in order to retain the longer time series.

Our benchmarking dataset stretches back to 2006, so our benchmarking covers the period from 2006. Data on overheads expenditure, split by expensing and capitalising, and further by network and corporate overhead, is contained in the CA RINs. However, all CA RIN data goes back to only 2009. In light of DNSP feedback from some DNSPs on the absence of ready actual data on capitalised corporate overheads in the 2006–08 period in a form comparable to the CA RIN data, the options for implementing Option 5, as canvassed in the draft guidance note, are:

- To rely on estimated data for 2006–08 capitalised corporate overheads, retaining the start year of the benchmarking series at 2006, or
- To move the start year of our benchmarking dataset from 2006 to 2009.

As noted in Section 4.1, there were a mix of views on these options from stakeholders. We outline below our reasoning for adopting our preferred approach of using estimated 2006–08 data, noting that while this is our preference we will examine the outcome in light of the collection of further information / data from the DNSPs to ensure that it results in a net benefit as compared to starting our data set at 2009.

4.2.7.1 Assessment of the choice between 2006–08 overheads and moving the start year of benchmarking to 2009

Our preferred position is based on a weighing up of the benefits and costs of the two options, and selecting the option with the higher net benefit. This essentially is a trade-off between retaining a longer time series (facilitated by the inclusion of reliable estimated data) and the possible increased accuracy of not using estimated data (albeit with fewer observations). As noted above, our preferred position is to use estimated data for 2006–08 capitalised corporate overheads, in order to retain the longer time series.

The main benefit of the first option (estimated data) is to retain the existing sample of observations which means a longer time series than the alternative. This provides greater 'degrees of freedom'[44] relative to the second option of starting the sample at 2009, and hence likely higher statistical reliability, provided that reliably estimated overhead data are available. This can be measured in terms of lower variances of parameter estimates and thus

[44] 'Degrees of freedom' refers to the number of observations minus the number of parameters to be estimated, and is one measure of the size of the data sample. In econometric cost function analysis using panel data, a large number of observations is generally required to obtain stable and reliable results.

higher t-ratios in the regression results from the opex cost function for a larger sample. In addition to the sample period, the longer time period also provides a greater opportunity for data variation, which is important for obtaining reliable parameter estimates. One output where this may be important is ratcheted maximum demand, in which a substantial part of its variation takes place in the 2006–2008 period, which would be lost if the benchmarking period started in 2009.

The potential downside of using estimated data on capitalised corporate overheads for the 2006–08 period is the possible reduction in accuracy of parameter estimates due to measurement error in the estimated capitalised corporate overheads. This may manifest in increased variances of parameter estimates if measurement error in the dependent variable introduces an additional source of 'noise'. The extent of any reduction in accuracy with the use of estimated data will generally depend on the soundness of the estimation method for the capitalised corporate overhead expenditure, and the quality of any data that is used to inform it. To mitigate the loss in accuracy, we consider it would be preferable to draw on DNSPs' actual data (including proxy data that can help to inform or triangulate corporate overheads data, where available) in deriving overheads estimates, rather than relying on cruder estimation methods.

We have commenced a process to consult with the DNSPs about collecting data from their management accounting systems that could be used for this purpose. As context, we note that the benchmarking dataset already contains a degree of estimation.

The above observations show there is a trade-off between longer time-series and measurement accuracy, both affecting statistical reliability. Using estimated 2006–08 data can increase degrees of freedom in estimation but reduce measurement accuracy, whereas starting the data sample from 2009 may improve measurement accuracy at some cost to reduced sample size. In choosing our preferred option, we have weighed these two considerations.

We have also considered the effort and cost to the businesses of estimating these capitalised corporate overhead costs, and to the regulator in managing the process and assessing these estimated costs. However, we note that these are one-off costs. We also note that most DNSPs favoured Option 5, and we consider it is in the interests of all stakeholders to have Option 5 implemented as robustly as possible.

4.2.7.2 Estimation process and methods

The options to be considered for estimating capitalised corporate overheads in the period 2006–2008 must have sufficient prospective accuracy that their use could potentially be preferred to relying only on a data sample from 2009.

We consider the two broad options for the estimation process are:

- Allowing DNSPs to develop and apply their own estimation methods, with a high-level review by the AER. DNSPs should, where available, extract the costs of relevant activity centres from their management accounts for the relevant period. This would be more of a bottom-up method of estimation. If such information is unavailable, we would consider methods that involve a higher degree of top-down estimation. DNSPs should document and justify any estimation method they use.

- The AER formulating an estimation method in consultation with the DNSPs, and for the DNSPs to implement that method. This may involve a top-down extrapolation based on corporate overheads in the CA RINs, a variant of which was proposed by AusNet Services (discussed below).

Our preferred approach is the first option. It allows the DNSPs some flexibility to develop their own estimation methods, in accordance with their particular circumstances, drawing from their specialised knowledge of the scope of the overhead activities in their organisations, data availability and distinct cost drivers. This may yield more accurate and objective estimation methods. We do not anticipate this will lead to undue inconsistency. As discussed in Section 4.2.3, we note the broad consensus in submissions that the core functions included within corporate overheads are reasonably consistent across DNSPs, including Finance, Information Technology, Human Relations, Regulation, Legal, Work Health and Safety and Property Services.[45]

It should also be noted that, under any estimation method, the final output required is an estimate of capitalised corporate overheads, rather than totex corporate overheads, as this amount is to be added to 2006–2008 opex (that already incorporates expensed corporate overhead) under the Economic Benchmarking Regulatory Information Notice (EB RINs). Methods that focus on totex corporate overheads therefore require a further step of estimating the capitalisation rate to be applied to totex corporate overheads to yield capitalised corporate overheads (unless DNSPs know the amount of expensed overheads currently included in EB RIN opex for 2006 to 2008).

As discussed in Appendix A.3.7, the only suggested approach put forward in submissions was by AusNet Services, noting this did not necessarily represent its final view. It proposed a high-level estimation procedure that involved a high degree of estimation, based on historical corporate overheads from 2009 onwards as a basis to extrapolate for 2006–08, using a fixed percentage of corporate overheads to total opex (either based on 2009 or on the average from 2009 to 2011).

We have considered AusNet Services' proposed approach. We consider it has some benefits in that it is transparent and would, if applied to all DNSPs, lead to consistency of approach across DNSPs. However, we see some potential limitations in it in terms of accuracy and objectivity. In particular, there is a risk that the 2009 percentage of corporate overheads to total opex, or the average from 2009 to 2011, may not be sufficiently representative of the period 2006–2008. As mentioned above, where data is available we consider there may be more accurate methods using more detailed data for corporate activities from relevant cost codes such as labour costs in corporate cost centres, rent, consultancies, legal fees, insurance etc. In this regard it may also be less accurate for some DNSPs than for others, although variations in the percentage across DNSPs may reflect to a larger extent differences in their capitalisation policy in relation to corporate overheads. We also note that AusNet Services' proposed approach estimates totex corporate overheads rather than capitalised corporate overheads, which means a capitalisation rate is required.

We intend to obtain the views of all the DNSPs in regard to methods of extracting or estimating data for corporate overheads for the period 2006–2008 to consider the most

[45] SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 1.

practical approach or approaches. We consider that where sufficiently high quality data is not available from the DNSPs, we will need to adopt a top-down estimation approach.

We have commenced a process with the DNSPs on the detailed implementation of this approach in the context of the 2023 annual benchmarking report.

4.2.8 RIN data issues

We have investigated the issue raised in some submissions in relation to SA Power Networks' reporting of a negative amount for corporate overheads in several years (see Appendix A.3.8), and consider this does not raise concerns. Based on our understanding of its reconciliation statement, we observe that SA Power Networks makes provisions for superannuation expenses, and the difference between the expensed amount and the actual amount of superannuation paid is reported as a negative in the capitalised corporate overheads (indicating overprovision for superannuation). As such, the sum of the relevant superannuation component of the expensed corporate overheads account and the superannuation adjustment reported in the capitalised corporate overhead account should equate to the true amount of superannuation actually paid out to employees. Thus, the negative reported amounts are a 'true-up' to reflect actual costs. It is possible some other DNSPs do likewise. However, given SA Power Networks expenses all of its corporate overheads, these negative amounts are salient in its reporting of capitalised corporate overheads.

We have also investigated the other RIN data issues that were raised in relation to capitalised corporate overheads data, which correctly identified some minor errors. These have been corrected in the relevant dataset.

4.2.9 Raising the 0.75 comparator

As raised in the draft guidance note in Section 3.5[46], any narrowing of the gap in the opex efficiency scores between the benchmark comparators and other DNSPs under Option 5 raises the question of whether the benchmark comparison point of 0.75 remains appropriate and whether it should be increased. Table 1 shows preliminary estimates of the anticipated effect of adopting Option 5 on efficiency scores, using only the short sample benchmarking period 2012 to 2021. We observe in Table 1 a general increase in model-average efficiency score under Option 5 relative to our current approach (pre-adjustment for capitalisation differences), with the average score rising 3 percentage points, and the number of DNSPs above 0.75 increasing from five to six.

[46] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, p. 58.

Table 1 Results of sensitivity modelling of 2022 annual benchmarking report scores with option 5, 2012–2021 (short period)[47] – model-average efficiency scores

DNSP	2022 ABR scores	Option 5
EVO	0.47	0.47
AGD	0.49	0.57
CIT	0.86	0.75
END	0.63	0.66
ENX	0.61	0.56
ERG	0.63	0.58
ESS	0.68	0.69
JEN	0.65	0.66
PCR	0.99	0.99
SAP	0.77	0.93
AND	0.64	0.75
TND	0.78	0.83
UED	0.80	0.94
Average	**0.69**	**0.72**

This underscores the priority, as stated in the 2022 annual benchmarking report, and in our recent review of incentive schemes for regulated networks, to assess the appropriateness of the current benchmark comparison point of 0.75 in light of improvements we make to our benchmarking approaches.[48] This will be a part of our future benchmarking development work.

[47] We present the results for the short benchmarking period as we are yet to settle on how to carry out econometric modelling of Option 5 over the 2006–2021 (long benchmarking) period given the actual data we have on overheads does not extend further back than 2009 (as discussed in Section 4.2.7). These results also exclude models which do not satisfy monotonicity, as explained in our annual benchmarking reports. See AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2022, p. 32.

[48] AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2022, p. 63; AER, *Review of incentive schemes for regulated networks – Final Decision*, April 2023, pp. 10–12.

Appendix A – summary of submissions

This appendix summarises the submission we received in response to the draft guidance note and is framed in terms of the key issues in the final guidance note i.e.:

- Do differences in capitalisation practices (the application of capitalisation accounting policy and opex/capital trade-offs) impact our benchmarking results
- How we should address these differences in capitalisation practices
- Option 5 implementation matters.

A.1 Do differences in capitalisation practices impact our benchmarking results?

There was widespread agreement among stakeholders that there are material differences in capitalisation practices and that these would be having a material impact on the benchmarking results.[49] Energy Queensland considered that capitalisation practices differ materially amongst DNSPs and this materially impacts on the AER's benchmarking results. It stated that it strongly agreed that benchmarking must be undertaken using comparable and consistent data in order to properly reflect differences in how DNSPs are efficiently delivering network services.[50] In the context of its support for Option 2 (discussed below), Energy Queensland also noted the opex/capital ratios are a reasonable way of measuring the capitalisation practices of DNSPs (as the AER suggested in the Consultation Paper).[51]

SA Power Networks stated that capitalisation policies differ substantially between DNSPs, citing the example of corporate overheads, where SA Power Networks allocates 100% of corporate overheads to opex while other DNSPs allocate corporate overheads between opex and capex.[52]

Most submissions did not directly comment on the measures, such as opex/capital ratios, we have used to demonstrate material differences and impact. However, Endeavour Energy noted that as a high-level gauge of capitalisation practices, the opex/capital ratios are useful

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[49] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1; AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 1; CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 1; Energy Queensland, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 1; Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1; Evoenergy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1; Jemena, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1; SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 1; TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 1.

[50] Energy Queensland, Submission on the impact of capitalisation on the AER's benchmarking, 9 February 2023, p. 1.

[51] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 2.

[52] SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 1.

for evaluating the materiality of the capitalisation differences between DNSPs.[53] Most submissions that did make comments on the opex/capital ratios focused on their use in the OEF approach (Option 1) to addressing capitalisation differences, as covered in Section 3.2.2.

A.2 How we should address these differences in capitalisation practices?

Reflecting the consensus view that capitalisation differences between DNSPs are material, and having a material impact on benchmarking, all DNSPs agreed that doing something – taking some account of capitalisation practice differences in our benchmarking approach – was better than doing nothing. In terms of preferred approach, there was widespread stakeholder support for the preferred option in the draft guidance note, Option 5. Five of nine DNSP submissions stated this as their first preference[54] and two other DNSP submissions (AusNet and Ausgrid) noted it as their second preference.[55] One submission (Energy Queensland) acknowledged the AER's preference for Option 5 and provided comment on its associated implementation matters.[56] However, it put forward Option 2 as its first preference in the short term[57], whereas two other DNSPs (Endeavour Energy[58] and Ausgrid[59]) moderated their previous support for Option 2.

Jemena recommended the AER engage and consult on the Option 5 implementation matters to ensure the change in position provides a material improvement to the previous AER-preferred Option 1 approach of an OEF based on opex/capital ratios.[60] Reflecting their submissions to the Consultation Paper, many submissions made further critical comments in relation to Option 1. Evoenergy also acknowledged the shortcomings of Option 1, with it no

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[53] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1.

[54] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 1; Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1; Evoenergy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2; TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 1; SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 1.

[55] AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 1; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1.

[56] Energy Queensland, *Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 1; Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, pp. 6–7.

[57] Energy Queensland, *Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 1; Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, pp. 1–5.

[58] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1.

[59] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1.

[60] Jemena, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 1–2.

longer being its preferred option (preferring Option 5)[61], with Energy Queensland also dropping its previous support for an OEF adjustment in favour of Option 2.[62] There were limited comments on the other options presented in the draft guidance note.

A.2.1 Option 5: Benchmarking on the basis of a fixed proportion of overheads

The main reasons given in submissions in support of Option 5 reflected those we had put forward in Sections 3.2 and 3.7 of our draft guidance note, including that this option:

- Targets one of/the most material difference in capitalisation[63]
- Differences are known, and approach is transparent and implementable in the short term[64]
- Corporate overheads activities are reasonably consistently defined and assigned across DNSPs.[65]

Ausgrid agreed that differences in capitalisation of corporate overheads were a major source of capitalisation differences. It considered that normalising opex by allocating 100% of corporate overheads to the opex series for benchmarking will not only address a significant issue with the use of frozen CAMs, it also brings into line the opex used in benchmarking with actual reported opex for many businesses.[66]

Endeavour Energy agreed the main appeal of standardising the treatment of corporate overheads relates firstly to the high level of confidence that the primary driver of capitalisation difference is being addressed. Further, that it also limits inadvertently accounting for factors that are either not related to capitalisation practices or are already accounted for elsewhere in the AER's benchmarking. It submitted that these features are largely absent among the other considered options.

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[61] Evoenergy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2.

[62] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note,* October 2022, p. 47.

[63] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, pp. 2–3; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2; Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2; SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 1; TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 1; Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 10–11.

[64] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 1; AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 2; Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2; Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 10–11.

[65] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3; AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 2; SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 1; Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 7.

[66] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2.

In support of Option 5, SA Power Networks submitted that capitalisation differences should be accounted for directly in the AER's benchmarking modelling where possible, reducing non-efficiency related variability in reported benchmarking outcomes.[67] TasNetworks submitted that, while this method may be imperfect, it will adequately account for material differences in capitalisation practices.[68]

While Option 5 was the most preferred option, many submissions acknowledged that it, along with all the other available options, was imperfect.[69] The main reasons given were:

- That the resulting benchmarking opex will not accurately reflect all DNSPs' actual cost allocation practices[70]
- That approach accounts for the main, but not all potential sources of capitalisation differences between DNSPs, e.g.:
  - Network overheads allocation.[71] Further, that this could give rise to the incentive for DNSPs to reallocate corporate overheads to network overheads, while noting this incentive could be tempered through the limited discretion DNSPs generally have over the treatment of network overheads relative to corporate overheads.[72]
  - Opex/capital trade-offs.[73] Evoenergy did not agree with the AER's reasoning in the draft guidance note that the econometric benchmarking models account indirectly for the differences in DNSPs' opex/capital trade-offs because the output variables are highly correlated with capital inputs. In particular, it considered that this high degree of correlation is due to common scale effects.[74] Jemena also did not consider that opex/capital differences would be correctly accounted for in the AER's proposed approach, and that DNSPs should be provided the opportunity to propose an additional OEF to account for material differences.[75]

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[67] SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 1.

[68] TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 1.

[69] TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 1; Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2; Evoenergy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 6; Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 10–11.

[70] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2.

[71] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2.

[72] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2.

[73] Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 10–11; [73] Evoenergy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 4–6.

[74] Evoenergy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 5.

[75] Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 11.

Endeavour Energy noted a perceived weakness of this option is that the resulting benchmarking opex will not accurately reflect all DNSPs' actual cost allocation practices. However, it noted this shortcoming is shared by other options to varying degrees and is an unavoidable consequence of any data normalising measure. In relation to Option 5, it considered issues from normalising opex data (allocating 100% of capitalised corporate overheads for all DNSPs for benchmarking) are outweighed by the benefit from improved comparability.[76]

Endeavour Energy also submitted the approach accounts for the main, but not all potential sources of capitalisation differences between DNSPs, such as differences in network overheads allocation. It further considered that this could give rise to the incentive for DNSPs to reallocate corporate overheads to network overheads. However, it noted this incentive could be tempered through the limited discretion DNSPs generally have over the treatment of network overheads relative to corporate overheads.[77]

Evoenergy submitted that the AER should not overstate the extent to which Option 5 (or any other option) can fully account for capitalisation differences, citing opex/capital trade-offs as a key example of capitalisation practices that are not fully captured. It did not agree with the AER's reasoning in the draft guidance note that the econometric benchmarking models account indirectly for the differences in DNSPs' opex/capital trade-offs because the output variables are highly correlated with capital inputs. In particular, it considered that this high degree of correlation is due to common scale effects (an argument also made by Energy Queensland in the context of its support for Option 2, as discussed below). Evoenergy argued that the logical extension of excluding capital inputs on the basis of its correlation with output variables would be to similarly exclude, say, customer numbers from the output specification, due to its correlation with other output variables. By analogy, it argued, it does not follow from the high correlation of capital inputs with the output variables that the AER's benchmarking models (without a capital input variable) account for opex/capital trade-offs. [78]

Jemena gave the examples of changed accounting treatment of Software as a Service (SaaS) and asset vs cloud based ICT solutions. It did not consider that these differences would be correctly accounted for in the AER's proposed approach (Option 5). It considered that DNSPs should be provided the opportunity to propose an additional OEF to account for material differences. It argued that if these differences are not accounted for then some firms will be inappropriately penalised for, and incentivised not to undertake, efficient opex substitution for capex.[79]

Evoenergy considered the AER should acknowledge the limitations of the various approaches, including the inability of Option 5 to fully account for opex/capital trade-offs, and that the weight placed on benchmarking results in the context of application in resets should

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[76] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2.

[77] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2.

[78] Evoenergy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 5.

[79] Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 11.

reflect all the limitations of that analysis.[80] This argument is also reflected in its recently submitted opex proposal in relation to the efficiency of base opex.[81]

In light of the imperfections of any of the options, some stakeholders submitted that the current review, and final guidance, should not imply that this issue is settled once and for all, and that rather the issue is reviewed periodically to assess performance. Evoenergy submitted that the AER should proceed with Option 5 while continuing to monitor a range of suggested approaches, including a future progress review of (including consultation on) Option 5 in a few years.[82] Ausgrid supported Option 5 as its "next preferred option", noting in relation to Option 2 (as discussed further below) that the practical challenges of that option did not make it feasible, "at least at this time."[83]

Jemena raised several reservations with the implementation of Option 5. These are discussed in Section 4.1 (Option 5 implementation matters). Jemena's overall stance was that addressing these implementation matters is critical to ensuring that it provides a material improvement to the previous approach under Option 1 of using opex to capital ratios.[84]

A.2.2 Option 1: Applying a post modelling OEF based adjustment for capitalisation to the efficiency scores under the frozen 2014 CAMs using opex/capital ratios

To the extent submissions commented on this option, it was largely to re-express or cross-reference their previous submissions. These are discussed in detail in Sections 2.2 and 3.3 the draft guidance note.[85]

Endeavour Energy submitted that, while these ratios are useful as a high-level gauge of capitalisation practices, for other more deterministic purposes, they should be interpreted with a high degree of caution. It considered that the ratios are not sufficiently robust and fit-for-purpose to inform an OEF adjustment as they are sensitive to a variety of factors (e.g. opex/capex trade-offs, asset replacement cycles, etc) unrelated to capitalisation and therefore capture the impact of factors irrelevant to the assessment of opex efficiency. It noted that these factors have contributed to the AER's loss of confidence in the appropriateness of this option. It also noted the AER has also acknowledged that the econometric models already implicitly capture opex/capital trade-offs to some extent through the existing output variables, which are highly correlated with a capital input variable. It

[80] Evoenergy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 6.

[81] Evoenergy, *Regulatory Proposal – Appendix 2.1 – Base year efficiency*, January 2023.

[82] Evoenergy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 6.

[83] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1.

[84] Jemena, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 1–2.

[85] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note*, October 2022, pp. 14–24, 41–48.

considered this observation means it fails the non-duplication criterion required of all prospective OEF candidates.[86]

Ausgrid similarly re-iterated its concerns with the appropriateness of the ratios, and the variability and wide range of potential OEFs, given different time periods and ratio weightings.[87]

In its submission to the Consultation paper, Evoenergy had supported Option 1 as the most reasonable and pragmatic approach. However, Evoenergy had then noted that this should not prevent the AER from undertaking further work in the future to determine whether all OEF adjustments could be implemented in an ex-ante fashion.[88] In its submission to the draft guidance note, Evoenergy acknowledged the shortcomings of Option 1, with it no longer being its preferred option (preferring Option 5).[89]

Energy Queensland had also previously expressed support for the use of opex/capital ratios within an ex-post OEF adjustment to the efficiency scores.[90] In its submission to the draft guidance note, Energy Queensland no longer supported an ex-post OEF. However, it maintained its support for the utility of the opex/capital ratios, both as measures of capitalisation differences (as discussed above) and to explore as explanatory variables under Option 2, as discussed below.[91]

A.2.3 Submissions on Option 2: Adding an explanatory variable to the econometric benchmarking models that directly captures capitalisation practices

In their previous submissions in response to the Consultation paper, Essential Energy, Ausgrid and CitiPower / Powercor / United Energy had put forward this approach as one of/ the preferred option.[92]

In submissions in response to the draft guidance note, Ausgrid[93] and Endeavour Energy[94] both noted that incorporating an explanatory variable to the econometric opex cost function modelling that directly captures capitalisation differences is conceptually preferable.

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[86] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 1–2.

[87] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1.

[88] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note*, October 2022, p. 42.

[89] Evoenergy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2.

[90] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note*, October 2022, p. 47.

[91] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 1–3.

[92] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note*, October 2022, pp. 48–50.

[93] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1.

[94] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1.

However, both moderated their previous support for Option 2, acknowledging the practical challenges to this approach as raised by the AER in the draft guidance note, particularly in relation to data availability and consistency.

Ausgrid stated that it continued to consider that incorporating an explanatory variable that directly captures capitalisation differences is conceptually the better approach to directly adjusting for capitalisation differences. It stated it now, however, appreciated, based on the AER's further investigations of this option, that data availability and data comparability particularly for non-Australian networks, does not make this option feasible, at least at this time.[95]

CitiPower / Powercor / United Energy maintained its view that the econometric approach is preferable to an ex-post OEF adjustment; however, it considered it remains less preferable than Option 5.[96]

In relation to Option 2, Endeavour Energy noted its general preference in its submission to the Consultation paper was for the impact of capitalisation differences to be accounted for within the econometric benchmarking models (Option 2) thereby removing the need for data normalisation or post-modelling adjustments. It accepted, however, that the significant data challenges which the AER has limited ability to resolve, make the introduction of a capitalisation explanatory variable complex and problematic. Specifically, it was satisfied that the AER had demonstrated there are endogeneity issues with using opex/capital ratios within the model specification and inconsistencies in the international dataset which lack the reliability and robustness needed to make Option 2 workable.[97]

Energy Queensland's first preference was Option 2, recommending that the AER fully explore the viability of this option. It noted a key advantage of this option is it directly incorporates differences in capitalisation policies into the benchmarking models, rather than accounting for differences as OEF adjustments, meaning the results will produce a more accurate reflection of the DNSPs' true efficiency.[98] In relation to the concerns identified by the AER in the draft guidance note, Energy Queensland did not consider that these concerns are so severe that the AER should dismiss the use of Option 2. In particular, it did not share the AER's concerns that:

- The inclusion of opex/capital ratios in the econometric benchmarking models are not the best way of accounting for the trade-off between opex and capital inputs, and that this could be modelled more directly by including a capital quantity input measure[99]

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[95] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1.

[96] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, pp. 4–5.

[97] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 1.

[98] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 1.

[99] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, pp. 1–3.

- The inclusion of opex/capital ratios as explanatory variables within the econometric benchmarking models would create an endogeneity problem[100]
- There is insufficient consistency in cross-jurisdictional data to apply Option 2 reliably.[101]

Rather, it argued that:

- The opex/capital ratios are a reasonable way of measuring overall capitalisation-practices, whereas capital input quantity is a flawed approach due to its correlation with network scale[102]
- Once averaged, opex/capital ratios do not create significant endogeneity issues[103]
- The lack of consistency of international data is not as problematic as characterised by the AER; in each jurisdiction, the respective regulator is seeking to derive its best estimate of regulatory depreciation and the return on capital. In addition, the consistency concerns relate to the opex/total cost ratio. The AER can hence use the ratio about which it does not have consistency concerns, namely the opex/totex ratio.[104] It also submitted that it seems inconsistent for the AER to adopt Option 5 as its preferred option notwithstanding the lack of data required to apply that approach to the overseas DNSPs, but to reject Option 2 (which can be applied to all of the DNSPs used in the benchmarking analysis) on the grounds that some of the data may be inconsistent across jurisdictions.[105]

A.2.4 Other options raised in the draft guidance note

There were limited comments made in relation to the other options presented in Sections 3.5, 3.6, 3.8 and 3.9 of the draft guidance note, namely Options 3, 4, 6 and 7.[106]

In relation to Option 4, Endeavour Energy noted that, given the limitations of opex/capital ratios, the use of these ratios to derive a common opex/capital ratio that would apply to all DNSPs as a pre-modelling benchmarking opex adjustment limits the appeal of this approach.[107]

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[100] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, pp. 3–4.

[101] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, pp. 4–5.

[102] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, pp. 1–3.

[103] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, pp. 3–4.

[104] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, pp. 4–5.

[105] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, pp. 4–5.

[106] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note*, October 2022, pp. 30–32.

[107] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 1–2.

In relation to Option 7, AusNet Services maintained its previous submission as its most preferred approach (with Option 5 as its second-preferred).[108] It argued that benchmarking should be based on actual opex incurred consistent with the CAM of the day (the first element of its approach), where exclusions are strictly limited to areas that are outside of networks' control, not-gameable, and do not reflect underlying efficiency e.g., Guaranteed Service Level payments (the second element).[109]

A.3 Option 5 implementation matters

In the main, submissions to the draft guidance note were broadly aligned that:

- The benchmarking series should be based on CAMs that are:
  - Frozen, then re-frozen going forward for a number of years, rather than on CAM-of-the-day[110]
  - Current (and backcast), rather than on 2014 CAMs (as is currently the case) [111]
- There should be allocation of only corporate, not additionally network, overheads to opex for benchmarking purposes[112]

[108] AER, *How the AER will assess the impact of capitalisation differences on our benchmarking – Draft guidance note*, October 2022, pp. 65–67.

[109] AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 1.

[110] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 5; Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3; SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 2; TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 1; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3.

[111] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 5; Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3; SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 2; TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 1; Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 6; AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 2.

[112] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, pp. 1, 3–4; Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 2–3; SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 1; TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 1; Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 7; AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 2; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 3–4; Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 12.

- The percentage of capitalised corporate overheads to be allocated to opex for benchmarking purposes should be 100%[113]
- In the context of efficiency assessments in revenue determinations:
  - Capitalised corporate overheads should be included in base year opex, when comparing to modelled efficient opex[114]
  - Option 5 can be integrated/harmonised with our current approach to assessing proposed capitalised overheads forecasts under the assessment of capex.[115]

A.3.1 Frozen CAMs versus CAM-of-the-day

Most DNSPs advocated using a frozen set of CAMs to generate the opex series for benchmarking rather than opex as reported under the CAM in operation in each year. The main reasons given were:

- To prevent DNSPs effecting apparent opex benchmarking improvements by reallocating costs from opex to capex which in reality does not represent an efficiency gain.[116]
- To prevent breaks in the opex series that would otherwise occur as a result of a CAM change, making it difficult to determine whether efficiency or accounting change is driving a DNSP's benchmarking performance.[117]
- To limit the incentive for other sources of accounting policy differences to emerge, thus minimising the opportunity to benefit from strategic CAM updates and maximising like-with-like comparability over time.[118]

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[113] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, pp. 1, 4; Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2; SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 1; TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 1; Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 7; AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 2; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 4.

[114] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 7; TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 2; AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 3; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 4.

[115] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 7; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 4.

[116] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3; CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 5; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3.

[117] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3.

[118] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3; CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 5.

While supporting a frozen CAM approach, CitiPower / Powercor / United Energy noted that the ability to re-allocate expenditure is limited irrespective of a frozen CAM because there are accounting and audit standards constraints.[119]

AusNet Services stated a preference for a CAM-of-the-day approach. It considered it was superior compared to adopting a frozen CAM (2014 or 2022) because:

- benchmarking based on a frozen CAM will not be reflective of costs borne by customers, even if the 2022 CAM is adopted since CAMs have and will continue to evolve over time
- any potential changes by a DNSP to capitalisation policies that increase its near-term cash flow (via increased allocation of expenditure to opex) will need to take into account the impact on its benchmarking efficiency scores.[120]

A.3.2 Backcast current CAMs versus 2014 CAMs

For the frozen set of CAMs, most DNSPs advocated using current CAMs backcast rather than the 2014 CAMs. The main reasons given were:

- DNSPs have been benchmarked on opex derived from increasingly outdated accounting approaches that are no longer representative of their current corporate structures and cost allocation practices[121]
- Continuing to use the 2014 CAMs would mean a growing divergence between the CAMs used for setting opex allowances and the CAMs used to assess the efficiency of opex via the benchmarking, and the related point that this results in poor transparency, leading to potential for misleading impression that actual opex is being benchmarked rather than opex based on 2014 CAMs[122]
- Updating the frozen CAM from 2014 to 2022 would reduce the administrative burden for networks to prepare annual opex backcasts and improve transparency of data for other networks and stakeholders[123]
- Continuing to use the 2014 CAMs may create the incentive to revise CAMs to allocate more expenditure to opex, as this opex will not be captured under benchmarking.[124]

SA Power Networks noted that given most DNSPs will need to update their benchmarking data to reflect the proposed corporate overhead allocation approach under Option 5, this provides an ideal opportunity to transition to the current CAMs (frozen) for benchmarking

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[119] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 5.

[120] AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 2.

[121] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3.

[122] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3; SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 2.

[123] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 5.

[124] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3.

purposes. In contrast, Ausgrid supported retaining the 2014 CAM approach. It submitted that since the Option 5 approach approximates current practices by some businesses to expense their corporate overheads, it considers that refreezing CAMs to the current CAM will not be necessary.[125] Jemena and its consultant CEG submitted that, in principle, the choice between 2014 or current CAMs should not be important to the extent that the primary difference between CAMs relates to the capitalisation policy applied to corporate overheads. They considered that at a high level, what is important is that there is consistent treatment of costs.[126]

While supporting the move to the current CAMs for benchmarking purposes, some DNSPs also cautioned that moving to the current CAMs would eventually face the same issues as under the 2014 CAMs, as DNSPs' CAMs continued to evolve. They suggested that the AER could consider a periodic (e.g. 5-yearly) review of the CAM used for benchmarking purposes.[127]

In this light, Endeavour Energy noted that eventually, re-freezing the current CAMs may also be vulnerable to the same weaknesses as benchmarking under the 2014 CAMs, as DNSPs' CAMs continue to change over time. It considered it may therefore be appropriate for the AER to revisit this issue to determine whether a refreeze of the benchmarking opex series is required, or alternatively, the AER could introduce an arrangement that would allow it to automatically apply a CAM refreeze at a pre-determined but infrequent time interval that is triggered irrespective of the number and effect of CAM changes made during the intervening period.[128]

TasNetworks also noted that continuing the frozen CAM approach, albeit based on the CAMs applying in 2022, may lead to the same comparability issues and inconsistencies re-emerging in the future. To alleviate this, TasNetworks proposed a five-yearly review to ensure that the CAMs used for benchmarking are reflective of DNSPs' contemporary practices.[129]

A.3.3 Inclusion of corporate overheads versus total (corporate plus network) overheads in opex for benchmarking purposes

Most DNSPs advocated inclusion of only corporate overheads in benchmarking opex rather than additionally network overheads. The main reasons given were:

- **Nature of corporate overheads – recurrent**. Broadly, corporate overheads have recurrent and stable opex-like characteristics which supports their inclusion within the benchmarking opex series. Total corporate overheads are generally not directly related

[125] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3.

[126] Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 12.

[127] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3; TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 1.

[128] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3.

[129] TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 1.

to the management and operation of field resources and have a low correlation to the underlying network and variability in capital investment programs. Rather, they are relatively fixed and reflect the statutory obligations and service levels that the DNSP must operate within. [130]

- **Nature of network overheads – lumpier**. Network overheads, by contrast, vary significantly as a result of operating model choices and are also tied to the capex program, which is lumpier. The capitalisation of network overheads is thus driven by factors including differences in the investment and asset replacement cycles of DNSPs and forecast growth in their networks. In contrast, corporate overheads, are generally less elastic to changes in a DNSP's capital works program.[131] Unlike network overheads, the nature of corporate overhead costs means that they are less likely to be impacted by operating model decisions, are clearly defined by the AER and there are limited reporting alternatives available. For example, insourcing versus outsourcing decisions in relation to a finance team will result in the costs being reported as corporate overheads irrespective of the operating model choice.[132]
- **Blurring between network overheads and direct costs**. In comparison to corporate overheads, the build-up of network overheads tends to vary more significantly across DNSPs, with some DNSPs allocating a greater proportion of network costs as direct costs compared to other DNSPs. For example, in 2020/21 the proportion of direct costs that DNSPs attributed were between 61% and 80%, with the remaining costs allocated as corporate and network overheads.[133] There is no visibility and insight from reported data as to what costs DNSPs may include as network overheads versus direct costs. For example, one DNSP may charge network fleet costs directly against operating and capital projects while another may treat these costs as a network overhead cost pool that is allocated out to projects. Differences in outsourcing versus insourcing of network support activities will also affect whether costs are treated as direct costs or network overheads. In contrast, corporate support activities are generally of similar nature and treated as corporate overheads, whether delivered internally or outsourced.[134]
- **Impact of potential blurring between network overheads and direct costs**. The potential blurring between network overheads and direct costs lowers the effectiveness of allocating a proportion of network overheads to the opex series. This adjustment would account for network overheads but not for direct costs. If there are differences in how networks allocate direct costs and network overheads, the accuracy of the

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[130] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2; Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 7, SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 1.

[131] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 3–4.

[132] AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 2.

[133] SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 1; Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 7

[134] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3; CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 4.

adjustment would be reduced because networks would have a different proportion of direct network costs and network overheads allocated to overheads. Under this approach, networks would be incentivised to allocate more costs to direct costs than to network overheads, which would then impact service delivery and deriving efficiencies.[135]

- **Clear delineation of activities between corporate and network overheads**. The delineation of activities between corporate and network overheads is clear and consistent between DNSPs and over time. Corporate overheads tend to be consistent over time and are more comparable across DNSPs, as there are clear delineations between what is classified as a corporate overhead and what is classified as a network overhead. This is reflected in the RIN definitions and application, where there is currently a clear definition of corporate overheads (inclusions/exclusions) and limited alternatives to reporting such costs anywhere in the Regulatory Information Notice other than within the 'Corporate Overheads' template. Corporate overheads are any costs incurred in the corporate business units (e.g. Finance, Information Technology, Human Relations, Regulation, Legal, Work Health and Safety and Property Services etc). Network overheads are any cost incurred in the operational business units (e.g. network planning, field services etc).[136] Auditing processes also further reduce the ability to reallocate costs between corporate and network overheads because doing so must be accompanied by sound reasoning to ensure audit sign off.[137]
- **Safeguards against gaming**. There could be a concern that network businesses would try to game the AER's approach (of including all corporate overheads in opex for benchmarking purposes) by assigning overheads to 'network' rather than 'corporate.' However, the regulatory framework has safeguards to protect against DNSPs from gaming capitalisation or cost allocation practices to achieve favourable benchmarking outcomes. For instance, the AER reviews and approves any changes to a network's CAM and has the ability to interrogate changes to capitalisation practices. The AER also has significant information gathering powers and oversight that would allow it to identify instances where cost shifting might be occurring. Specifically, the cost information collected through the RINs would equip the AER with the ability to monitor whether there are any such changes and seek to understand the basis for these, including whether they are motivated by benchmarking performance. Over time, where this information reveals that cost shifting is prevalent and there is evidence network overheads are contributing to the difference in capitalisation practices between DNSPs, the inclusion of network overheads in the opex benchmarking series may be justified.[138] However, for the

[135] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 3.

[136] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 3; EQ, p. 7; AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 2; Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 12.

[137] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 4.

[138] Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 3; AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 2; Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 12.

above reasons there is limited opportunity for this gaming to occur. Compliance with pre-existing AER definitions is sufficient to mitigate this risk.[139]

- Jemena and its consultant CEG also noted that treating capex as opex creates complexity in reconciling the capex and opex models. This complexity can be limited by limiting the capitalised overheads that are treated as opex in the opex models.[140]

Evoenergy did not agree with the draft guidance note or other stakeholders on this question. It submitted that networks overheads should be included with corporate overheads in the allocation to opex for benchmarking purposes. This was on the basis that there are many categories in network overheads that could be treated as opex or capex, e.g. procurement, fleet management, labour costs for engineers, control room costs. Evoenergy also submitted evidence that it considered showed that wide variation in how DNSPs expense or capitalise network overheads. This means the total amount of opex, and hence the benchmarking results, are sensitive to whether capitalised network overheads are included or excluded from benchmarking opex.[141]

A.3.4 The percentage of capitalised corporate overheads to be allocated to opex for benchmarking purposes

DNSPs were mostly aligned that the percentage of capitalised overheads to be allocated to opex for benchmarking purposes should be 100%.[142] The following reasons were given in support:

- It is a simple and transparent approach that better addresses the core issue of data consistency and comparability across DNSPs relative to a lower and more conservative allocation also achieves comparability across network businesses.[143]

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[139] AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 2; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 3–4.

[140] Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 12.

[141] Evoenergy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 3–4.

[142] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, pp. 1, 4; Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2; SA Power Networks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 18 January 2023, p. 1; TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 1; Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 7; AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 2; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 4.

[143] AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 2; Endeavour Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 2; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 4.

- It aligns with the practice of several DNSPs, and given this, is the most practical approach that should bring all DNSPs to an equal footing, for benchmarking purposes.[144]
- It retains the full incentives created through benchmarking to drive efficiencies in corporate overheads.[145]

Jemena and its consultant CEG did not consider 100% to necessarily be the right percentage, as there are fixed costs associated with corporate overheads functions. This means that even with the same capitalisation policies, small DNSPs are likely to have larger capitalised corporate overheads, expressed as a percentage of opex, than large DNSPs. Consequently, allocating 100% of all capitalised corporate overheads to opex can be expected to make smaller networks appear artificially inefficient relative to larger networks, all else equal.[146]

A.3.5 Capitalised corporate overheads should be included in base year opex, when comparing to modelled efficient opex

In the context of efficiency assessments in revenue determinations, some DNSPs agreed with the AER that capitalised corporate overheads should be added to base year opex, in the exercise of comparison to modelled efficient opex. They considered this ensures that the AER's assessment of efficiency is based on a like-for-like comparison with the opex base year,[147] and it was noted that audited data is already provided for all DNSPs.[148]

A.3.6 Harmonisation with our capex assessment approach

Most DNSP submissions on this point did not raise any issues of inconsistency between incorporating capitalised corporate overheads within the opex benchmarking approach and the AER's standard capitalised corporate overheads forecasting approach in regulatory resets.[149] Energy Queensland considered the current capex assessment approach of using trend analysis and movements in total capex specific to the DNSP appears appropriate.[150]

Jemena/CEG argued there is an 'internal inconsistency' between Option 5, and its implications for the calculation of base-year estimated efficient opex, and the AER's current method for forecasting capitalised corporate overheads in the context of setting capex forecasts in resets. The AER's current method for forecasting capitalised overheads assumes that 75 per cent of base-year capitalised overhead is fixed and the remaining 25

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[144] AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 2; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 4.

[145] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, pp. 1, 4.

[146] Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 11.

[147] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 4; AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 3.

[148] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 7.

[149] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 7; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 4.

[150] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 7.

per cent varies in proportion to direct capex costs (AER 2021, 7). CEG states that, by contrast, the AER's proposed reform to benchmarking would be treating capitalised corporate overheads in a single year (the DNSP's base year) as a critical input into its opex analysis, which is effectively variable costs.[151]

A.3.7 Estimated overheads data for 2006–08 versus a revised benchmarking start point of 2009

DNSPs generally submitted that actual data for 2006–08 is not (readily) available on their systems, although CitiPower / Powercor / United Energy submitted that they have actual data available for CitiPower and Powercor.[152]

DNSPs differed in their views on the issue of whether to use estimated overheads data for 2006–08 versus a revised benchmarking start point of 2009. Some DNSPs argued that we should retain the start point of 2006 and rely on a degree of estimation of overheads expenditure where actual data is unavailable.[153] Three DNSPs argued that we should revise the start of our benchmarking series to 2009.[154] Five other DNSPs did not comment on this issue.

In favour of the estimated data approach, some DNSPs submitted that such an approach allows the time series to extend back to 2006,[155] and the AER should accept estimated data.[156]

AusNet Services suggested two possible methods for the estimation procedure which involved multiplying total opex in the respective year by:

- the corporate overhead percentage as at 2009; or
- the average corporate overhead percent over the 2009 to 2011 period (3 years).

AusNet Services preferred the former approach as the corporate overhead percentages from 2006 to 2008 are likely to be closer to the 2009 percentage, compared to the average over 2009 to 2011. AusNet Services presented a chart that showed that there was a general downward or upward trend across all businesses, which suggests that an estimation

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[151] Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 4–10.

[152] AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 3; CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 5.

[153] AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 3; CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 5.

[154] TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 2; Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 4; Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 7.

[155] AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 3.

[156] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 5.

approach based on the average is less likely to be accurate using the 2009 to 2011 approach compared to using the 2009 proportion.[157]

In favour of starting the benchmarking series from 2009[158], some other DNSPs argued that:

- This would avoid data estimation and data reliability issues associated with estimating and providing overhead costs for historical years (2006–08).[159]
- Further, these estimation issues are greater when a material CAM change has since been introduced. Energy Queensland submitted there are significant issues with backcasting data historically which impacts on the accuracy and transparency of the information.[160]
- This would be simplest and most practical implementation approach without associated data estimation issues.[161]
- Use of estimated data would mean the AER is using inconsistent data (for 2006–08 overheads) across DNSPs.[162]
- The cost to provide actual or estimated corporate overhead information for 2006–2008 would outweigh any benefits extending the time series would provide to the assessment of recent efficiency. A benchmarking time series back to 2009 is sufficient for the purposes that benchmarking serves. While it may be argued that a longer time series provides a greater level of understanding of historical performance, it is not necessary to attempt to recover or estimate data for corporate overheads prior to 2009.[163]

A.3.8 RIN data issues

Jemena and CitiPower / Powercor / United Energy encouraged the AER to investigate the robustness of anomalies in the data to ensure accuracy and reliability. They pointed in particular to negative capitalised corporate overheads for a few years in SA Power Networks'

[157] AusNet Services, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 3.

[158] For the long period, while retaining 2012 as the start point of the short period.

[159] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 4.

[160] Energy Queensland, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 9 February 2023, p. 7.

[161] Ausgrid, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 4.

[162] Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, p. 12.

[163] TasNetworks, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 10 February 2023, p. 2.

CA RIN as a key example.[164] Jemena/CEG identified five other discrepancies in relation to capitalised corporate overheads data.[165]

A.3.9 Raising the 0.75 comparator

There were no submissions made in response to the draft guidance note on any narrowing of the gap in the opex efficiency scores between the benchmark comparators and other DNSPs and the question of whether the benchmark comparison point of 0.75 should be increased. However, in response to the Consultation Paper, AusNet Services submitted that this narrowing could represent an improvement in the accuracy of the benchmarking as networks have been operating under strong efficiency incentives for some time and have all been taking steps to improve their efficiency – intuitively performance should converge over time. It submitted that before the 0.75 benchmarking comparator point is increased as a result of this convergence, however, there are various other material aspects of benchmarking that need to be further developed through a holistic benchmarking review, to restore stakeholder confidence in the accuracy of the benchmarking results.[166]

[164] CitiPower / Powercor / United Energy, *Submission on the draft guidance note on the impact of capitalisation on the AER's benchmarking*, 8 February 2023, p. 5; Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 2, 13.

[165] Jemena, *Annex to Submission on the impact of capitalisation on the AER's benchmarking*, 14 February 2023, pp. 2, 13.

[166] AusNet Services, *Submission on the impact of capitalisation on the AER's benchmarking*, 18 February 2022, p. 13.

Glossary

Term	Description
Efficiency	A Distribution Network Service Provider's (DNSP) benchmarking results relative to other DNSPs reflect that network's relative efficiency, specifically their cost efficiency. DNSPs are cost efficient when they produce services at least possible cost given their operating environments and prevailing input prices.
Inputs	Inputs are the resources DNSPs use to provide services. The inputs our benchmarking models include are operating expenditure and physical measures of capital assets.
LSE	Least squares econometrics. LSE is an econometric modelling technique that uses 'line of best fit' statistical regression methods to estimate the relationship between inputs and outputs. Because they are statistical models, LSE operating cost function models with firm dummies allow for economies and diseconomies of scale and can distinguish between random variations in the data and systematic differences between DNSPs.
MPFP	Multilateral partial factor productivity. MPFP is a PIN technique that measures the relationship between total output and one input. It allows partial productivity levels as well as growth rates to be compared.
MTFP	Multilateral total factor productivity. MTFP is a PIN technique that measures the relationship between total output and total input. It allows total productivity levels as well as growth rates to be compared between businesses. In the 2021 annual benchmarking report, we also apply the method to time-series TFP analysis at the industry and State level and for individual DNSP to better capture large customer minutes off supply changes.
Network services opex	Operating expenditure (opex) for network services. It excludes expenditure associated with metering, customer connections, street lighting, ancillary services and solar feed-in tariff payments.
OEFs	Operating environment factors (OEFs) are factors beyond a DNSP's control that can affect its costs and benchmarking performance.
Outputs	Outputs are quantitative or qualitative measures that represent the services DNSPs provide.
PIN	Productivity index number. PIN techniques measure aggregated outputs relative to aggregated inputs using a mathematical index.
PPI	Partial performance indicator. PPIs are simple techniques that measure the relationship between one input and one output.
Ratcheted maximum demand	Ratcheted maximum demand is the highest value of maximum demand for each DNSP, observed in the time period up to the year in question. It recognises capacity that has been used to satisfy demand and gives the DNSP credit for this capacity in subsequent years, even though annual maximum demand may be lower in subsequent years.
SFA	Stochastic frontier analysis. SFA is an econometric modelling technique that uses advanced statistical methods to estimate the frontier relationship between inputs and outputs. SFA models allow for economies and diseconomies of scale and directly estimate efficiency for each DNSP relative to the estimated best practice frontier.
TFP	Total factor productivity is a PIN technique that measures the relationship between total output and total input over time. It allows total productivity changes over time or growth rates to be compared across networks. This method was used in previous annual benchmarking reports (up to 2019) to examine productivity change over time at the DNSP level and the industry level.