



DRAFT DECISION

AusNet Services Distribution determination 2021 to 2026

Attachment 5 Capital expenditure

September 2020

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Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: 1300 585 165
Email: VIC2021-26@aer.gov.au

Note

This attachment forms part of the AER's draft decision on the distribution determination that will apply to AusNet Services for the 2021–26 regulatory control period. It should be read with all other parts of the draft decision.

The draft decision includes the following attachments:

Overview

Attachment 1 – Annual revenue requirement

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

Attachment 8 – Efficiency benefit sharing scheme

Attachment 9 – Capital expenditure sharing scheme

Attachment 10 – Service target performance incentive scheme

Attachment 11 – Demand management incentive scheme and demand management innovation allowance mechanism

Attachment 12 – Customer service incentive scheme

Attachment 13 – Classification of services

Attachment 14 – Control mechanisms

Attachment 15 – Pass through events

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Attachment 17 – Negotiated services framework and criteria

Attachment 18 – Connection policy

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Attachment A – Victorian f-factor incentive scheme

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5 Capital expenditure

Capital expenditure (capex) refers to the money required to build, maintain or improve the physical assets needed to provide standard control services (SCS).¹ Generally, these assets have long lives and a distributor will recover capex from customers over several regulatory control periods. A distributor's capex forecast contributes to the return of and return on capital building blocks that form part of its total revenue requirement.

Under the regulatory framework, a distributor must include a total forecast capex that it considers is required to meet or manage expected demand, comply with all applicable regulatory obligations, and to maintain the safety, reliability, quality, and security of its network (the capex objectives).²

We must decide whether or not we are satisfied that this forecast reasonably reflects prudent and efficient costs and a realistic expectation of future demand and cost inputs (the capex criteria).³ We must make our decision in a manner that will, or is likely to, deliver efficient outcomes that benefit consumers in the long term (as required under the National Electricity Objective (NEO)).⁴

The *AER capital expenditure assessment outline* explains our and distributors' obligations under the National Electricity Law and Rules (NEL and NER) in more detail.⁵ It also describes the techniques we use to assess a distributor's capex proposal against the capex criteria and objectives.

Total capex framework

We analyse and assess capex drivers, programs and projects to inform our view on a total capex forecast. However, we do not determine forecasts for individual capex drivers or determine which programs or projects a distributor should or should not undertake. This is consistent with our ex-ante incentive-based regulatory framework and is often referred to as the 'capex bucket'.

Once the ex-ante capex forecast is established, there is an incentive for distributors to provide services at the lowest possible cost, because the actual costs of providing services will determine their returns in the short term. If distributors reduce their costs, the savings are shared with consumers in future regulatory control periods. This incentive-based framework recognises that distributors should have the flexibility to prioritise their capex program given their circumstances and due to changes in information and technology.

¹ These are services that form the basic charge for use of the distribution system.

² NER, cl. 6.5.7(a).

³ NER, cl. 6.5.7(c).

⁴ NEL, ss. 7, 16(1)(a).

⁵ AER, *Capex assessment outline for electricity distribution determinations*, February 2020.

Distributors may need to undertake programs or projects that they did not anticipate during the reset. Distributors also may not need to complete some of the programs or projects proposed if circumstances change, these are decisions for the distributor to make. We consider a prudent and efficient distributor would consider the changing environment throughout the regulatory control period and make decisions accordingly.

Importantly, our decision on total capex does not limit a distributor's actual spending. We set the forecast at a level where the distributor has a reasonable opportunity to recover its efficient costs. As noted previously, distributors may spend more or less than our forecast in response to unanticipated changes.

5.1 Draft decision

We do not accept AusNet Services' initial net capex forecast of \$1459.6 million of which we have assessed \$1432.1 million. The assessed capex reflects updated figures that address modelling issues. We are not satisfied that its total net capex forecast reasonably reflects the capex criteria. Our alternative net capex estimate of \$1369.1 million is 4.4 per cent below the \$1432.1 million of capex that we have assessed. We are satisfied that our substitute estimate reasonably reflects the capex criteria. Table 5.1 outlines our draft decision.

Table 5.1 Draft decision on AusNet Services' total net capex forecast (\$ million, 2020–21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
AusNet Services' initial proposal	310.6	294.5	294.4	279.3	280.8	1459.6
Forecast assessed ⁶	305.4	289.1	288.8	274.7	274.1	1432.1
AER draft decision	283.4	280.0	279.2	264.0	262.6	1369.1
Difference (\$)	-22.1	-9.1	-9.6	-10.7	-11.5	-63.0
Percentage difference (%)	-7%	-3%	-3%	-4%	-4%	-4%

Source: AusNet Services' initial PTRM, subsequent information request responses and AER analysis.

Note: Numbers may not sum due to rounding.

The difference between AusNet Services' initial proposal and our draft decision capex is driven by the following:

- \$27.5 million reduction for modelling updates put forth by AusNet Services to street lighting replacement expenditure (replex) and updates to its fleet capex and fleet disposals.

⁶ We have assessed a slightly lower forecast, as AusNet Services changed aspects of its initial proposal, including removing street lighting replex, a reduction on poles replex, and amending its fleet forecast. The forecast assessed reflects the updated capex proposed by AusNet Services.

- \$15.4 million reduction for connections.
- \$16.0 million reduction for the reallocation of metering costs from standard control services SCS to alternative control services (ACS).
- \$31.6 million reduction for updated real cost escalations to internal labour and contract labour and Consumer Price Index (CPI).

The differences listed above include our standard overheads adjustment to take into account changes to direct capex.

In its revised proposal, we expect AusNet Services to also provide an update on demand driven augmentation expenditure (augex) and Rapid Earth Fault Current Limiter (REFCL). At this stage, we have insufficient information to make a full assessment. We expect AusNet Services in its revised proposal to reflect updated information for these areas of capex, if available. We also expect AusNet Services to further reduce its revised expenditure proposal given its commitment to do so in its May 2020 Bushfire Pass-through application to take account of avoided costs it has already incurred to address the Eastern Victorian bushfires.

5.2 AusNet Services' initial proposal

AusNet Services' initial capex forecast for the 2021–26 regulatory control period is \$1459.6 million. This is 17 per cent lower than its actual capex in the current regulatory control period. In response to our information requests, AusNet Services updated some of its proposed capex to take into account modelling updates. This resulted in an updated capex forecast of \$1432.1 million.

Table 5.2 shows AusNet Services' forecast capex by its own capex categories. We note the figures included in AusNet Services' proposal reflect AusNet Services' own categories.

Table 5.2 Annual and total capex forecast, AusNet Services categories (\$ million, 2020-21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Replacement	143.0	150.9	151.3	128.6	106.9	680.7
Safety (incl. REFCL)	49.8	39.7	37.4	53.6	69.5	249.9
Customer connections	113.6	112.0	110.7	112.3	113.8	562.4
Augmentation	19.6	22.0	19.4	15.7	15.4	92.2
ICT	48.1	34.3	38.9	30.2	29.6	181.1
Other non-network	10.4	7.7	7.2	10.5	18.0	53.8
Total gross capex	384.6	366.6	364.8	350.8	353.3	1820.2
Customer contributions	72.3	70.4	68.8	69.9	70.8	352.3
Disposals	1.7	1.7	1.7	1.7	1.7	8.3
Total net capex	310.6	294.5	294.4	279.3	280.8	1459.6

Source: AusNet Services, *2021–26 Regulatory proposal – part III*, January 2020, p. 48 and AER analysis.

Table 5.3 reflects AusNet Services' initial proposal consistent with our reset Regulatory Information Notice (RIN). For consistency when comparing with historical data, we have undertaken our analysis consistent with the capex reported in Table 5.3.

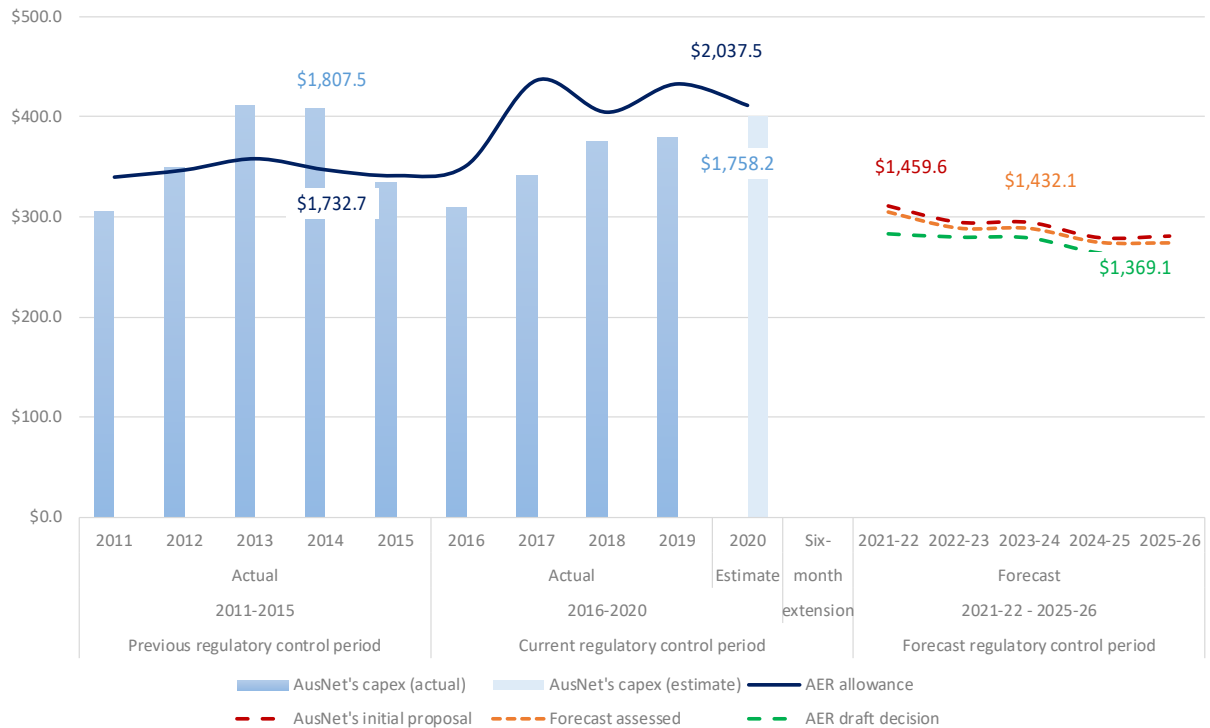
Table 5.3 Annual and total capex forecast, AER RIN categories (\$ million, 2020-21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Replacement	148.5	150.7	148.0	132.0	123.6	702.8
Connections	107.0	105.6	104.3	105.7	107.0	529.6
Augmentation	43.4	41.3	39.1	44.9	47.3	216.0
Non-network ICT	45.4	31.7	36.2	27.5	27.0	167.8
Non-network other	10.5	8.0	7.9	11.4	19.0	56.8
Capitalised overheads	29.9	29.4	29.4	29.4	29.4	147.1
Total gross capex	384.6	366.6	364.8	350.8	353.3	1820.2
Customer contributions	72.3	70.4	68.8	69.9	70.8	352.3
Disposals	1.7	1.7	1.7	1.7	1.7	8.3
Total net capex	310.6	294.5	294.4	279.3	280.8	1459.6

Source: AusNet Services, *2021–26 Regulatory proposal – part III*, January 2020, p. 46, AER analysis

Figure 5.1 outlines AusNet Services' historical capex performance against its initial proposal, as well as our draft decision position.

Figure 5.1 AusNet Services' historical vs forecast capex snapshot (\$ million, 2020–21)⁷



Source: AusNet Services' initial proposal and AER analysis.

Note: The capex figures reported refer to five-year totals over a regulatory control period. The 2020 estimate has been included in this chart for indicative purposes. We have not used this estimate in our trend comparison.

5.3 Reasons for draft decision

We are not satisfied that AusNet Services' total capex forecast reasonably reflects the capex criteria. We are therefore required to set out an alternative estimate.⁸ We are satisfied that our alternative estimate represents a total capex forecast that reasonably reflects the capex criteria and forms part of an overall distribution determination that contributes to achieving the NEO to the greatest degree.

We note that with the exception of modelling errors, which AusNet Services has acknowledged, and changes to economic conditions, we consider AusNet Services' forecast of total capex was reasonable.

⁷ In this attachment we compare forecast capex with actual capex in the current period; i.e. calendar year 2016 to 2019 pro-rated to five years. The impact of the COVID-19 pandemic and the derivation of calendar year 2020 estimate as the average of two financial year estimates creates uncertainty regarding the validity of the estimate.

⁸ NER, cl. 6.12.1(3)(ii).

We typically analyse a distributor's total capex forecast from a top-down⁹ perspective. This top-down review forms the starting point of our capex assessment to determine whether further detailed analysis is required, but is also used throughout our review process to test the results of our bottom-up assessment. We apply both top-down and bottom-up reviews so that our decision is fully informed.

Our alternative estimate only reflects: adjustments to reclassifications of capex, changes in economic conditions, and updates proposed by AusNet Services. In particular, we acknowledge that AusNet Services' capex forecast, submitted prior to COVID-19, do not take into account changed economic conditions. Including these adjustment, we concluded that a top-down assessment indicated that total capex reasonably reflects the capex criteria. An important factor in this position was the top-down adjustment to total individual program requirements implemented by AusNet Services in developing its aggregate capex proposal.

Given our top-down assessment, an examination of the proposed expenditures at the program level was given relatively less weight than if AusNet Services' forecast was materially higher than its historical capex. We also undertook a bottom-up review at the category level consistent with our standard approach. While we identified some areas where individual capex categories were not fully justified we are satisfied that, having regard to AusNet Services' top-down challenge, these concerns are not material. That is, the top-down adjustment made by AusNet Services was as large, or larger, than the total sum of the adjustments that we would otherwise make at the individual category level.

Notwithstanding our acceptance of the program in aggregate (with the adjustments identified) and the support from consumers, we expect that programs proposed and submitted by distributors will be fully supported by rigorous evaluation.

In determining whether AusNet Services' total capex forecast is prudent and efficient, in addition to the capex factors,¹⁰ we have had regard to:

- trend analysis
- AusNet Services' application of top-down challenges and its customer engagement
- economic conditions
- network health indicators
- review of individual capex categories
- AusNet Services' willingness to work through issues raised by us.

In particular, we note the following:

⁹ A top down analysis focusses on overall trends and adjustments rather than a bottom-up analysis which focusses on aggregating category specific drivers.

¹⁰ NER, cl. 6.5.7(e)

- The capital expenditure sharing scheme (CESS) applies to the current regulatory control period. We therefore place significant weight on AusNet Services' forecast capex being 17 per cent lower than its actual capex over the first four years of the current regulatory control period. In addition, its forecast is 18 per cent lower than its longer term actual capex trend, going back to the start of the 2011–2015 regulatory control period. We also note that for almost all capex categories, AusNet Services' forecast was lower than its current regulatory control period spend.
- AusNet Services' System Average Interruption Frequency Index (SAIFI) results are improving indicating that it has successfully managed its network reliability over the current regulatory control period with its current spend levels. It is also expected to improve its reliability even further in the forecast period, despite forecasting total capex materially below its current period levels. We therefore appreciate AusNet Services self-imposed challenge to balance reliability and affordability in meeting the needs of its customers. We are also mindful that material reductions to AusNet Services' forecast capex may affect the performance of its network, and therefore had regard to this in our bottom-up review.
- We acknowledge AusNet Services' constructive top-down challenges and its customer engagement that has genuinely tested its submitted forecast capex. In particular, AusNet Services' undertook a top down review of its proposal which reduced its forecast by \$151.8 million, and then applied a further \$9.0 million top down adjustment for efficiency savings. We especially note its genuine willingness to understand the customer perspective by testing different feasible options to address customers' needs. We view AusNet Services' efforts to sincerely listen to its Customer Forum as setting a high standard to customer engagement. We expect other businesses to learn from the effectiveness of its customer engagement.
- AusNet Services' willingness to work through issues raised by us. When we raised issues with AusNet Services with some of its bottom-up analysis, several of our issues were either addressed by AusNet Services later in the process or potential alternative estimates were not too dissimilar from AusNet Services' forecast. For instance, AusNet Services demonstrated a strong willingness to work with our staff when issues were raised with its repex forecast; namely with poles repex and SCADA. In addition to providing further supporting quantitative information, AusNet Service also reduced its forecast for poles repex by \$13.3 million to address our concerns.
- Due to AusNet Services' participation in the New Reg trial, we note that some stakeholders considered we should focus more on a top down assessment and others considered we should apply the same level of scrutiny as any other assessment. For example, Energy Consumers Australia (ECA) noted that it may be worthwhile if we choose to apply a lower level of scrutiny compared to other networks. Similarly, the Energy Users' Association of Australia (EUAA) noted that its initial view is that there may be a case for a lighter AER touch for those in the

agreed and in-scope category. All other matters should have the same AER focus. However, Victorian Community Organisation (VCO) recommended that we should subject all proposals to the same level of scrutiny.¹¹

5.3.1 Trend analysis

Table 5.4 below is a comparison of current regulatory control period and initial forecast net capex and shows AusNet Services' total capex forecast is 17 per cent below its current and estimated capex for the current period. This increased to 19 per cent following AusNet Services' updated forecast.

Further, AusNet Services' forecasts a decrease in each capex category except for repex, which is only a minor step up from current regulatory control period spend. The largest decrease relative to current spend is in augex, which is due to a decrease in REFCL-related capex.¹² This represents the transition from the three REFCL contingent project tranches to on-going REFCL compliance. This shift in REFCL capex accounts for half of the 19 per cent decrease in forecast capex.

Table 5.4 Comparison of annualised current period and forecast net capex by capex driver (\$ million, 2020-21)

Driver	2016–19 average actual capex	Average annual forecast 2021–26 capex	Difference (%)
Repex	133.5	140.6 ¹³	5%
Net connections	45.7	35.5	-22%
Augex	94.3	43.2	-54%
Non-network capex	48.2	44.9 ¹⁴	-7%
Overheads	34.7	29.4	-15%
Net capex (excludes disposals)	351.6	291.9	-17%^a

Source: AER analysis. Note A: This increased decreased -19 per cent following data updates from AusNet Services.

The application of the CESS in the current period means that we have more confidence in the actual capex spend levels representing a reasonable forecast of total capex. The objective of the CESS is to incentivise DNSPs to find efficiencies and reveal the underlying costs of service that are captured in actual capex. AusNet

¹¹ Victorian Community Organisations, *2021–26 Victorian EDPR*, May 2020, p. 15.

¹² This is largely due to REFCL related expenditure of \$348.2 million in the current period declining to \$163.2 million in the forecast period.

¹³ AusNet Services has subsequently reduced its repex forecast by \$23.1 million to \$679.7 million, which accounts for the removal of public lighting, and a reduction in pole volumes.

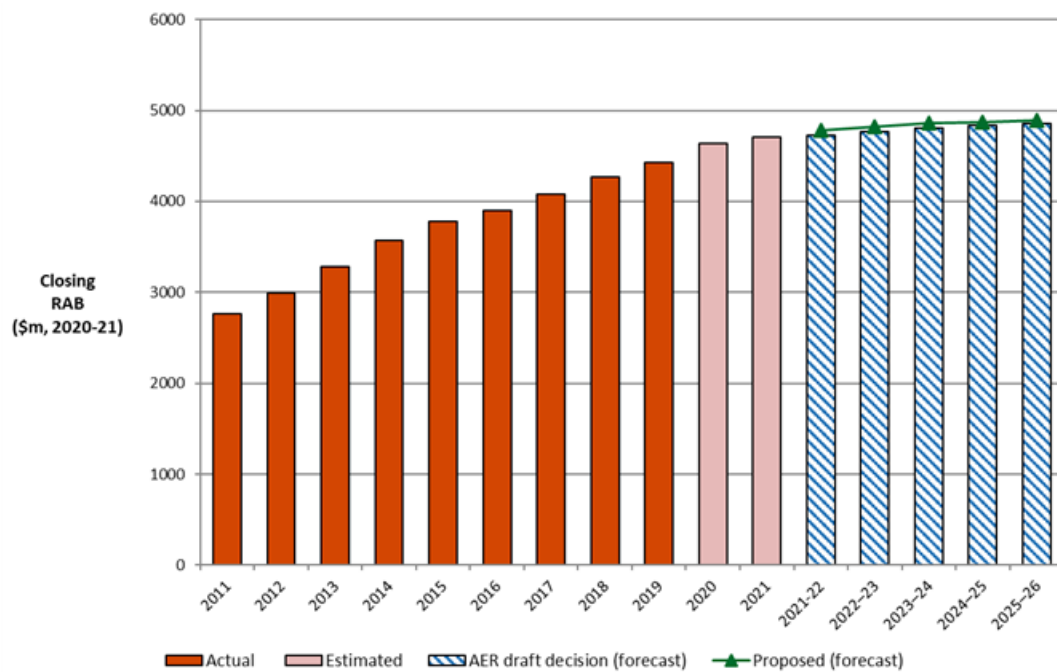
¹⁴ AusNet Services has subsequently reduced its fleet capex forecast by \$5.5 million.

Services' forecast is materially below its current spend and therefore provides evidence supporting the conclusion that its forecast is prudent and efficient.

We have also examined the effect of forecast capex on regulatory asset base (RAB) growth. The VCO submitted that reducing network charges must be prioritised to ensure the affordability of an essential service for all Victorians. It stated that continued RAB growth should be avoided to reverse the ongoing trend of rising electricity prices.¹⁵

Figure 5.2 shows AusNet Services' RAB has grown over time. RAB increase in the current regulatory control period were driven by REFCL capex. However, this growth rate has slowed in the 2021–26 regulatory control period. This is largely due to accelerated depreciation and lower forecast capex below historical trend.

Figure 5.2 Value of AusNet Services' RAB over time (\$ million, 2020–21)



Source: AER analysis.

To obtain a well-informed view, we also undertook a review of capex categories. These are discussed in Section 5.3.6.

5.3.2 Top down challenges and customer engagement

AusNet Services engaged in a number of activities to test its forecast capex. We have identified the following two significant contributing factors:

- Top down adjustments for capex efficiency; and

¹⁵ Victorian Community Organisations, *2021–26 Victorian EDPR*, May 2020, p. 1.

- The process AusNet Services undertook pre-proposal in its capex negotiations with AusNet Services' Customer Forum, and especially its response to that forum's feedback.

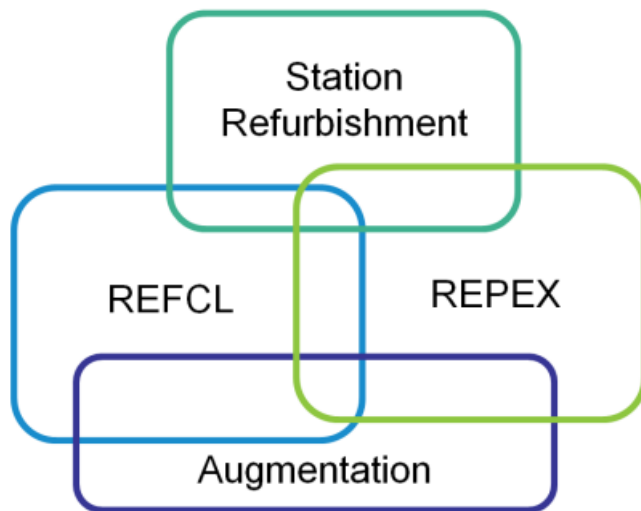
We consider these two factors in the sections below.

Adjustment for capex efficiencies

Prior to submitting its proposal on capex, AusNet Services undertook a top down review of its forecast capex at the project level reducing it by \$151.8 million. After reviewing the material AusNet Services provided in support of its engagement with the Customer Forum including how it tested different options, we are satisfied that this top-down challenge at the pre-proposal stage was a contributing factor to AusNet Services' forecast capex being materially lower than current regulatory control period capex.

In addition to this top-down challenge, AusNet Services then applied a further 0.8 per cent (\$9.0 million) top down adjustment for capex efficiency savings. Figure 5.3 provides an example of where overlaps may exist.

Figure 5.3 **Overlap between capex programs and projects**



Source: AusNet Services, *2021–26 Regulatory proposal – part III*, January 2020, p. 67.

AusNet Services noted that the top down adjustment related to removing potential overlaps between capex projects. This included identifying where it expects work at the same location or to replace the same asset. We consider that this methodology of identifying capex efficiencies as part of the forecasting process represents a best practice approach. Further, we view AusNet Services' initiative to seek these synergies and remove double counting to take account of interrelationships between capex projects, as the characteristics of an efficiently-run business with a focus on providing the best outcome for its customers. This adjustment, in conjunction with a forecast that is below historical trend, provides us with confidence that AusNet Services has not over forecast its capex at the overall level.

We note that while the \$9.0 million adjustment has been explicitly taken into account in AusNet Services' capex model, we consider both top down adjustments are similar in nature and represent an efficiency adjustment to AusNet Services' capex proposal. We are satisfied that both these top down adjustments represent capex efficiency savings.¹⁶

We have taken these top down adjustments into account when comparing our assessment of each capex category.

Customer engagement and negotiations with the Customer Forum

We consider that AusNet Services' efforts to sincerely listen to its customers as setting a high standard to customer engagement. We especially note its genuine willingness to understand the customer perspective by testing different feasible options to address customers' needs, which then resulted in material modifications to the proposal.

In particular, we consider AusNet Services' engagement with its Customer Forum has been an effective top-down challenge because:

- AusNet Services' negotiations with the Customer Forum considerably strengthened the focus on aggregate spending and revenue requirements, which lead to AusNet Services' top-down capex adjustment.
- While only about 7 per cent of its net capex proposal covering augex, repex, distributed energy resources (DER) and innovation was negotiated with the Customer Forum, work undertaken by AusNet Services and its Customer Forum has resulted in reductions in other parts of its capex proposal. We have placed appropriate weight on the capex related to this customer engagement as one of the capex factors for which we have had regard.¹⁷
- Although the Customer Forum agreed upon certain aspects of capex that, under our typical assessment approach, may not necessarily have been included in our alternative capex forecast, we are satisfied that some of this is offset by capex AusNet Services has not included in its forecast due to the focus on affordability during the negotiations.
- AusNet Services' engagement with its Customer Forum resulted in genuine amendments to its capex proposal to reflect feedback from the Customer Forum. This included deferring several repex and augex projects and reducing the scope of other projects to prioritise cost savings over reliability.¹⁸ We consider it is AusNet Services' response to customer feedback and in particular the concerns regarding affordability which has been a focus of AusNet Services' capex proposal to be good practice and should be reproduced as part of all stakeholder engagement.

Overall stakeholder submissions were favourable towards AusNet Services' customer engagement.

¹⁶ AusNet Services, *Email: Re AER- AusNet Services discussion on top down capex*, 17 July 2020, p. 1.

¹⁷ NER cl. 6.5.7(e)(5A).

¹⁸ AusNet Services, *2021–26 Regulatory proposal – part III*, January 2020, p. 71.

The AER's Consumer Challenge Panel (CCP17) noted strengths of the forums was seeking views from a range of customers and a comprehensive draft proposal was made available months in advance of lodgement. CCP17 considered the Customer Forum influenced a change in culture and approach at AusNet Services.¹⁹

The ECA noted the Customer Forum was invaluable in bringing the voice of the customers to the table. The ECA also noted that it was unfortunate that the Customer Forum's scrutiny was limited to 7 per cent of total proposed capex.

The Victorian Government also noted the Customer Forum was best practice, similarly the EUAA considered the negotiations resulted in some important changes from the Draft Plan which is in the long term interests of EUAA members.

The Victorian Council of Social Service noted that the customer engagement demonstrated benefits to customers, and that the results of the customer engagement should inform rather than determine the assessment of capex.

5.3.3 Updating for economic conditions

As AusNet Services submitted its initial proposal prior to COVID-19, it could not have reflected the change in economic conditions. Our alternative capex reflects our best estimate of the expected changes in economic conditions in two areas where we have updated data; that is connections through housing data and real cost escalations through updated consultant forecasts.

We note that we have not adjusted some other categories given insufficient information at this point in time. This includes demand driven augex and REFCL capex. We expect AusNet Services in its revised proposal to reflect updated information for these areas of capex, if available.

Our substitute forecast includes the following amendments to AusNet Services' initial proposal:

- revised connections for updated economic conditions
- modelling adjustments for real cost escalations and CPI
- updates for fleet and repex
- modelling adjustments to take into account ACS and SCS metering cost allocations.

We note several stakeholders considered due to COVID-19, some parts of AusNet Services' capex proposal were no longer relevant. AGL, CCP17, EUAA all noted that

¹⁹ CCP17, *Advice to the AER on the Victorian electricity distributors' regulatory proposals 2021–26*, June 2020, pp. 15-19.

they expected declines in energy demand.²⁰ The ECA²¹ and VCO²² also noted that recent economic circumstances will impact economic growth in the short to medium term and that critical forecasts and associated expenditure, such as connections, should be reassessed in line with COVID-19 impacts.

We also consider there is not sufficient information at this stage to update for demand driven augex and for REFCL. We discuss this in more detail below.

Connections forecast

We have adjusted AusNet Services' connections forecast for 2021–22 for the effects of COVID-19 based on the Housing Industry Association's (HIA) construction forecasts. This results in an 8 per cent reduction to net connections (\$14.6 million) compared to AusNet Services' proposed \$177.3 million in net connections.

AusNet Services' forecast connections based on construction activity forecasts produced prior to COVID-19. The virus has strongly affected the construction industry, and is likely to continue to reduce activity due to its effect on net migration and overall output.

We consider that had COVID-19 not occurred, AusNet Services' connections forecast was likely to be reasonable. It forecast \$210.2 million, a 19 per cent reduction compared to expected net capex over the current regulatory control period.

We have therefore adopted AusNet Services' forecast as the basis for our alternative estimate and applied a COVID-19 adjustment. This adjustment is based on HIA forecasts released in April 2020. We have used these forecasts as they provide a Victoria-specific forecast and extend one year into the forthcoming regulatory control period.²³ To estimate the effects of COVID-19 on 2021–22, we compared forecast dwelling starts with actual yearly dwelling starts prior to COVID-19 over the current regulatory control period (calendar years 2016–19). This gives a ratio of 0.58. This is an approximate measure of the forecast effects of the virus, as this is the major factor the HIA sought to account for in producing these forecasts. We then applied this ratio to AusNet Services' forecast gross connections and capital contributions for 2021–22. This results in an 8 per cent reduction to both, reducing net connections by \$14.6 million compared to AusNet Services' forecast of \$177.3 million.

The duration of COVID-19's effect on connections is highly uncertain. The Reserve Bank of Australia's August Statement on Monetary Policy assumes international border restrictions will ease from the middle of 2021 in its baseline scenario.²⁴ Net migration

²⁰ AGL Energy, Submission on Victorian electricity distribution determination 2021–26, p.1, CCP17, *Advice to the AER on the Victorian electricity distributors' regulatory proposals 2021–26*, June 2020, p. 3, ECA, *Victorian electricity distributors regulatory proposals 2021–2026 submission*, June 2020, p. 14.

²¹ ECA, *Victorian electricity distributors regulatory proposals 2021–2026 submission*, June 2020, p. 14.

²² Victorian Community Organisations, *2021–26 Victorian EDPR*, May 2020, p. 10.

²³ Housing Industry Association, *HIA Housing Forecasts - April 2020 COVID-19 Update*, April 2020.

²⁴ Reserve Bank of Australia, *Statement on Monetary Policy*, August 2020, Section 6 (Economic Outlook).

and construction activity will likely then take time to recover. This indicates it is reasonable to assume the effects of the virus on construction is expected to have ended by July 2022. Therefore, for years after 2021–22, we have accepted AusNet Services' pre-COVID-19 forecasts.

However, we will incorporate any new information that could materially affect our connections forecast. This could include:

- updated construction forecasts for Victoria (including those that would allow us to distinguish by type)
- any actual 2020 capex data from AusNet Services; or
- updated information about the likely length of the pandemic.

Allocation of metering costs between SCS and ACS

We have adjusted the allocation of metering costs between SCS and ACS to better reflect the sharing of costs. This includes an adjustment mesh network asset management and CNMS lifecycle management. AusNet Services proposed a 50:50 allocation of its advanced metering infrastructure (AMI) IT and communications capex. This was previously attributed to ACS. We consider a more reasonable sharing of costs is 6 per cent SCS and 94 per cent ACS.

For more information on this adjustment, see Attachment 15.

Real cost escalations

Changes to real cost escalations account for 50 per cent of the difference between AusNet Services' updated initial proposal and our alternative capex forecast.

We have updated AusNet Services' real cost escalations to reflect updated data. We note Deloitte's forecasts are the only available wage price index (WPI) growth forecast that takes into account the effects of the COVID-19 pandemic. These forecasts were prepared in late July 2020. The forecasts provided by AusNet Services were prepared prior to the COVID-19 pandemic, which has materially changed the economic outlook.

While we have adopted Deloitte's forecasts for the draft decision, consistent with opex, our preferred approach is still to average our consultant forecast and the forecast provided by AusNet Services, which in this case is forecast by BIS Oxford Economics. In that regard, we will update the final decision using our standard approach once AusNet Services provides updated forecasts which factor in the economic uncertainty caused by COVID-19. More information on our labour forecast is available in Attachment 6.

We have also adjusted AusNet Services' contract labour to not include any real cost escalations. We consider CPI growth is the best estimate of forecast growth in the price of contracted services for the following reasons:

- Contracted services can be adjusted to address changes in the labour market and/or economic climate.

- Forecasting labour price growth for contracted services, without taking into account productivity growth, would likely overstate the growth in the price of contracted services.

This is our standard approach to real cost escalations and is consistent with our recent decisions for SA Power Networks, Energex and Ergon Energy.²⁵

Other adjustments

We have not adjusted for demand driven augex and REFCL. However, we note these two categories of capex are sensitive to updated information. Although we have not adjusted these two categories given there is not sufficient information available at this time for us to form an alternative, we will consider AusNet Services' revised proposal and updated information as part of our final decision.

Demand driven augex

AusNet Services' augex forecast (\$92.2 million) is 39 per cent below actual capex over the current regulatory control period.²⁶ Although we have concerns with AusNet Services' demand forecasts, as they exceed the Australian Energy Market Operator's (AEMO), this significant reduction in traditional augex indicates the forecast does not exceed the prudent and efficient level.

As AEMO's latest forecasts for AusNet Services' network were produced in 2019, its 2020 terminal station demand forecasts are likely to be lower due to COVID-19 (as AEMO's 2020 state-wide forecasts are moderately lower). If so, we would assess whether these forecasts lead to a material reduction in AusNet Services' augex forecast below the reduction it has already included.

CCP17 also noted that the difference between AEMO's forecast and AusNet Services was not significant.²⁷

REFCL

AusNet Services proposed \$143.0 million for REFCL augex for bushfire mitigation obligations. Following the Victorian Bushfires Royal Commission in 2009, legislation was introduced to require distributors to reduce the likelihood of bushfire starts from electrical equipment faults.²⁸ These amendments place regulatory obligations to achieve certain technical requirements (referred to as 'required capacity') at 22 of

²⁵ AER, *Final decision SA Power Networks 2020 to 2025 attachment 5*, June 2020 p. 64. Energex, *Final decision Energex 2020 to 2025 attachment 5*, June 2020, p. 11 and Ergon Energy, *Final decision Ergon Energy 2020 to 2025 attachment 5*, June 2020, p. 10.

²⁶ Excluding REFCL and safety augex and including DER capex.

²⁷ CCP17, *Advice to the AER on the Victorian electricity distributors' regulatory proposals 2021–26*, June 2020, p. 59.

²⁸ *Electricity Safety (Bushfire Mitigation) Regulations 2013* (Vic), *Electricity Safety Amendment (Bushfire Mitigation Civil Penalties Scheme) Act 2017* and *Electricity Safety (Bushfire Mitigation Duties) Regulations 2017* (Vic).

AusNet Services' zone substations.²⁹ A REFCL is a technology installed at the zone substation that can be used to achieve the required capacity to reduce the risk of faulted powerlines starting bushfires.

In the current regulatory control period, AusNet Services and Powercor each submitted a contingent project application in three tranches. Through the contingent project process, most of the REFCL augex has been approved but the distributors have proposed additional capex for maintaining compliance at the tranche one and tranche two sites that have been completed or are due for completion in 2021. The ongoing compliance expenditure is for addressing network capacitive current that is forecast to exceed the REFCL capacity at some zone substations in the forecast regulatory control period, to maintain the required capacity to comply with the regulations.

AusNet Services' REFCL augex is divided into two programs consisting of \$48.6 million for the REFCL installation program, and \$94.3 million for ongoing compliance at eight zone substations. We do not assess the capex for the REFCL installation program given it has already been assessed in the contingent project process.³⁰ For the ongoing compliance program, we have decided for a placeholder for AusNet Services' REFCL capex and to defer the decision on AusNet Services' REFCL until the final decision where there will be more information available.

One particular issue is the maximum number of REFCLs at a zone substation, which we have discussed with AusNet Services and Energy Safe Victoria (ESV). AusNet Services proposed a maximum of two REFCLs at a zone substation because of existing software limits. In contrast, Powercor is currently installing and implementing three REFCLs at its Ballarat North zone substation, which is being tested in October 2020. Given Powercor has proposed to implement this at four other zone substations in its forecast, Powercor appears confident that this solution is likely feasible in the forecast period so we consider this possible for AusNet Services as well.

Our concern is that AusNet Services' approach requires the construction of three new zone substations to achieve compliance, where demand growth and asset condition are otherwise not constraints in the forecast regulatory control period at these sites. There is a potential opportunity for a material reduction in capex if AusNet Services is able to implement three REFCLs at a zone substation and defer the construction of some of these zone substations. At this stage, AusNet Services does not consider three REFCLs is technically feasible given the manufacturer software to achieve three REFCLs at a zone substation is not yet available and tested.³¹

As testing results and further information becomes available regarding the software, we anticipate AusNet Services will account for this in its revised proposal. We will

²⁹ Achieving required capacity involves reducing the voltage and current on faulted power lines as defined in the *Electricity Safety (Bushfire Mitigation Duties) Regulations 2017*, regulation 7.

³⁰ NER cl. 6.5.7 (f)–(j).

³¹ AusNet Services, *Information request 020*, May 2020; and *Information request 042*, July 2020.

continue to work with AusNet Services and ESV towards a solution if further information arises before the final decision.

We also understand that AusNet Services is currently pursuing possible exemptions with the Victorian Government and ESV regarding its preferred solution for Kalkallo zone substation. AusNet Services has advised it will change its proposal if the exemption is approved.³² Considering this and the abovementioned software upgrade, we have decided to not include an adjustment to the alternative forecast and to defer the decision on REFCL augex to the final decision when more information will be available.

5.3.4 Network health indicators

A review of some of AusNet Services' network health indicators indicate that it is performing well against these metrics. Figure 5.4 shows AusNet Services' SAIFI performance for urban, short rural feed and long rural feeder targets. SAIFI results for AusNet Services indicate that its network performance has been improving overall since 2009, and is expected to improve even further in the forecast regulatory control period.

Figure 5.4 AusNet Services SAIFI



Source: AER analysis

³² AusNet Services, 2021–26 Regulatory proposal – part III, January 2020, p. 90.

AusNet Services submits that it achieved record reliability in 2017, with 1.5 interruptions to supply per customer in that year.³³ It also notes that its safety-related metrics have improved since 2009, indicating the importance that AusNet Services places on maintaining network safety risk. This is reflected in fewer incidents with fire potential, and fewer fire starts in the current period relative to the previous.³⁴

These results suggest that AusNet Services' current expenditure levels of capex, especially repex has allowed it to at least maintain its service level outcomes consistent with the NER. In this regard, these SAIFI results and other network health metrics indicate that we need to be mindful that any further reduction to AusNet Services' forecast could have an impact on its ability to maintain its service levels.

5.3.5 Category specific assessment

We have undertaken category specific assessments for areas of precedence. Notwithstanding our acceptance of AusNet Services' forecast capex in aggregate, with the exception of adjustment we have identified, we expect that the information to support specific capex projects proposed by AusNet Services will be fully supported by rigorous evaluation.

With the exception of connections, we have not made further adjustments to any category specific forecast. This is because after adjusting for connections and real cost escalations we are satisfied our alternative total capex forecast is prudent and efficient. However, we note that we have some issues with aspects of AusNet Services' forecast from a bottom-up perspective.

Had we not considered AusNet Services' top-down adjustments and overall forecast was reasonable, with the exception of some adjustments, then we may have adjusted for the bottom-up issues. However, we do not consider an adjustment, for bottom-up issues, is required as these concerns are not material in the context of AusNet Services' overall capex forecast.

The sections below identify any issues for each capex category.

Repex

We are satisfied that AusNet Services' repex forecast of \$679.7 million is prudent and efficient.³⁵ We had regard to the weighing up of several factors in coming to our position. In particular, while several top-down repex metrics demonstrated that AusNet Services' proposed repex was reasonable, we had a number of issues with the forecasting of some repex programs. These issues were raised with AusNet Services,

³³ AusNet Services, *2021–26 Regulatory proposal – part III*, January 2020, p 13.

³⁴ AusNet Services, *2021–26 Regulatory proposal – part III*, January 2020, p.87.

³⁵ AusNet Services initially proposed \$702.8 million for repex, it subsequently re-categorised public lighting to ACS in *Information request 06 – Q4*, 15 April 2020. AusNet Services subsequently reduced its poles forecast by \$13.3 million (AusNet Services, *Email: AER/AusNet meeting - repex*, 13 August 2020).

and were addressed promptly and thoroughly, including a reduction in its forecasts for those programs we had concerns with.

On the top-down repex measures, AusNet Services has performed well. In particular:

- AusNet Services' forecast repex is in line with its current spend (forecast being 4 per cent above current regulatory control period spend).
- In addition to top-down adjustments across other areas of capex, AusNet Services has applied a top-down adjustment of \$4.5 million across its total forecast repex to take account of efficiencies found within its replacement programs.
- We had regard to stakeholder's comments. VCO submitted that trend analysis is the preferred testing method for repex, given that historical expenditure is reflective of future expenditure.³⁶ EnergyAustralia submitted that distributor commitments to further efficiency gains, such as a reduction in major project repex from preliminary forecasts discussed with the Customer Forum should be encouraged.³⁷
- The repex modelling results indicate that AusNet Services' forecast modelled repex is above the repex model threshold ('lives scenario') by approximately \$7 million. With the exception of poles, all other asset groups were in line with, or lower than, what the model predicts. We therefore took a more thorough review of AusNet Services' forecast for poles repex. Consistent with our repex modelling engagement approach, we met with all distributors on our preliminary repex modelling results, and requested feedback on these results. AusNet Services responded promptly, seeking clarification on specific modelling assumptions and provided further detailed evidence in support of their reasoning. We have made adjustments to the repex model where we have agreed with AusNet Services reasoning. Further details about the repex modelling results are in Appendix A.

From a bottom-up perspective we undertook a thorough review of certain repex programs, focusing on AusNet Services' forecast poles repex and some of its unmodelled repex, namely, SCADA and its overhead conductors program. We identified a number of issues with these programs which were raised with AusNet Services. Their prompt and thorough response has addressed our concerns. We note the following:

- AusNet Services acknowledged the issues we raised about the step up in unit costs and replacement volumes in its forecast of \$207.3 million in poles replacement. It has been able to justify the step up in unit costs.³⁸ Further, it reduced its forecast replacement volumes by 7 per cent, and therefore its poles forecast repex by

³⁶ Victorian Community Organisations, *2021–26 Victorian EDPR*, May 2020, p.40-42.

³⁷ Energy Australia, *Victorian electricity distribution determinations 2021–26 regulatory proposal*, June 2020, p.5

³⁸ AusNet Services' forecasted unit cost includes service line costs, as it replaces services lines alongside poles for efficiency purposes. Additionally, the forecasted unit cost in the repex model reflects a blending of concrete and wooden poles to reflect AusNet Services' practice of replacing a portion of its wooden pole population with concrete poles. AusNet Services, *Information request 25*, May 2020.

\$13.3 million.³⁹ This brings its forecast poles replex in line with its current regulatory control period spend on poles. We also note support for the pole replacement program from CCP17 which submit that AusNet Services' priority on poles aligns with its expectation that this category is the primary focus.⁴⁰

- AusNet Services acknowledged the lack of justification for its forecast of \$68.7 million to replace SCADA.⁴¹ In response to our concerns, it has provided further quantitative supporting material. We also note support for this program from CCP17 which submit that AusNet Services' investment targeted at SCADA is consistent with the priorities seen in most other Victorian DNSPs.⁴²
- We are also satisfied with the further supporting material provided by AusNet Services to the issues raised about its forecast of \$35.4 million to proactively insulate and underground approximately 100km of single-wire earth return conductors in Codified Areas.⁴³ In coming to our position, we also had regard to support for this program from ESV which submit concern that the rate of insulation and undergrounding of conductors in Codified Areas is slower than preferred.⁴⁴ Additionally, CCP17 supports AusNet Services' intention to reduce the volume of work to balance affordability and bushfire risk.⁴⁵

Distributed Energy Resources

DER commonly refers to solar photovoltaic (PV), storage, electric vehicles, and other consumer appliances that are capable of responding to demand or pricing signals. Increasing DER penetration represents a change in the way that consumers interact with electricity networks and the demands that it places on networks. DER integration expenditure seeks to manage the growing effects of higher penetration of DER on the network, in particular the effects of solar PV and effect on a distributor's ability to manage voltage within standards.

AusNet Services included \$52.9 million of DER related capex in its overall capex forecast. We have assessed in total \$58.9 million in DER capex, this includes additional capex we consider to be DER related. The DER related capex we have assessed includes the following:

³⁹ Our concerns related to the inclusion of non-pole failures in its calculation of per cent of pole population failures due to contact by a third party, one of three key drivers of the volumes forecast. This inclusion inflated the pole failure rate and therefore AusNet Services pole volume forecast. AusNet Services, *Re: AER/AusNet meeting - replex*, 13 August 2020.

⁴⁰ CCP17, *Advice to the AER on the Victorian electricity distributors' regulatory proposals 2021–26*, June 2020, p.72.

⁴¹ AusNet Services originally proposed \$87.1 million for SCADA replacement. This figure has been reduced by \$18.4 million to reflect a reallocation of weighting between ACS and SCS.

⁴² CCP17, *Advice to the AER on the Victorian electricity distributors' regulatory proposals 2021–26*, June 2020, p.72.

⁴³ Codified Areas are areas of high bushfire risk, as defined under the Electricity Safety Act 1988.

⁴⁴ Energy Safe Victoria, *Submission in response to AER Issues Paper*, June 2020, p.3.

⁴⁵ CCP17, *Advice to the AER on the Victorian electricity distributors' regulatory proposals 2021–26*, June 2020, p.73.

- \$20.6 million in Voltage Compliance (augex) – augmentation to address areas currently non-compliant with the Victorian Electricity Code, which requires it to limit customers’ DER export capability
- \$20.9 million in Hosting Capacity for DER (augex) – augmentation to address new DER export constraints as they emerge
- \$6.0 million for Customer Supply Compliance (augex) – business-as-usual augex required to maintain power quality, which is mainly voltage compliance. We have classified this as DER capex.
- \$11.4 million in DER information and communication technology (ICT) capex, to allow more accurate monitoring and understanding of the constraints arising from network and DER operations

Our assessment

AusNet Services has not demonstrated that the full scope of the proposed Voltage Compliance, Hosting Capacity for DER and DER ICT capex are prudent and efficient. However, in the context of AusNet Services historic augex levels we are satisfied that the proportion of AusNet Services’ proposal that we have classified as DER management capex, forms part of a capex forecast that reasonably meets the capex criteria. We also acknowledge the stakeholder support for DER integration capex. The Customer Forum agreed to include DER due to increasing customer interest in DER and provided value for money for all customers.⁴⁶ We briefly discuss our views on the DER-driven augmentation and ICT programs.

DER-driven augmentation programs

We note AusNet Services agreed to a request by the Customer Forum to only recover its DER augex if it is spent to deliver benefits for customers. Any remaining funding will not become part of the RAB.⁴⁷

AusNet Services’ Voltage Compliance and Hosting Capacity for DER programs were proposed together and rely on the same supporting analysis. We reviewed these programs in conjunction with the Customer Supply Compliance program. We provide the following observations:

- AusNet Services’ Customer Forum has expressed support for the proposed DER expenditure, and has done so cognisant of the risk that forecasted benefits may not be realised. It was aware that the benefit of lower wholesale prices will not necessarily result in lower retail prices.⁴⁸ It also recognised that AusNet Services’

⁴⁶ AusNet Services Customer Forum, *AusNet Services customer forum final engagement report*, January 2020, p. 39, p. 43.

⁴⁷ AusNet Services Customer Forum, *AusNet Services customer forum final engagement report*, January 2020, p. 43 and AusNet Services, *Customer Forum Negotiations, Further information for the Customer Forum*, 3 December 2019, p. 6.

⁴⁸ AusNet Services Customer Forum, *AusNet Services customer forum final engagement report*, January 2020, p. 42.

business case relies on the mandated Victorian feed-in tariff (FiT), and any change to this figure would affect the business case.⁴⁹

- AusNet Services business case is based on the FiT and a 45-year net present value analysis. Several stakeholders raised concerns with using the FiT in the context of continued growth in solar PV uptake, and the likelihood of negative pool prices in Victoria based on the Queensland and South Australian experience.⁵⁰ We agree that AusNet Services' use of the 2019–20 FiT is problematic and likely overstates the economic benefits of pursuing network augmentation.
- Similar concerns were raised in response to our consultation paper on Assessing DER Integration Expenditure,⁵¹ in addition to a lack of consistency across distributors in valuing the benefits associated with investing in DER integration. In response, we and ARENA commissioned the value of DER (VaDER) study earlier this year.⁵² CSIRO and Cutler-Merz were engaged to conduct a study into potential methodologies for valuing DER and have extensively engaged with stakeholders, including AusNet Services, as part of the study.
- The final report of the VaDER study is due to us in early October 2020, which will help to address some of the stakeholder concerns outlined above. We will publish the final report as soon as practicable. We will then consider the report's recommendations and formally implement them as we consider appropriate as part of our DER integration expenditure guideline, now due for completion in 2021. Given the extensive stakeholder engagement in forming the VaDER study's recommendations, we anticipate that consumers will expect Victorian distributors to prepare their revised proposals in the spirit of these recommendations.
- In considering AusNet Services' ability to manage voltage in the context of the Solar Homes program, we compared AusNet Services' forecast of solar PV installations with the forecast the Victorian Department of Environment, Land, Water and Planning (DELWP) provided to us. AusNet Services' forecast of solar PV uptake is considerably lower, and would likely remain so even accounting for an adverse economic scenario due to COVID-19, which stakeholders had queried.⁵³
- AusNet Services explained that in managing overvoltage issues to date it is lowering set voltages and disabling its line drop compensation (LDC).⁵⁴ It could

⁴⁹ AusNet Services Customer Forum, *AusNet Services customer forum final engagement report*, January 2020, p. 40.

⁵⁰ Energy Australia, *Victorian electricity distribution determinations 2021–26 regulatory proposal*, June 2020, p. 14; CCP17, *Advice to the AER on the Victorian Electricity Distributors' Regulatory Proposals*, June 2020, p. 106; Energy Users' Association of Australia, *Submission: AusNet Services EDPR 2021–26*, June 2020, pp. 11–12.

⁵¹ See: <https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/assessing-distributed-energy-resources-integration-expenditure/initiation>.

⁵² See: <https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/assessing-distributed-energy-resources-integration-expenditure/consultation>.

⁵³ CCP17, *Advice to the AER on the Victorian Electricity Distributors' Regulatory Proposals*, June 2020, pp. 118–120; Energy Consumers Australia, *Victorian electricity distributors regulatory proposals 2021–26 submission*, June 2020, p. 18; Spencer and Co, *Advice to ECA on Victorian submissions*, June 2020, p. 16, AGL Energy, *Submission on Victorian electricity distribution determination 2021–26*, June 2020, p. 1.

⁵⁴ AusNet Services, *ASM 20-50 Steady state voltage compliance*, November 2019, pp. 14–15.

explore whether reducing set voltage and adjusting rather than disabling LDC would improve voltage outcomes and increase DER hosting capacity. During the day, when DER is exporting, a reduced set voltage will allow DER exports without exceeding high voltage requirements. When there is no DER exports and the whole load is being supplied from the zone substation, the LDC would increase the voltage at the zone substation and reduce occurrences of low volts.

- AusNet Services has recognised and accounted for interrelationships between some of its programs. Its forecast Customer Supply Compliance program is lower than historical levels, as it addresses issues that overlap with the Voltage Compliance program.⁵⁵ It also accounted for overlap between the DER auxex programs and repex. Expenditure under the Voltage Compliance and Hosting Capacity for DER programs is attributed to replacing live voltage regulators, and replacing bare conductor.⁵⁶

DER ICT program

AusNet Services justified the larger components of its proposed program, however it is unclear to us whether the smaller components are required:

- Spatial application realisation - actions involved in this activity are about increasing the functionality of the Spatial Data Management for Electricity system and decommissioning legacy components.⁵⁷ AusNet Services did not explain any link between this program and its ability to manage DER, it's also unclear how customers would benefit.
- Demand response management enhancement - AusNet Services expects that it will be required to develop demand response capabilities in order to meet the expectations of customers and policy makers over the next regulatory control period.⁵⁸ However it provided no evidence to support this expectation. It also has not tested the efficiency of this solution relative to other options it listed, including outsourcing demand management to a third party.
- Peer-to-peer trading – AusNet Services expects it will be required to interact with third parties wishing to facilitate peer to peer trading among its energy customers, and would require investment to facilitate efficient meter data transfer.⁵⁹ It is unclear to what extent regulated monopolies may be required to facilitate a commercial peer to peer market in the future. It is also unclear if it is appropriate that AusNet Services recover the cost of facilitating such services from regulated revenue.
- However, we do not consider an additional adjustment for DER integration capex is required as we consider our overall capex alternative is prudent and efficient.

⁵⁵ AusNet Services, *2021–26 Regulatory proposal – part III*, January 2020, p. 110.

⁵⁶ AusNet Services, *Top down adjustment – EDPR 2022–26 submission*, July 2019, p. 11.

⁵⁷ AusNet Services, *Technology program: Integration of Distributed Energy Resources*, January 2020. pp. 19–20.

⁵⁸ AusNet Services, *Technology program: Integration of Distributed Energy Resources*, January 2020. p. 20.

⁵⁹ AusNet Services, *Technology program: Integration of Distributed Energy Resources*, January 2020. pp. 23–24.

Augex

Augex is comprised of demand driven augex, REFCL and DER related capex. We have discussed any issues related to this category of capex in the sections above.

Non-network

We do not have material issues related to non-network capex with the exception of some DER specific ICT issues discussed above. As shown in Table 5.4 above, AusNet Services' non-network capex is 15 per cent below current period capex. We have not identified any material issues in this category of capex that requires us to adjust AusNet Services' overall capex.

However, as noted below, we do have concerns regarding some aspects of AusNet Services' non-network supporting information which we do not consider is material.

ICT

We have undertaken an assessment of AusNet Services' overall ICT proposal. Consistent with our ICT assessment we have split up our ICT assessment into recurrent and non-recurrent ICT. AusNet Services' \$167.8 million ICT forecast is comprised of \$65.2 million for recurrent ICT and \$102.6 million for non-recurrent ICT. AusNet Services' ICT forecast is 2.1 per cent below its current regulatory control period capex. We note AusNet Services reported a 12 per cent ICT underspend in its proposal. However, we have used the backcast annual RIN and the reset RIN for the purposes of our comparison.

We note AusNet Services' non-recurrent ICT has increased by \$35.5 million and its recurrent ICT has decreased by \$39.2 million relative to the current regulatory control period.

We have examined the drivers of the shift, including whether AusNet Services has classified its ICT program consistent with our ICT Guideline. We are satisfied that AusNet Services has accurately classified its recurrent and non-recurrent expenditure. Given the significant decrease in AusNet Services' recurrent ICT, we have not identified any issues with its recurrent ICT.

The main driver of AusNet Services' non-recurrent ICT are several programs that enhance its ICT capability and to provide efficiencies. Although, AusNet Services did not quantify the benefits of each productivity improving non-recurrent ICT program. We note that AusNet Services did propose a one per cent opex productivity forecast contingent on its ICT program.

Although we prefer that a distributor quantify its expected benefits, we acknowledge that from an overall level, AusNet Services' ICT program is below historic costs and that it is contributing to productivity gains in its opex forecast.

We have also identified an issue with AusNet Services' cyber security capex. The main driver of AusNet Services' cyber security capex is that it is required to reach Maturity Indicator Level (MIL) 3.⁶⁰ We consider MIL2 is sufficient for its distribution network. A majority of its capex is related to reaching MIL3. We do not consider this is reasonable. We express the same concerns with AusNet Services cyber security opex step change. For more information for why consider cyber security capex is not reasonable see opex attachment 6.

However, we do not consider an additional adjustment for cyber security capex is required as we consider our overall capex substitute is reasonable.

Other non-network

For the remaining non-network capex, AusNet Services originally proposed \$56.8 million. It then identified an error in its fleet forecast and reduced fleet capex by \$5.5 million for a total of \$51.3 million in other non-network capex.

We have identified no issues with AusNet Services' overall other non-network capex.

We note AusNet Services' forecast is materially below its current period capex of \$93.9 million. Some of this is due to a change in capitalisation policy which resulted in \$33.0 million of leases that were previously classified as opex. This capitalisation change has also resulted in forecast capitalised leases being included as part of AusNet Services' property forecast.

We also note that innovation was part of the negotiations with AusNet Services' Customer Forum. We understand the projects are focussed on unlocking the benefits of the energy system transformation and that there would be an independent Innovation Advisory Committee that will evaluate and prioritise the innovation projects that best reflect customer preferences. We also note that any unspent innovations expenditure will not be a part of the CESS.⁶¹

Given the overall declining trend in other non-network capex, we do not consider any adjustment would be required for this category of expenditure.

- The interrelationships between the total capex forecast and other constituent components of the determination, such as forecast opex and STPIS interactions.⁶²

⁶⁰ AusNet Services, *2021–26 Regulatory proposal – part III*, January 2020, p. 145.

⁶¹ AusNet Services, *2021–26 Regulatory proposal – part III*, January 2020, p. 177.

⁶² NEL, s. 16(1)(c).

A Repex modelling

This attachment details the repex modelling results for AusNet Services, including the specific adjustments applied to it. The attachment also describes more generally the repex modelling approach for the Victorian distributors.

Repex model results and engagement

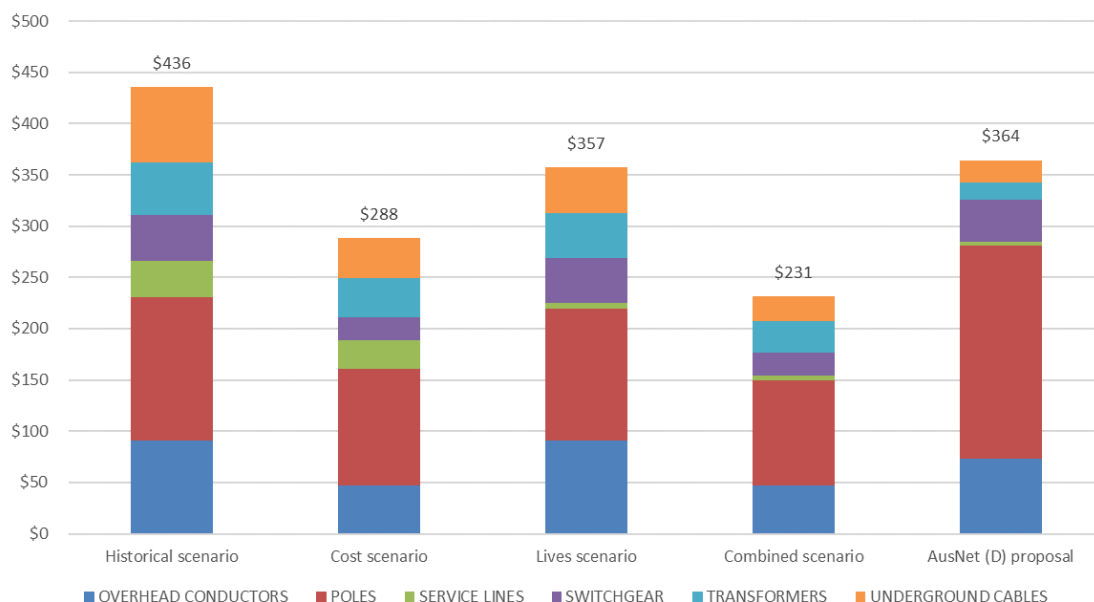
Consistent with our standard approach, repex modelling is a top-down assessment tool. It is one of several techniques we apply to assess a distributor's repex forecast against the capex criteria.

We have engaged with AusNet Services on our repex modelling throughout the regulatory process, including multiple information requests, and meetings.⁶³

AusNet Services responded promptly after each meeting and provided analysis and rationale to support specific modelling assumptions. Following our engagement with AusNet Services, we have made a number of adjustments, described below, to the inputs consistent with our standard approach.

Figure A.1 shows the repex model outcomes. AusNet Services' modelled repex forecast of \$364 million is \$7 million higher than our repex model threshold – the lives scenario – of \$357 million.

Figure A.1 AusNet Services' repex modelling scenarios



⁶³ We met with AusNet Services to discuss the repex modelling approach for underground cables (10 August 2020) and to discuss preliminary repex modelling results (2 July 2020).

Source: AER Analysis

Notes: Historical scenario uses historical unit costs and calibrated expected asset lives. Cost scenario uses comparative unit costs⁶⁴ and calibrated expected replacement lives. Lives scenario uses historical unit costs and comparative expected replacement lives.⁶⁵ Combined scenario uses comparative unit costs and comparative expected replacement lives.

With the exception of poles, the repex modelling results highlight that the majority of its asset groups are in line with, or lower than, what the model predicts. As forecast poles was higher than what the model predicts, we conducted a bottom-up review of forecast poles repex to understand the drivers of the increase. We questioned the efficiency of its forecast unit rates. AusNet Services explained that its forecast poles unit rates includes service line costs, as it replaces services lines alongside poles.⁶⁶ Additionally, AusNet Services' forecast pole unit rate reflects its current asset management practice of replacing a portion of its wooden pole population with concrete poles.

Our bottom-up review has identified a risk modelling assumption that was likely to overstate the replacement pole volumes.⁶⁷ We raised our concern with AusNet Services in a meeting on the 7 August 2020. In response, AusNet Services acknowledged our concern and subsequently reduced its forecast pole replacement volumes by 7 per cent, resulting in a decrease of \$13.3 million.

Even though the poles' forecast remains higher than the model predicts as shown in Figure A.1, the overall modelled repex forecast is lower than the repex model threshold after consideration of the \$13.3 million reduction in poles. On balance, we are satisfied that AusNet Services' forecast modelled repex of \$351.0 million, forms part of a total capex forecast that reasonably reflects the capex criteria.

General repex modelling approach for the Victorian electricity distribution determinations

Our assumptions on calibration period and the modelling of the transition from calendar year to financial year are consistently applied for all Victorian distributors.

Transition from calendar year to financial year

The Victorian regulatory control periods are transitioning from a calendar to financial year basis. We have relied on as reported calendar year as our input data.⁶⁸ To estimate and compare the forecast repex requirements in financial year basis, we have taken the average of the 2021 and 2026 calendar years, along with the full calendar year forecasts for 2022, 2023, 2024 and 2025. This approach ensures that we capture

⁶⁴ Minimum of a distributor's historical unit costs, forecasted unit costs and the median unit costs across the NEM.

⁶⁵ Maximum of distributor's calibrated replacement life and the median replacement life across the NEM.

⁶⁶ AusNet Services, *Information request 25*, May 2020; and AusNet Services, *Email Re: AER/AusNet meeting - repex*, 13 August 2020.

⁶⁷ AusNet Services, *Information request 21 – Q1*, May 2020.

⁶⁸ Data reported as part of the annual category analysis RINs.

a distributor's most recent replacement practices via its most recent actual reported and audited information.

Calibration period

The calibration period refers to the historical time period used to analyse a distributor's historical replacement practices.⁶⁹ For the Victorian electricity distribution determinations, we have relied on the four most recent calendar years (2016 to 2019 inclusive) as our calibration period. Due to the six-month transition from calendar year basis to financial year basis, we have four full years of current period data available for the draft decision.

Specific modelling adjustments for AusNet Services

In June 2020, we provided AusNet Services with our preliminary modelling results. AusNet Services highlighted a number of issues with these results. We discuss AusNet Services' questions, suggestions and our response below.

Staked wooden poles

AusNet Services noted that it had replaced significantly more staked wooden poles per year, than the number assumed in the repex model calibration. AusNet Services sought clarification on the cause of this discrepancy.

Historically, in the absence of actual data, we had an estimating methodology to calculate staked pole replacement with new pole volumes. We have re-assessed the information available to us,⁷⁰ and updated the pole staking input with actual data of replacement of staked wooden poles from 2016–2019.

Concrete poles

AusNet Services noted that its concrete pole replacement volumes reflect that a portion of its wooden poles are replaced with concrete poles, and sought clarification on how the repex model accounted for this practice.

We agree with AusNet Services' approach in dealing with concrete poles. Consistent with AusNet Services' methodology in the execution of the repex model, we calculated unit rates based on the ratio of replacement volumes reported for wooden and concrete poles at each voltage level for the past four years.⁷¹ We also blended the calibration volumes for wooden poles to take into account the weighted average of concrete pole and wooden pole replacement volumes.

⁶⁹ The time period that is most representative of a distributor's expected future repex requirements is selected as the calibration period. In doing so, we have regard to changes in legislative obligations or other factors that may affect our analysis or a distributor's historical replacement practices. AER, *Review of repex modelling assumptions*, December 2019, p. 7.

⁷⁰ AusNet Services, *Workbook 2 - New CY Historical 2009–18 - 310120 - PUBLIC*, January 2020.

⁷¹ AusNet Services, *Information request 25 – Q1*, May 2020.

Underground Cables

AusNet Services noted that the model output of its underground cable replacement was significantly below its historical average. Following our engagement with AusNet Services, we have identified that the discrepancy was a result of an incorrect unit of measurement in its historical replacement volumes (AusNet Services reported its underground cables in the number of work orders instead of kilometres).⁷² In order to estimate historical volumes, we have relied on forecast unit rates and historical expenditure. We relied on the estimated historical volumes as an input for calibrating the 22kV cables, which was the only underground cable category with forecast repex.⁷³

Asset refurbishments

AusNet Services noted that it reported transformer and switchgear refurbishments as 'other' to differentiate it from replacement. This has resulted in its switchgear and transformer unit rates differing from reporting by other distributors in the NEM. AusNet Services submitted that refurbishments should be included in the modelling, as its future asset refurbishments are included in its forecast expenditure against transformers and switchgear, which would mean that the historical calibration is not representative of the forecast period.

Consistent with our adjustment in the 2015–20 SA Power Networks draft decision to reflect transformer refurbishment, we have blended transformer refurbishment in AusNet Services' repex modelling. However, we do not agree with blending of switchgear 'other', as the 'other' asset category does not specifically contain refurbishments only, but also includes expulsion drop out fuses, a unique asset. Therefore, the allocation of refurbishment is not easily discernible. Therefore we have excluded 'other' switchgear from the calibration period.⁷⁴

⁷² AusNet Services, *Information request 01 – Q3c*, March 2020.

⁷³ AusNet Services, *Email - AER modelling adjustments to underground cables*, 11 August 2020.

⁷⁴ AusNet Services, *Information request 06 – Q3*, April 2020.

B Ex-post prudency and efficiency review

We are required to provide a statement on whether the roll forward of the RAB from the previous period contributes to the achievement of the capital expenditure incentive objective.⁷⁵ The capital expenditure incentive objective is to ensure that, where the RAB is subject to adjustment in accordance with the NER, only expenditure that reasonably reflects the capex criteria is included in any increase in the value of the RAB.⁷⁶

As the Victorian distributors are moving from calendar regulatory years to financial regulatory years, this ex-post assessment will apply to the 2014, 2015, 2016, 2017, 2018 and 2019 calendar regulatory years. The NER require that the last two years of the current regulatory control period are excluded from past capex ex-post assessment. The ex-post prudency and efficiency will exclude calendar regulatory year 2020 and the first half of calendar year 2021.⁷⁷

The NER states that we may only make a determination to reduce inefficient past capex if any one of the following requirements is satisfied:

1. The distributor has spent more than its capex allowance (the 'overspending' requirement).
2. The distributor has incurred capex that represents a margin paid by the distributor, where the margin referable to arrangements that, in our opinion, do not reflect arm's length terms (the 'margin' requirement).
3. Where the distributor's capex includes expenditure that should have been treated as opex (the 'capitalisation' requirement).⁷⁸

B.1 Draft decision

We are satisfied that AusNet Services' capital expenditure in the 2014 to 2019 regulatory years should be rolled into the RAB.

B.2 Reasons for draft decision

We have reviewed AusNet Services' capex performance for the 2014 to 2019 regulatory years. This assessment has considered AusNet Services' actual capex relative to the regulatory allowance provided and the incentive properties of the regulatory regime for a distributor to minimise costs. AusNet Services' incurred total capex is below its forecast regulatory allowance for those years.

⁷⁵ NER, cl. 6.12.2(b).

⁷⁶ NER, cl. 6.4A(a).

⁷⁷ The first half of the calendar year will be considered a regulatory year for this purpose.

⁷⁸ NER, cl. S6.2.2A(b) to (i).

We have also had regard to some measures of input cost efficiency as published in our latest annual benchmarking report.⁷⁹ We recognise that there is no perfect benchmarking model, but our benchmarking models are robust measures of economic efficiency and we can use this measure to assess and compare a distributor's efficiency.

The results from our most recent benchmarking report highlights that AusNet Services decreased to the eleventh most efficient distributor out of the 13 NEM distributors with a multilateral total factor productivity (MTFP) score of 0.941 for 2018⁸⁰, which is a 2.9 per cent decrease from its 2017 MTFP value. While this provides relevant context, we have not used our benchmarking results in a determinative way for this capex draft decision, including in relation to this ex-post prudency and efficiency review.

Overall, our analysis has revealed that the 'overspending', 'margin' and 'capitalisation' requirements are not satisfied for AusNet Services.⁸¹ Therefore, we are satisfied that the entirety of AusNet Services' capital expenditure in the 2014 to 2019 regulatory years should be rolled into the RAB.

⁷⁹ AER, *Annual benchmarking report: Electricity distribution network service providers*, November 2019.

⁸⁰ Economic Insights, *Economic Benchmarking Results for the Australian Energy Regulator's 2019 DNSP Annual Benchmarking Report*, October 2019, p.17.

⁸¹ NER, cl. S6.2.2A(c).

Shortened forms

Shortened form	Extended form
ACS	alternative control services
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AMI	advanced metering infrastructure
augex	augmentation expenditure
capex	capital expenditure
CCP17	Consumer Challenge Panel (sub-panel 17)
CESS	capital expenditure sharing scheme
CPI	Consumer Price Index
DELWP	Department of Environment, Land, Water and Planning
DER	distributed energy resources
ECA	Energy Consumers Australia
ESV	Energy Safe Victoria
EUAA	Energy Users' Association of Australia
FiT	feed-in tariff
HIA	Housing Industry Association
ICT	information and communications technology
LDC	line drop compensation
MIL	Maturity Indicator Level
MTFP	multilateral total factor productivity
NEL	National Electricity Law
NEO	National Electricity Objective
NER	National Electricity Rules
PV	photovoltaic
RAB	regulatory asset base
repex	replacement expenditure
REFCL	rapid earth fault current limiter
RIN	regulatory information notice

Shortened form	Extended form
SAIDI	system average interruption duration index
SAIFI	system average interruption frequency index
SCADA	supervisory control and data acquisition
SCS	standard control services
STPIS	service target performance incentive scheme
VaDER	Value of DER
VCO	Victorian Community Organisations
WPI	wage price index