COMPETITION ECONOMISTS GROUP

# The AER's proposed approach benchmarking and capitalisation policy

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# 1 Introduction and overview

1. We have been engaged by the Jemena to provide a review of the AER's October 2022 draft guidance note on how it proposes to deal with differences in capitalisation policy in its benchmarking and, in particular, its operating expenditure (opex) benchmarking.

## 1.1 What is the problem being addressed?

2. The problem at hand is that the AER's opex benchmarking seeks to perform a partial analysis of efficiency focussed on the level of opex as opposed to the total value of expenditure (including past and present capital expenditure (capex)). However, it may be that some DNSPs opex in the period being studied differ from each other not based on differences in the efficiency of the DNSPs but based on differences in capitalisation policy.

3. In previous papers the AER defined differences in capitalisation policy broadly to capture both:

   - Differences in cost allocation methods. This captures a scenario where one DNSP allocates the same type of expenditure as opex and another allocates it as capex;
   - Differences in technical solutions to network design/operation. This captures a scenario where one DNSP pursues an opex heavy (capex light) strategy for designing and operating a network and another DNSP pursues a capex heavy (opex light) strategy. For example:
     - One DNSP might invest capex in installing computer servers for its IT systems and another might deal with the same needs by incurring opex in the form of contracting out to a third party cloud computing services; or
     - One DNSP might invest in early replacement of capital items (raising capex but lowering opex) while another might pursue a strategy of slower rates of replacement but higher opex on an on average older portfolio of capital equipment .

4. In the current draft guidance, the AER has proposed limiting the scope for adjustment to the former source of difference (differences in cost allocation methods). The AER's proposed method for doing so is to perform all opex benchmarking on the basis of opex (based on the DNSPs 2014 cost allocation method (CAM)) plus capitalised corporate overheads (CCO). The logic for doing so is that the primary difference between DNSPs capitalisation policy is whether they expense or capitalise corporate overheads. We discuss the relative merits of this approach in more detail in Section 2.

## 1.2 The AER's past and proposed remedies

5. The AER's past approach to the problem is to perform a case-by-case adjustment to benchmarking results to the extent that it is apparent that differences in capitalisation policies are affecting a DNSPs benchmarking results. In Jemena's 2021–26 revenue determination the AER performed an operating environment factor (OEF) adjustment for a difference in capitalisation.

6. The AER is currently consulting on how the issues of capitalisation differences should be systematically applied across all DNSPs. Early in the consultation the AER explored developing a modified version of the OEF applied to Jemena based on various measures of the degree of "capitalisation" at each DNSP.

7. However, in its October 2022 Draft Guidance note, the AER has proposed that instead of applying an OEF that it changes measure of "opex" used in its benchmarking model to be equal to opex plus capitalised corporate overheads (CCO). This is a significant change from its previous approach.

8. In arriving at its new preferred approach, the AER has determined that the differences in accounting treatment of expenditure (in the form of capitalisation of corporate overheads) is the primary source of capitalisation difference that needs to be addressed.

9. However, in arriving at its preferred position to combine opex and CCO there are a number of implementation issues that the AER has not fully considered. These include:

    a. Inconsistency between the treatment of CCO in AER's opex and capex models and associated complexity within those models if this inconsistency is to be resolved;

    b. The fact that there is a fixed cost nature to corporate overheads such that the AER's proposed approach can be expected to disadvantage smaller DNSPs and advantage larger DNSPs; and

    c. The reliability of CCO RIN data – with a number of negative values for SAPN.

10. In addition, the AER has raised the following issues but not proposed specific solutions to them.

    a. Adding CCO to opex only deals with differences in accounting cost *allocation* methods. It does not capture capitalisation differences that reflect network differences in actual capital intensity chosen by DNSPs (e.g., use of third party cloud (opex) versus direct ownership of IT assets). We recommend the AER keep the options open for DNSPs to apply for additional OEFs during Price Resets to adjust for these differences. Otherwise, some firms will be inappropriately penalised for, and incentivised not to undertake, efficient opex substitution for capex.

b. Australian CCO data not being available pre 2009. We propose that Australian data is used only from 2009 because that is the only way to have a consistent time series for Australian data within the regression. However, for foreign DNSPs there is no CCO data available in any years. Therefore, continuing to use the pre-2009 data is optimal because this will result in the most robust coefficient estimates (unless one believed for some reason that the true cost driver relationship for foreign firms happened to change at the same time that Australian CCO data became available).

## 1.3 Remaining report structure

- Section 2.1 addresses internal consistency in the treatment of CCO across opex and capex models (issue "9.a." above);
- Section 2.2 explains the continuing need to address the remaining differences in DNSPs actual technical trade-off between opex and capex (as opposed to cost allocation differences the AER is proposing to capture);
- Section 2.3 raises the issue of whether only CCO above a threshold value should be added to opex (issue "9.b." above);
- Section 2.4 deals with issues raised by the AER (choice of CAM, whether capitalised network overheads should also be included, and the lack of CCO data for foreign DNSPs and pre 2009 for Australian DNSPs); and
- Section 2.5 deals with data reliability issues (issue "9.c." above).

# 2 Analysis

## 2.1 Consistent application across AER models

11. The AER's draft guidance states that:[1]

> *In the context of resets, we generally adopt a standard approach to assessing DNSPs' proposed capitalised overheads forecasts.[58] This essentially involves an approach that includes trend analysis and adjustments for movements in total forecast capex, which is broadly similar to our opex assessment approach. As described in Section 3.2.1, under our preferred approach to addressing capitalisation differences, capitalised overheads would be incorporated into our total opex benchmarking techniques. This raises the question of whether and how to adapt our current assessment approach to capitalised overheads within resets.*
>
> *Our preliminary view is that incorporating capitalised overheads within our opex benchmarking approach could complement our standard capitalised overheads forecasting approach in resets. In particular, the benchmarking results could inform our efficiency assessment of historical capitalised corporate overheads within the assessment approach. We particularly seek stakeholder views on this issue.*

12. The AER's current approach to forecasting and setting compensation for operating costs and capital expenditure can be summarised as a nine step process as set out in Appendix A where we also set out the AER's proposed reform in a modified nine step process. However, broadly speaking the AER is proposing to:

    a. Assess DNSPs' cost efficiencies in the benchmarking models using opex plus CCO;

    b. This means that, in the context determining whether any efficiency decrement should be applied in an individual DNSP decision, the AER needs to compare:

        i. That DNSP's based year opex **plus base year CCO**; with

        ii. A trended forward value of "opex + CCO" from the benchmarking models.

    c. But to forecast and compensate for CCO separately within the capex models.

        - The AER states that it will consider "the question of whether and how to adapt our current assessment approach to capitalised overheads within resets" but does not provide any details on why this might be necessary or what shape any resulting reforms might take.

[1] AEWR Draft Guidance, p. 41

13. We think that there are the following internal consistency issues that the AER should consider addressing when it comes to forecasting capex and opex allowances consistently . In the benchmarking model, the AER is estimating an efficient level of opex plus CCO in the base year. In doing so, the AER is assuming that efficient levels of both opex and CCO are driven by the opex cost drivers (circuit length, ratcheted maximum demand and customer numbers).

14. However, in the capex models the AER is assuming that efficient CCO is 75% fixed and 25% variable. Moreover, the 25% variable is forecast to vary not with opex cost drivers but with direct costs.[2]

> *Capitalised overheads were forecast by taking capitalised overheads for the current period as a starting point and adjusting them up or down in proportion to forecast direct costs. The proportionality factor was 25 per cent, which was the same as our standard approach for adjusting capitalised overheads in our recent decisions.*

15. Consistent with the above quote, we understand that within the context of the capex models, the AER has been concerned that CCO is lumpy and, therefore, has sought not to forecast CCO based on CCO in the base year. But rather, as per the above quote has used "*capitalised overheads for the current period as a starting point*". By contrast the AER's proposed reform to benchmarking would be treating CCO in a single year (the DNSPs base year) as a critical input into its opex analysis.

16. From a regulatory certainty perspective, it is important for the AER to articulate whether its view of the nature of corporate overheads has changed and, if not, how the AER's proposed benchmarking reforms can be reconciled with the lumpy nature of CCO. Such clarity is important if ongoing *ad hoc* adjustments to AER models and approaches are to be avoided and all DNSPs can have a degree of certainty about the framework that will be applied in their future decisions.

17. In this context, we examined the variance of capitalised corporate overhead and compare this to the variance in opex. We report variation:

    - Within the time series for individual DNSPs; and
    - Between DNSPs.

18. Both sources of variation are material as illustrated in Table 2-1 below.

[2] AER, Explanatory Note, Standardised model for Standard Control Services capital expenditure, December 2021.

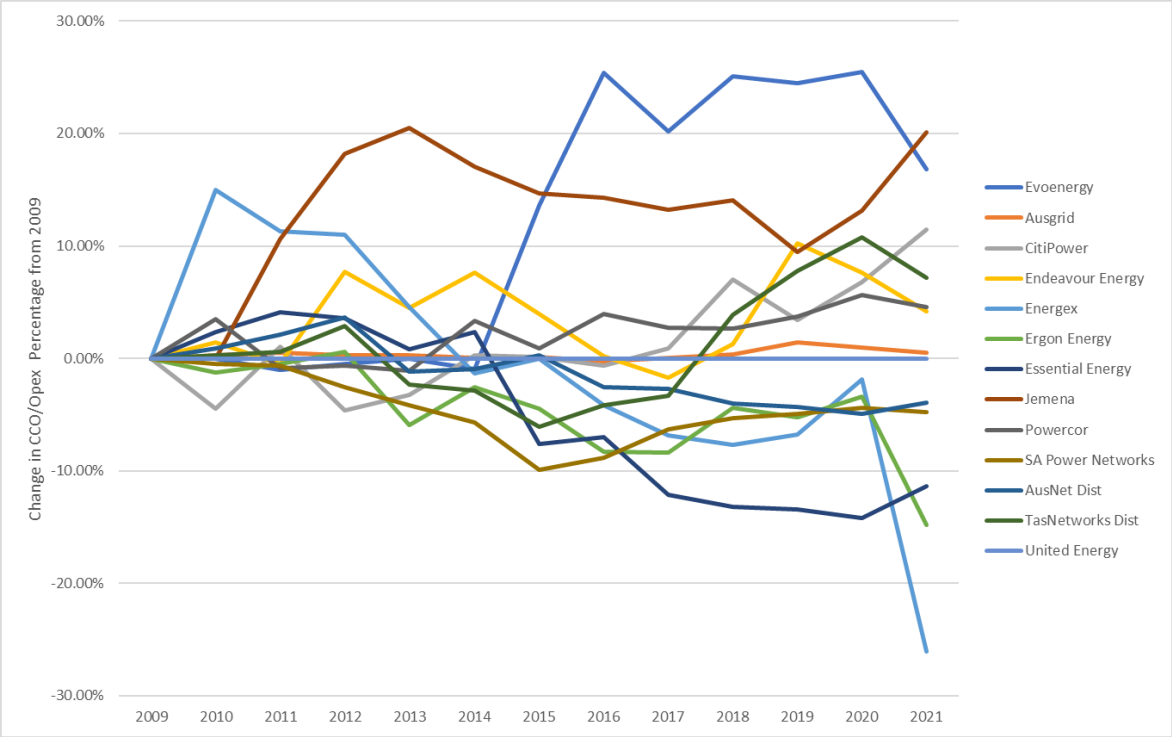
**Table 2-1: Variance in CCO vs variance in opex**

| | Mean | Std. Dev. | Min from average | Max from average |
|---|---|---|---|---|
| | | **CCO as a % of opex** | | |
| Overall | 0.148 | 0.138 | -0.221 | 0.356 |
| Between | | 0.131 | -0.167 | 0.203 |
| Within | | 0.057 | -0.250 | 0.160 |
| | Mean | Std. Dev. | Min from average | Max from average |
| | | **CCO/(average CCO)** | | |
| Overall | 1 | 1.399 | -1.570 | 4.515 |
| Between | | 1.361 | -1.145 | 2.773 |
| Within | | 0.485 | -2.741 | 1.743 |
| | | **Opex/(average opex)** | | |
| Overall | 1 | 0.674 | -0.813 | 2.039 |
| Between | | 0.681 | -0.765 | 1.403 |
| Within | | 0.154 | -0.781 | 0.637 |

*Source: AER, time period from 2009 to 2021*

19. Table 2-1 above illustrates that CCO is much less stable than opex. The volatility of CCO is at least twice that of opex. Figure 2-1 below shows the difference in CCO/Opex percentage calculated for each year compared to the percentage in 2009. It shows 8 out of the 13 DNSPs having a CCO/Opex percentage that during 2010 and 2021 differs from the 2009 level by more than 10 percentage points. Three of which has differed by more than 20 percentage points. The year on year variation of CCO/opex is very significant for the majority of DNSPs.

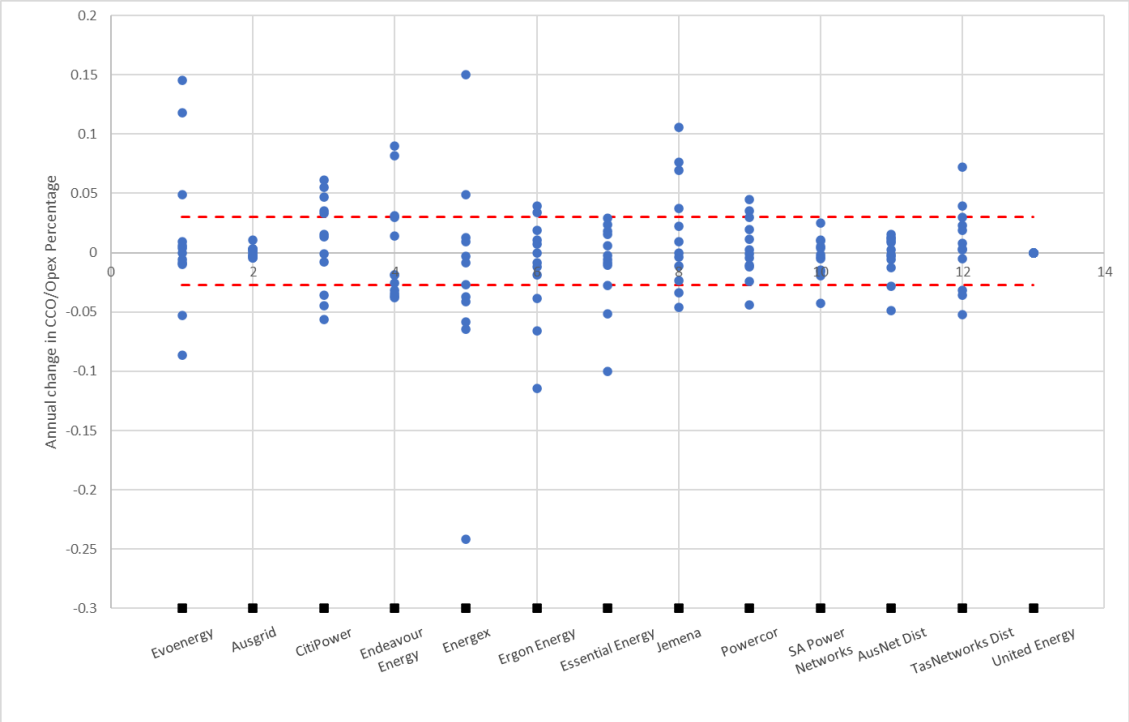
**Figure 2-1: Change in CCO/Opex Percentage from 2009**




*Source: AER, time period from 2009 to 2021*

20. Figure 2-2 shows the annual change in CCO/Opex percentage compared to the immediately prior year. It can be seen that CCO/Opex is highly unstable from year to year and is commonly more than 10% different to the previous year (positive and negative). (The red dotted lines represent the average positive and negative changes in CCO/Opex and these are both 3% - implying that when CCO is growing faster (slower) than CCO it is growing faster (slower) by around 3% on average.)

**Figure 2-2: Change in CCO/Opex Percentage from 2009**




*Source: AER, time period from 2009 to 2021*

21. The above analysis supports the AER's concerns, in the context of the capex models, that CCO can be lumpy in nature and that a single year of CCO might not be representative of normal or efficient CCO. Given this, it may be less appropriate to assess the efficiency of CCO and forecast CCO using a single 'base year' approach like opex.

22. There are several possible ways in which this internal consistency within the regulatory models (associated with different assumptions about how CCO vary over time) could be addressed. Four of these are summarised in Table 2-2 below.

**Table 2-2: Reform options to ensure consistent treatment of CCO across opex and capex models**

| Capex models | CESS | Benchmarking and opex models | EBSS | PTRM |
|---|---|---|---|---|
| Option 1: treat CCO as opex in both benchmarking models and regulatory models | | | | |
| Remove CCO | Remove CCO (prospectively) | Forecast CCO in the same way as opex | Include CCO (prospectively) | Compensate for CCO as opex |
| Option 2: assess and forecast CCO as opex but compensate as capex in regulatory model | | | | |
| Use forecast CCO from opex models | No change to status quo | As above | No change to status quo | No change to status quo |
| Option 3: use "opex+CCO" in benchmarking regression but leave CCO out of all other steps in benchmarking and opex models | | | | |
| No change to status quo | No change to status quo | "opex+CCO" only used in regression to estimate opex efficiency scores and cost drivers. Cost drivers are applied to opex only (not CCO) to roll forward benchmarking opex. | No change to status quo | No change to status quo |
| Option 4: continue to rely on capitalisation OEF's outside regression | | | | |
| No change to status quo | No change to status quo | No change to status quo | No change to status quo | No change to status quo |

- **Option 1** treats CCO as opex in all of the AER's models. This would involve removing CCO fully from the capex models (and CESS) and treating CCO as opex not just in the benchmarking analysis but also in the opex model, EBSS and the PTRM. This switch of treatment of CCO from capex to opex approach would tend to raise near term costs to consumers but lower long-term costs to consumers.
- **Option 2** treat CCO as opex for the purpose of estimating an efficiency factor using opex benchmarking (steps i to iv in Appendix A) and, in doing so, assumes that CCO is driven by opex cost drivers. This involves forecasting CCO together with opex in the opex forecasting model using the base-step-trend approach, using a single 'base year' CCO and assuming CCO changes with opex drivers. However, instead of compensating CCO as opex, the resulting CCO forecast is transferred into the capex model to allocate to PTRM capex categories, which effectively continue to compensate for CCO within the capex model (i.e., exclude from the opex model/opex in the PTRM). However, this may be a complicated approach that are prone to errors:
  - This forecasting approach requires extensive interaction between the opex and capex model. It first requires forecasting CCO in the opex model. It then requires inputting the CCO forecast from opex model into capex model to

allocate the annual CCO into each individual capex project. It will then require a reconciliation between the CCO in the capex model and opex model. The reconciliation could be problematic if the opex and capex model uses different inflation series (which is currently the case).

- **Option 3** involves a minimalist change to the status quo. Specifically, CCO is only added to opex for the purpose of estimating efficiency scores and cost driver coefficients in the benchmarking regression. However, all other steps in the benchmarking (including the roll-forward of benchmarking opex to base year) and opex models are left unchanged, which exclude CCO. Under this approach, the only change to the AER's current approach would be the Australian DNSP opex inputs into the opex regression (to use opex plus CCO).
- **Option 4** involves the AER continuing to apply a capitalisation OEF separate outside the benchmarking regression model rather than adding CCO to the opex regression. That is, return to one of the AER's previous preferred approaches.

23. When considering these options, it is relevant to note that CCO does not appear to be well explained by the assumed opex cost drivers (circuit length, ratcheted maximum demand and customer numbers) in the benchmarking regression. The existing regression is constructed based on the following formula:

$$Opex = Dummy\ variable + coefficients_{\ opex} \times \text{opex}\ cost\ drivers$$

24. When we regress Australian CCO on the cost drivers for opex we do not find significant relationships (see Table 2-3 below). It follows that this issue is not obviously a pressing concern in the current context.

**Table 2-3: Regression of Australian DNSPs' CCO against opex cost drivers***

| | Coefficient | Standard Error | P-value |
|---|---|---|---|
| Custnum | 3.513 | 3.578 | 0.326 |
| RMDem | 3.911 | 2.661 | 0.142 |
| CircLen | 1.181 | 1.632 | 0.469 |
| Underground share | -2.058 | 0.941 | 0.029 |
| Year | -0.038 | 0.047 | 0.418 |

* Regression uses LSECD also included firm specific dummies for Australian DNSPs (measured relative to EvoEnergy) and these dummies are all significant at 5% except for CitiPower and JEN.

## 2.2 Still a potential need to address the remaining capitalisation differences

25. The AER's reasoning for its new preferred approach is summarised on pages vii and viii of the draft guidance. We are generally supportive of the logic set out by the AER.

Differences in capitalised corporate overheads (CCO) are a transparent and easily identifiable source of difference in opex across DNSPs.

26. The AER acknowledges, and we agree, that there still may be some differences in opex across DNSPs that is driven by the choice of a position on the capex/opex trade off (as opposed to difference in allocation of the same costs). For example, as firms are affected differently by changed accounting treatment of Software as a Service (SaaS) and where there might be differences in asset vs cloud based ICT solutions).[3] We consider that this may be an important issue that needs to be dealt with in future determinations.

27. The AER states that this may "to some but varying extent" may be implicitly considered in our econometric opex cost function models ("to the extent that there is a high correlation of the outputs in that modelling and a capital input variable").

28. We are more sanguine about this conclusion. For example, we do not consider that differences in opex driving by in-house capex provision of IT services versus purchase of opex based cloud computing services would be correctly accounted for in the AER's proposed approach. If the difference in capex/opex trade-offs is material for some DNSPs, they should be provided the opportunity to propose an additional OEF to account for these differences. 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.

## 2.3 Threshold value of CCO

29. The AER asks what percentage of CCO to treat as opex. However, in our view a more pressing design issue is above what minimum threshold should CCO be added to opex?

30. This is because there is likely to be a non-trivial level of fixed costs associated with corporate overheads functions. This means that even with the same capitalisation policies, small DNSPs are likely to have larger CCO, expressed as a percentage of opex, than large DNSPs. Consequently, allocating 100% of all CCO to opex can be expected to make smaller networks appear artificially inefficient relative to larger networks.

31. An alternative to this approach would be to have a separate "scale" OEF (which might capture other factors as well) or to only allocate CCO above a common threshold to opex for the purpose of performing the benchmarking regressions.

3 AER, Draft Guidance note on capitalisation, October 2022, page 67.

## 2.4 Implementation issues raised by the AER

### 2.4.1 2014 or current CAM

32. The AER asks whether to continue using the 2014 frozen CAM or to adopt the current CAM (but to freeze that in place once adopted). In principle, this choice should not be important to the extent that the primary difference between CAMs relates to the capitalisation policy applied to corporate overheads. At a high level, what is important is that there is consistent treatment of costs.

33. For MTFP / MPFP measures, if opex includes capitalised corporate overheads, it is important that the same CCO is excluded from the capex that rolls into the RAB (reported under the Economic Benchmarking RIN). If CCO is added to opex but not excluded in capex for benchmarking, CCO will be incorrectly accounted for twice. Therefore, treating CCO as opex in benchmarking will require all DNSPs to backcast the entire historical RAB series with capex excluding CCO, which could be a very resource-intensive task for all DNSPs.

### 2.4.2 CCO or CCO+CNO?

34. The AER asks whether capitalised total overheads (including capitalised network overheads (CNO)) should be used in place of CCO. We agree with the AER that the delineation between network overheads and other cost categories is less clear than for CCO. In addition, and as surveyed in section 2.1, treating capital expenditure 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. It is also the case that the AER can, through the cost information collected annually through the Regulatory Information Notice process, monitor whether there are any changes in network overheads allocation can act appropriately in that eventuality.

### 2.4.3 Dealing with lack of CCO data pre 2009

35. The AER notes that CCO data for Australian DNSPs is not available prior to 2009. In this context the AER asks, when and how to commence the opex series for benchmarking? In our view the answer is relatively clear, if CCO is not available for Australian DNSPs prior to 2009 then Australian DNSPs data for benchmarking should start in 2009. Otherwise, the AER will be using inconsistent data for the same DNSPs.

36. However, for foreign DNSPs the AER should continue to use the longest data period available. This is important for the regression to result in robust estimates of the relationship between cost drivers and opex. We note that variation within the Ontario and New Zealand samples play an important role in estimating the cost driver

coefficients given that, unlike the Australian DNSPs, there are not individual dummies for these DNSPs (only country dummies).

## 2.5 Data issues

37. As already noted, one potential data issue is that the RIN has negative CCO for SAPN from 2012 onwards. [4]

**Table 2-4: SAPN RIN Standard CS CAPEX CCO**

| Year | Consolidated Expenditure |
|---|---|
| 2008/09 | $3,827,000.00 |
| 2009/10 | $3,192,000.00 |
| 2010/11 | $3,767,000.00 |
| 2011/12 | -$44,000.00 |
| 2012/13 | -$3,730,000.00 |
| 2013/14 | -$7,267,000.00 |
| 2014/15 | -$18,253,075.62 |
| 2015/16 | -$13,251,556.65 |
| 2016/17 | -$9,361,715.30 |
| 2017/18 | -$6,939,995.24 |
| 2018/19 | -$6,271,515.89 |
| 2019/20 | -$4,389,001.04 |
| 2020/21 | -$5,441,104.21 |

Source: Worksheet"Calc|Summary" in Workbook "AER – DX – Analysis – Capitalisation ratios – all DNSPs – 2021xlsx" in AER – Table 6 – Sensitivity Analysis_0.zip

38. There are also some material differences between the CCO data used by the AER in its most recent benchmarking analysis and the values reported in the RIN. These are summarised in Table 2-5 below.

[4] Worksheet"Calc|Summary" in Workbook "AER – DX – Analysis – Capitalisation ratios – all DNSPs – 2021xlsx" in AER – Table 6 – Sensitivity Analysis_0.zip

## Table 2-5: Discrepancy in CCO data

| DNSP | Year | Data from AER ($ thousands) | Data from RIN ($ thousands) |
|---|---|---|---|
| Energex | 2015 | 12,018 | 135,127 |
| Ergon Energy | 2016 | 107,084 | 116,129 |
| Ergon Energy | 2018 | 34,249 | 125,752 |
| Ergon Energy | 2020 | 149,146 | 141,194 |
| Essential Energy | 2015 | 51,383 | 61,969 |

Source: Table 2.1.1 from worksheet "2.1 Expenditure Summary" from the following workbooks Copy of D15 164824 Energex 2014-15 - Category Analysis RIN - templates - CONSOLIDATED - 30 October 2015 – PUBLIC.xlsm; Copy of D16 147371 Ergon Energy 2015-16 - Category Analysis RIN Response - Templates (CONSOLIDATED) - 31 October 2016 – PUBLIC.xlsm; DORIS - D18-158753[v2] Ergon Energy 2017-18 - Category Analysis RIN - Templates - Consolidated - 31 October 2018 – PUBLIC.xlsm; Ergon 2019-20 - Category Analysis - RIN Response - Consolidated - 2 Nov 2020 - PUBLIC (#11673965).xlsm; D15-179832[v3] Essential 2014-15 - RIN response - Category Analysis - consolidated – PUBLIC.xlsm

# Appendix A Detailed step-by-step description of current and alternative opex and capex forecasting and compensation

39. The AER's current approach to forecasting and setting compensation for operating costs and capital expenditure can be summarised in nine steps.

Opex

i. Within the benchmarking model, estimate benchmark regression parameters based on international and domestic DNSPs relationship between opex and cost drivers(circuit length, ratcheted maximum demand and customer numbers). In populating this model use 2014 CAM opex;

ii. For each version of the regression model, estimate an average efficiency parameter for each Australian DNSP based on how far away their 2014 CAM opex is from the estimated efficient frontier. For example, let this be 20%.

iii. Take each Australian DNSP's average 2014 CAM opex over the estimation period and apply the efficiency adjustment based on step aii. For example, $200*(1-20%)=$160

iv. Trend this average value forward (using cost drivers etc) to the final year of data used in the benchmarking model which is also the base year for opex. For example, let $160 from step iii) becomes $180.

v. Repeat this process across all the models and take the average. For example, assume the result remains at $180.

vi. Separately, take the actual opex from the RIN for network services (using the same 2014 CAM as benchmarking) for the same base year for opex used in step iv. For example, let this is $185.

vii. In this example, as the actual opex is higher than the trended benchmark opex which indicates the actual opex is inefficient, Calculate the percentage difference between the values in step v and step vi as the percentage reduction required to bring the actual opex to an efficient level. In this illustration this is 3% (=180/185-1=-3%).

viii. Leave the benchmarking model and enter the opex model. Apply the percentage decrement estimated in step vii to the opex in the opex model (where that opex is based on current CAM opex).

Capex

ix. Within the capex model, forecast out capex based on the current CAM capex (including capitalised corporate overheads).

40. We understand that the AER's proposed new approach to opex modelling is to alter the above steps in the following ways (marked in red).

i. Within the benchmarking model, estimate benchmark regression parameters based on international and domestic DNSPs relationship between opex and cost drivers(circuit length, ratcheted maximum demand and customer numbers). In populating this model use ~~2014 CAM opex~~ current CAM opex plus CCO.

ii. For each version of the regression model, estimate an average efficiency parameter for each Australian DNSP based on how far away their ~~2014 CAM opex~~ current CAM opex plus CCO is from the estimated efficient frontier.

iii. Take each Australian DNSP's average ~~2014 CAM opex~~ current CAM opex plus CCO over the estimation period and apply the efficiency adjustment based on step ii.

iv. Trend this average value (from step iii) forward (using cost drivers etc) to the base year for opex.

- Note that here we understand that the AER proposes to trend forward both current CAM opex and current CAM CCO to the opex base year. This will, in effect, be a forecast of CCO based on:
  - Average CCO over the benchmarking period; and
  - The growth in opex cost drivers over the benchmarking period.

v. Repeat this process across all the models and take the average.

vi. Separately, take the actual opex from the RIN for network services (using the same ~~2014 CAM~~ current CAM opex plus CCO as benchmarking) for the same year identified in step iv.

vii. If the actual opex plus CCO is higher than the trended benchmark which indicates the actual opex is inefficient, Calculate the percentage difference between the values in step v and step vi as the percentage reduction required to bring the actual opex plus CCO to an efficient level. For example, this illustration this is 3% (=180/185-1=-3%).

viii. Leave the benchmarking model and enter the opex model. Apply the estimated ratio from step vii to the opex in the opex model (using current CAM opex).

<u>Capex</u>

ix. Within the capex model, forecast out capex based on the current CAM capex (including capitalised corporate overheads). However, consider "the

question of whether and how to adapt our current assessment approach to capitalised overheads within resets".