



# **FINAL DECISION**

## **United Energy Distribution Determination 2021 to 2026**

### **Attachment 5 Capital expenditure**

April 2021

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## Note

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

The final 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 12 – Customer Service Incentive Scheme

Attachment 13 – Classification of services

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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). 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 regulations, and to maintain the safety, reliability, quality, security of its network (the capex objectives).<sup>1</sup>

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).<sup>2</sup> 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)).<sup>3</sup>

If we are not satisfied, we must set out the reasons for this decision and a substitute estimate of the total of the distributor's required capex for the regulatory control period that we are satisfied reasonably reflects the capex criteria, taking into account the capex factors.<sup>4</sup>

The *AER capital expenditure assessment outline* explains our and distributors' obligations under the National Electricity Law and Rules (NEL and NER) in more detail.<sup>5</sup> It also describes the techniques we use to assess a distributor's capex proposal against the capex criteria and objectives. Appendix A outlines further detailed analysis of our final decision.

### 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

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<sup>1</sup> NER, cl. 6.5.7(a).

<sup>2</sup> NER, cl. 6.5.7(c).

<sup>3</sup> NEL, ss. 7, 16(1)(a).

<sup>4</sup> NER, 6.12.1(3)(ii).

<sup>5</sup> AER, *Capex assessment outline for electricity distribution determinations*, February 2020.

services will determine their returns in the short term. If distributors reduce their costs, they share the savings 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.

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. 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 at least efficient costs. As noted previously, distributors may spend more or less than our forecast in response to unanticipated changes.

## 5.1 Final decision

We do not accept United Energy's revised capex forecast of \$944.6 million.<sup>6</sup> We are not satisfied that its total net capex forecast reasonably reflects the capex criteria. Our substitute estimate of \$902.7 million is 4 per cent below United Energy's revised forecast. We are satisfied that our substitute estimate reasonably reflects the capex criteria. Table 5.1 outlines our final decision.

**Table 5.1 Final decision on United Energy's total net capex forecast (\$ million, 2020–21)**

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
United Energy's revised proposal	231.9	191.0	175.4	178.5	167.8	944.6
AER final decision	224.7	183.3	167.7	169.7	157.3	902.7
Difference (\$)	7.2	7.7	7.7	8.8	10.5	41.9
Difference (per cent%)	3	4	4	5	6	4

Source: United Energy's revised post-tax revenue model (PTRM) and AER analysis.

Note: Numbers may not sum due to rounding.

## 5.2 United Energy's revised proposal

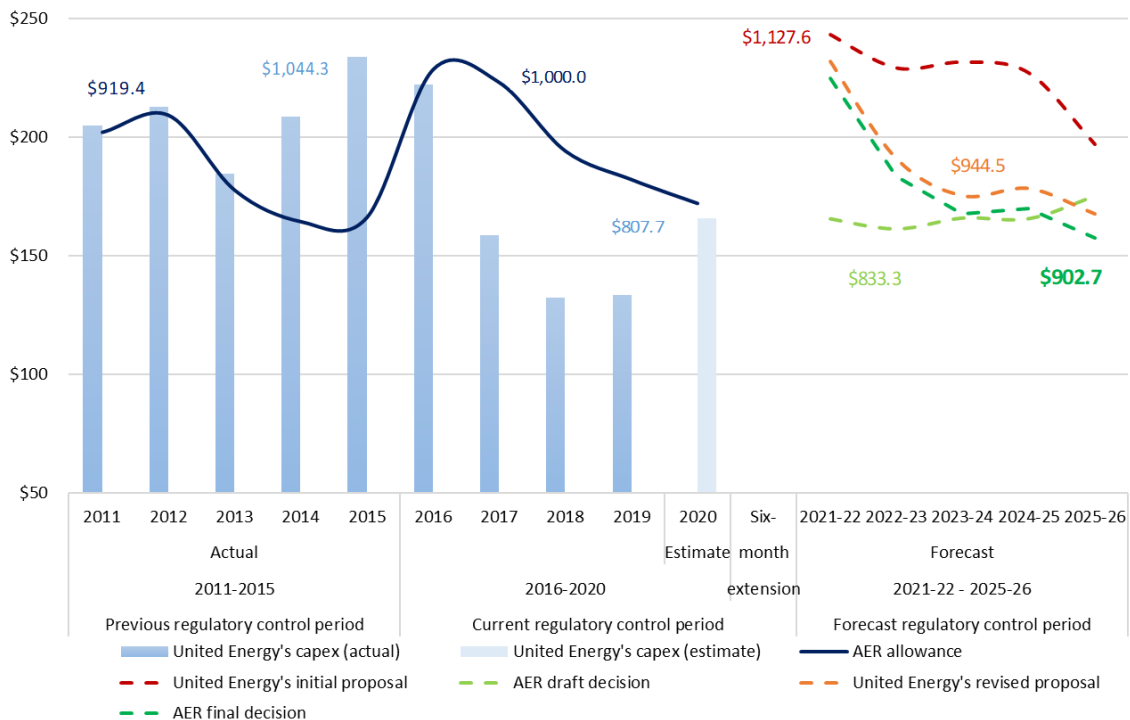
United Energy's revised net capex forecast for the 2021–26 regulatory control period is \$944.6 million. This is 17 per cent higher than its actual capex of \$807.7 million over

<sup>6</sup> We present all dollar amounts in real \$2020–21 unless otherwise stated.

the current regulatory control period.<sup>7</sup> In its revised proposal, United Energy accepted some aspects of our draft decision and reduced its forecast capex by 16 per cent relative to its initial proposal.<sup>8</sup> Figure 5.1 outlines United Energy's historical capex performance against its initial and revised proposals, and our draft and final decisions.

United Energy's revised gross capex forecast is \$1120.8 million and includes \$171.9 million for capital contributions and \$4.4 million for asset disposals.

**Figure 5.1 United Energy's historical vs forecast capex snapshot (\$ million, 2020–21)**



Source: United Energy's revised 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 final decision

We are not satisfied that United Energy's total capex forecast reasonably reflects the capex criteria. We are therefore required to set out a substitute estimate.<sup>9</sup> We are satisfied that our substitute estimate represents a total capex forecast that reasonably

<sup>7</sup> In this attachment, we compare forecast capex with actual capex in the current regulatory control period; i.e. calendar years 2016 to 2019 pro-rated to five years.

<sup>8</sup> Forecast net capex in United Energy's initial proposal was \$1127.6 million excluding the environmental capex program, which it withdrew after the initial proposal.

<sup>9</sup> NER, cl. 6.12.1(3)(ii).

reflects the capex criteria and forms part of an overall distribution determination that contributes to achieving the NEO to the greatest degree.

In coming to our decision, we asked United Energy many questions across multiple information requests. United Energy was receptive to our questions and in most cases provided useful responses within the requested timeframes. We acknowledge that our questions are likely to have presented additional resourcing challenges, particularly due to COVID-19, and appreciate United Energy's cooperation and assistance.

We typically analyse a distributor's total capex forecast from a top-down 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. We outline key aspects of our top-down assessment of United Energy's revised proposal below.

### **Net capex trend**

While we acknowledge United Energy's efforts to reconsider its forecast in light of the concerns raised about its initial proposal in our draft decision, we would encourage it and other distributors to include more substantiated capital expenditure requirements in its initial proposal. United Energy's initial forecast was 40 per cent above actual capex in the current regulatory control period and there was insufficient evidence to support its forecast.

Despite a reduction from its initial proposal, United Energy's revised capex forecast is still 17 per cent higher than the current regulatory control period. The capital expenditure sharing scheme (CESS) was applied in the current regulatory control period. As a result, actual capex is a strong indicator of efficient costs and we therefore place significant weight on a distributor's revealed actual capex.

In addition to a higher forecast, United Energy's capex underspend in the current regulatory control period was approximately 22 per cent. This resulted in a significant CESS payment of \$56.2 million. This highlights that United Energy has demonstrated in the current regulatory control period that it can manage and maintain its network within the allowances provided.

### **Stakeholder submissions**

The Consumer Challenge Panel – sub-panel 17 (CCP17) is 'supportive of the United Energy revised proposal' but it notes, 'The current levels of historical capex appeared sufficient to support the safe and reliable provision of network services.' It highlighted that the large underspend in the current regulatory control period 'demonstrates United Energy's ability to effectively realise efficiencies from their capital programmes.'<sup>10</sup>

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<sup>10</sup> CCP17, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, pp. 118–119.



Energy Consumers Australia's (ECA) consultant Spencer&Co submit that, with the exception of United Energy's pole replacement program, United Energy's revised capex forecast is more in line with its historical expenditure. Spencer&Co's advice to ECA indicates that 'many of the issues proposed by...United Energy appear reasonable, with only some more minor issues being recommended for further review.'<sup>11</sup>

The Victorian Community Organisations (VCO) are largely supportive of our draft decision, which 'address stakeholder concerns about a continually-growing RAB.' VCO's consultant Headberry Partners finds that United Energy's revised proposal for capex increases is 'likely to exceed requirements.'<sup>12</sup>

In addition to our top-down review, we assessed the additional bottom-up material that United Energy provided to support its revised capex forecast. Our assessment highlighted that United Energy's revised replacement capital expenditure (repex), augmentation capital expenditure (augex) and capitalised overheads forecasts would not form parts of a total capex forecast that reasonably reflects the capex criteria, having regard to the capex factors. Table 5.2 outlines the capex amounts by driver that we have included in our substitute estimate of \$902.7 million.

**Table 5.2 Capex driver assessment (\$ million, 2020–21)**

Driver	United Energy's revised proposal	AER final decision	Difference (\$)	Difference (per cent%)
Repex	344.4	317.3	-27.1	-8
DER capex	39.7	39.9	0.3	1
Augex	96.1	90.2	-5.9	-6
Gross connections	286.0	287.9	1.8	1
ICT capex	164.2	164.4	0.2	0
Other non-network capex	82.3	82.3	0.0	0
Capitalised overheads	108.1	96.7	-11.4	-11
<b>Gross capex</b>	<b>1120.8</b>	<b>1078.8</b>	<b>-42.1</b>	<b>-4</b>
less capital contributions	171.9	171.7	-0.2	0
less asset disposals	4.4	4.4	0.0	0
<b>Net capex</b>	<b>944.6</b>	<b>902.7</b>	<b>-41.9</b>	<b>-4</b>

Source: United Energy's revised proposal and AER analysis.

<sup>11</sup> Spencer&Co, *Report to ECA – a review of Victorian Electricity Distributors' revised proposals 2021–26*, January 2021, pp. 4–5.

<sup>12</sup> VCO, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p. 4 and p. 6.

Note: Numbers may not sum due to rounding. Modelling adjustments are incorporated into each line item and relate to United Energy's Consumer Price Index (CPI) and real price escalation assumptions.

Table 5.3 summarises the reasons for our substitute estimate by capex driver. This reflects the way we have assessed United Energy's revised total capex forecast. Our findings on each capex driver are part of our broader analysis and should not be considered in isolation. We do not approve an amount of forecast expenditure for each individual capex driver. However, we use our findings on the different capex drivers to assess a distributor's proposal as a whole and arrive at a substitute estimate for total capex where necessary. In addition, as noted above, our decision on total capex does not limit a distributor's actual spending.

We provide detailed reasons for our findings for each capex driver in Appendix A.

**Table 5.3 Summary of our findings and reasons**

Issue	Findings and reasons
Repex	We are satisfied with most aspects of the revised repex forecast, but we do not consider that United Energy's forecast for its wood poles program or proactive service lines replacement program is prudent and efficient.
DER capex	United Energy accepted our draft decision on distributed energy resources (DER) integration capex. United Energy stated that it would develop a unified approach to solar enablement and digital network investment as part of a broad future network strategy that accommodates customer choices for all forms of DER.
Augex	United Energy largely accepted our draft decision on traditional augex. Our final decision reallocates a portion of two of United Energy's augex programs to alternative control services (ACS) capex, also consistent with our draft decision.
Connections capex	United Energy has provided sufficient supporting material to justify its revised forecast.
ICT capex	United Energy accepted the majority of our draft decision for information and communications technology (ICT) capex, including our top-down trend-based assessment of recurrent ICT capex and our minor adjustments to its intelligent engineering program. Our assessment focused on United Energy's re-proposed smaller customer enablement program and a new field service management solution program. We accept United Energy's revised ICT capex forecast and have included this forecast in our substitute estimate of total capex.
Other non-network capex	While United Energy's revised proposal is a large step up from our revised proposal, it provided sufficient supporting material to justify its forecast.
Capitalised overheads	Our final decision includes capitalised overheads based on actual expenditure over the current regulatory control period. We have adjusted for the rate of change and the difference in actual and forecast direct capex.

Issue	Findings and reasons
	United Energy is not required to forecast its capitalised overheads on the same basis as expensed overheads. United Energy has also not accounted for the relationship between direct capex and capitalised overheads.
Modelling adjustments	Modelling adjustments relate to United Energy's CPI) and real price escalation assumptions. We have updated United Energy's labour price growth to be consistent with our operating expenditure (opex) decision, as set out in attachment 6. DAE's real labour escalation forecast for 2021–22 is a nine-month forecast to account for the transition from calendar to financial year in the opex rate of change. We have amended this forecast to reflect a 12-month figure to be consistent with United Energy's capex model.
Asset disposals	We accept United Energy's revised forecast for asset disposals.

Based on both our top-down and bottom-up assessments, we are not satisfied that United Energy's revised capex forecast reasonably reflects the capex criteria. We are satisfied our substitute estimate reasonably reflects the capex criteria, as our substitute estimate is more in line with United Energy 's actual capex over the current regulatory control period. In addition, stakeholders acknowledged that while many aspects of United Energy's revised proposal were reasonable, other aspects required further review.

## A Capex driver assessment

This appendix outlines our detailed analysis of United Energy's capex driver forecasts for the 2021–26 regulatory control period. These categories are repex, DER integration capex, augex, connections capex, ICT capex, other non-network capex and capitalised overheads.

We used various qualitative and quantitative assessment techniques to assess the different elements of United Energy's revised proposal to determine whether it reasonably reflects the capex criteria. More broadly, we seek to promote the NEO and take into account the revenue and pricing principles set out in the NEL.<sup>13</sup> In particular, we take into account whether our overall capex forecast will provide United Energy with a reasonable opportunity to recover at least the efficient costs to:

- provide direct control network services
- comply with its regulatory obligations and requirements.<sup>14</sup>

When assessing capex forecasts, we also consider:

- The prudence and efficiency criteria in the NER are complementary. Prudent and efficient expenditure reflects the lowest long-term cost to consumers to achieve the expenditure objectives.<sup>15</sup>
- Past expenditure was sufficient for the distributor to manage and operate its network in previous control periods, in a manner that achieved the capex objectives.<sup>16</sup>
- The capex required to provide for a prudent and efficient distributor's circumstances to maintain performance at the targets set out in the service target performance incentive scheme (STPIS).<sup>17</sup>
- The annual benchmarking report, which includes total cost and overall capex efficiency measures, and considers a distributor's inputs, outputs and its operating environment.
- The interrelationships between the total capex forecast and other constituent components of the determination, such as forecast opex and STPIS interactions.<sup>18</sup>

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<sup>13</sup> NEL, ss. 7, 7A and 16(1)-(2).

<sup>14</sup> NEL, s. 7A.

<sup>15</sup> AER, *Better regulation: Expenditure forecast assessment guideline for electricity distribution*, November 2013, pp. 8–9.

<sup>16</sup> AER, *Better regulation: Expenditure forecast assessment guideline for electricity distribution*, November 2013, p. 9.

<sup>17</sup> The STPIS provides incentives for distributors to further improve the reliability of supply only where customers are willing to pay for these improvements.

<sup>18</sup> NEL, s. 16(1)(c).

## A.1 Repex

Repex must be set at a level that allows distributors at least efficient costs to meet the capex objectives. Replacement can occur for a variety of reasons, including when:

- an asset fails while in service or presents a real risk of imminent failure
- a condition assessment determines that it is likely to fail soon or degrade in performance, such that it does not meet its service requirement and replacement is the most economic option<sup>19</sup>
- the asset does not meet the relevant jurisdictional safety regulations and can no longer be safely operated on the network
- the risk of using the asset exceeds the benefit of continuing to operate it on the network.

The majority of network assets will remain in efficient use for far longer than a single five-year regulatory control period (many network assets have economic lives of 50 years or more). As a result, a distributor will only need to replace a portion of its network assets in each regulatory control period.

### A.1.1 Final decision

We do not accept that United Energy's revised repex forecast would form part of a total capex forecast that reasonably reflects the capex criteria. We have included \$317.3 million for repex in our substitute estimate of total capex. This is \$27.1 million or 8 per cent lower than United Energy's revised forecast. We are satisfied that our substitute estimate forms part of a total capex forecast that reasonably meets the capex criteria.

### A.1.2 United Energy's revised proposal

United Energy included \$344.4 million for forecast repex in its revised proposal for the 2021–26 regulatory control period. In response to stakeholder feedback, it stated that 'we have sought to address these [stakeholder reservations], in our revised proposal, including the removal of some programs, and the development of additional supporting material for others'.<sup>20</sup>

United Energy accepted most elements of our draft decision on repex, but did not accept our decision on wood poles, zone substation (ZS) transformers and service lines repex. Additional information provided by United Energy in its revised proposal justifies its proposed repex for ZS transformers. However, we do not consider that

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<sup>19</sup> A condition assessment may relate to the assessment of a single asset or a population of similar assets. High-value/low-volume assets are more likely to be monitored on an individual basis, while low-value/high-volume assets are more likely to be considered from an asset category-wide perspective.

<sup>20</sup> United Energy, *Revised regulatory proposal 2021–26*, January 2021, December 2020, p. 67.

United Energy's forecast for its wood poles program or proactive service lines replacement program is prudent and efficient.

### A.1.3 Reasons for final decision

United Energy accepted most elements of our draft decision on repex. As a result, its revised forecast is materially lower than its initial repex forecast. We commend United Energy for its consideration of the concerns we raised in the draft decision and the concerns of stakeholders regarding affordability and better demonstrating the need for forecast investment.

In coming to our position on United Energy's wood poles, service lines, and its ZS transformer program, we have considered the additional supporting evidence, and concerns raised by stakeholders. Based on the information before us, we are not satisfied that the amount of repex proposed by United Energy is required to manage its network over the 2021–26 regulatory control period. We expect that the repex we have provided in our final decision will allow United Energy to achieve and maintain sustainable reliability and safety outcomes at an acceptable cost to consumers.

#### Wood poles

United Energy's revised proposal included \$79.9 million (\$2020–21) for wood poles repex. This is 11 per cent lower than its initial proposal and 50 per cent higher than our draft decision. It re-proposed its condition-based wood pole program and provided a pole condition model to show that its wood pole population condition is deteriorating to support the upward trend in forecast intervention volumes.

We appreciate United Energy's efforts to respond to our concerns raised in the draft decision. In our draft decision, we noted the lack of quantitative analysis for some of its poles programs, and that its low pole failure rates did not support a material increase in forecast expenditure. For its condition-based wood poles program, United Energy did not provide sufficient evidence to support its application of an upward linear trend based on nine years of historical volumes to forecast its condition-driven volumes.

Stakeholders including the CCP17 and VCO express support for our draft decision on wood poles.<sup>21</sup> VCO questions the proposed repex, submitting that United Energy has the option to spend more than the AER allowance if required, and can include capex overspends into the regulatory asset base if the overspend is prudent.<sup>22</sup>

Based on the information before us, we remain of the view that United Energy has not provided sufficient evidence to support its forecast 50 per cent increase in wood poles repex relative to the current regulatory control period. Its forecast intervention volumes are not prudent or efficient because:

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<sup>21</sup> CCP17, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p.121.

<sup>22</sup> VCO, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p.74.

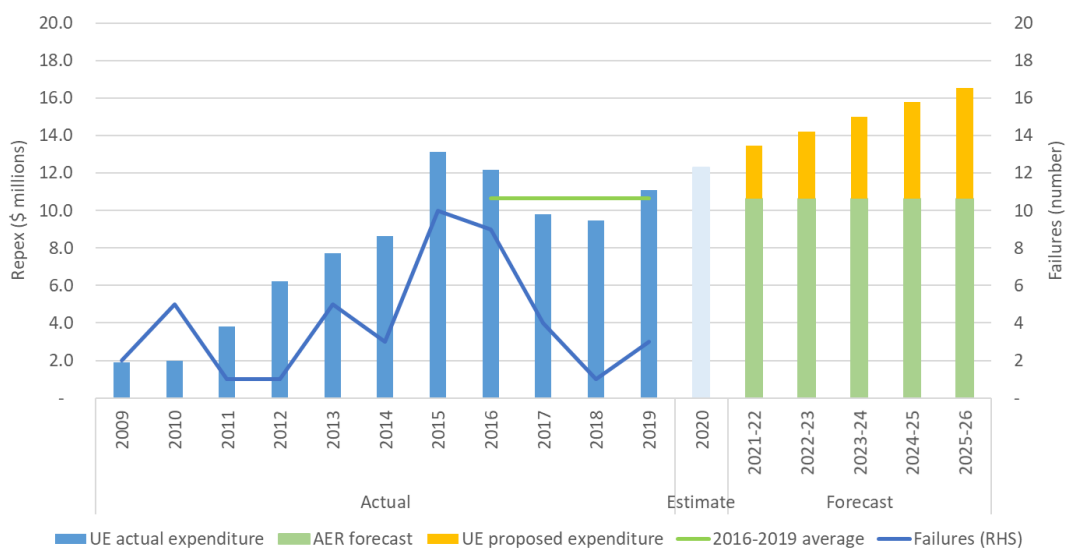
- Our assessment of United Energy’s supporting model is that it does not substantiate its revised wood pole forecast or that its wood pole population is deteriorating at the rate that it claims. We have several concerns with the mechanics of the model, its underlying assumptions and data.
- United Energy has not provided adequate economic or risk analysis to support the increase of 50 per cent from the current regulatory control period.
- United Energy has one of the lowest pole failure rates in the national electricity market (NEM) with no evidence of an increasing trend in poles becoming unserviceable over the current regulatory control period, which suggests that the current level of repx is adequate to maintain network safety and reliability.
- United Energy’s wood poles forecast is 54 per cent higher than our modelled repx threshold. This suggests that its forecast may be higher than is prudent and efficient and that a forecast closer to actual capex in the current regulatory control period may be more appropriate.

We have included \$53.2 million in our substitute estimate of total capex. Our estimate is in line with current regulatory period repx and maintains our draft decision. We expect this amount is sufficient for United Energy to maintain its network given that it has delivered reliable services with very low failure rates in the current regulatory control period with this level of funding.

### Trend analysis

Figure A.1 shows United Energy’s wood pole repx since 2009, its forecast repx for 2021–26, as well as our forecast. United Energy is forecasting an upward trend in expenditure for 2021–26 relative to the current regulatory control period.

**Figure A.1 Historical vs forecast repx (\$ million, 2020–21)**



Source: United Energy, *Revised regulatory proposal 2021–26*, January 2021 and AER analysis.

Historically, wood poles repex peaked in 2015, and has remained relatively stable over the current regulatory control period. In its submission, the VCO notes:<sup>23</sup>

..the historical approach to pole replacement has delivered the needed reliability (United's historic program was stated to be "world class" by United in its revised proposal) yet [United] persists in providing a view that historic performance is not adequate. Until [United] can clearly show that the AER draft decision will deliver less reliability than to assertions of [United] in regard to wood pole replacement cannot be seen to be more persuasive than the arguments of the AER for its view based on historic replacement rates.

### United Energy's pole condition model

In response to our draft decision, United Energy submitted that it considers failure rates as a lagging indicator that reflects the adequacy of inspection and asset management practices rather than a predictor of future intervention volumes.<sup>24</sup> The CCP17 and the ECA also agree that failure rates reflect inspection and asset management practices.<sup>25</sup> We agree that failure rates are a lagging indicator and provide information about inspection and asset management practices. However, we also consider failure rates are a useful and relatively reliable indicator of past and future repex requirements, particularly in the absence of a reliable leading indicator.

United Energy also stated that the driver of its intervention volumes is pole condition and its pole condition data and observed decay rate analysis support the increased trend reflected in its condition-driven forecast.<sup>26</sup> We agree that understanding changes in pole condition is useful to assess the prudence and efficiency of United Energy's forecast. However, we found that United Energy's model does not support its forecast intervention volumes over the 2021–26 regulatory control period. We have several concerns with the mechanics of the pole condition model, its underlying assumptions and data that lead us to conclude that United Energy has overstated the risk, and therefore the required repex to mitigate that risk, in the 2021–26 regulatory control period.

### United Energy's assumed pole decay rate (average 3mm per annum) is overstated

United Energy used 2003 to 2014 pole condition data to model interventions in the period 2015–19 at a range of decay rates. It then selected the decay rate in which modelled interventions in 2015–19 were closest to actual intervention volumes—this occurs at an average decay rate of 3 millimetres (mm) per annum.

We have concerns that this methodology overstates the degree of pole decay:

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<sup>23</sup> VCO, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p.75.

<sup>24</sup> United Energy, *Revised regulatory proposal 2021–26*, p. 39.

<sup>25</sup> CCP17, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p.121; and ECA, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p.10.

<sup>26</sup> United Energy, *Revised regulatory proposal 2021–26*, p. 37.



- Regardless of actual observed decay rates, the calibration process of the model adjusts the decay rate back to around 3mm a year making the actual observed decay rates irrelevant to the model output.
- When we reviewed United Energy’s own inspection pole condition data from 2007 to 2020, decay rates were on average around 1.6mm.<sup>27</sup>
- The calibration process relies on 2003–14 data, which may not be representative of longer-term trends. Further, the underlying condition data measurements are volatile, adding to our concerns about the robustness of relying on short time series data.
- We tested the logic of United Energy’s 3mm decay rate to see its long-term implications on the age of United Energy’s poles population. With a 3mm decay rate, the model recommends 81 per cent of poles be intervened by 2045. This implies an average pole would last around 45 years, while our repex model indicates that the average age at replacement for wood poles is around 75 years. This suggests that a 3mm decay rate assumption may lead to United Energy replacing poles earlier than required.

### **United Energy’s further adjustment to forecast interventions leads to overstated outcomes**

United Energy adjusted its forecast intervention volumes higher or lower via a ratio factor depending on the accuracy of its forecast for 2015–19 against its actual volumes. United Energy explained this calibration step:<sup>28</sup>

due to the volume of data points within the model, the calibration process cannot goal-seek the exact set of decay rates that would have exactly predicted past performance. To account for this inaccuracy, our method uses a ratio factor to ‘fine-tune’ calibrated outcomes.

For instance, in 2015–19, United Energy’s model forecasts 8,951 interventions, compared with 9,327 actual interventions. For the 2025 forecast, United Energy’s model ‘fine-tunes’ for that under-forecasting in the current regulatory control period, and adjusts the forecast in 2025 up by 4 per cent, resulting in a forecast of 14,531 interventions.

We have concerns that this methodology overstates the forecast intervention volumes:

- This calibration process means that the driver of forecast intervention volumes is not expected future pole condition, but instead it is the relationship between the modelled interventions in the current regulatory control period and actual interventions.

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<sup>27</sup> Our decay rates are based on United Energy’s pole condition data and United Energy’s statement that a new pole on average has approximately 167mm of good wood. We excluded poles younger than 20 years old because United Energy does not drill new poles to measure sound wood thickness for around the first 20 years of service. We also excluded poles over 60 years old to reduce volatility, as the population of poles older than 60 years old is relatively small.

<sup>28</sup> United Energy, *Information request 084*, February 2021.

- We tested the model by applying decay rates lower and higher than 3mm and found illogical outcomes. For instance, we would expect that by substituting in a lower decay rate, pole population condition would deteriorate more slowly over time and forecast interventions would be lower. However, the model forecast higher volumes when the assumed decay rate halves.<sup>29</sup> Conversely, the model forecast lower volumes when the assumed decay rate doubles.<sup>30</sup>

### Overall deterioration in pole condition (and risk) is overstated

The model calculates the deterioration of pole condition at the end of the forecast regulatory control period (2025), and assumes that no pole interventions occur during the forecast regulatory control period. This assumption does not reflect actual pole intervention practice, as United Energy is likely to be actioning interventions of its pole year-on-year, thereby progressively reducing risk.

We raised these issues with United Energy. Its response either did not satisfy our concerns or, when we tested its assumptions, did not result in material difference to cause us to reconsider our position.<sup>31</sup>

### Repex modelling

Figure A.2 shows United Energy's revised proposal for wooden poles is \$27 million (54 per cent) higher than our repex model threshold (the lives scenario).<sup>32</sup> This suggests that United Energy's wood poles forecast may not be prudent and efficient and compares unfavourably when benchmarked against other distributors in the NEM. Further, the repex model threshold of \$49 million is the same as the historical scenario, suggesting that a forecast similar to United Energy's historical expenditure may more reasonably reflect efficient costs.

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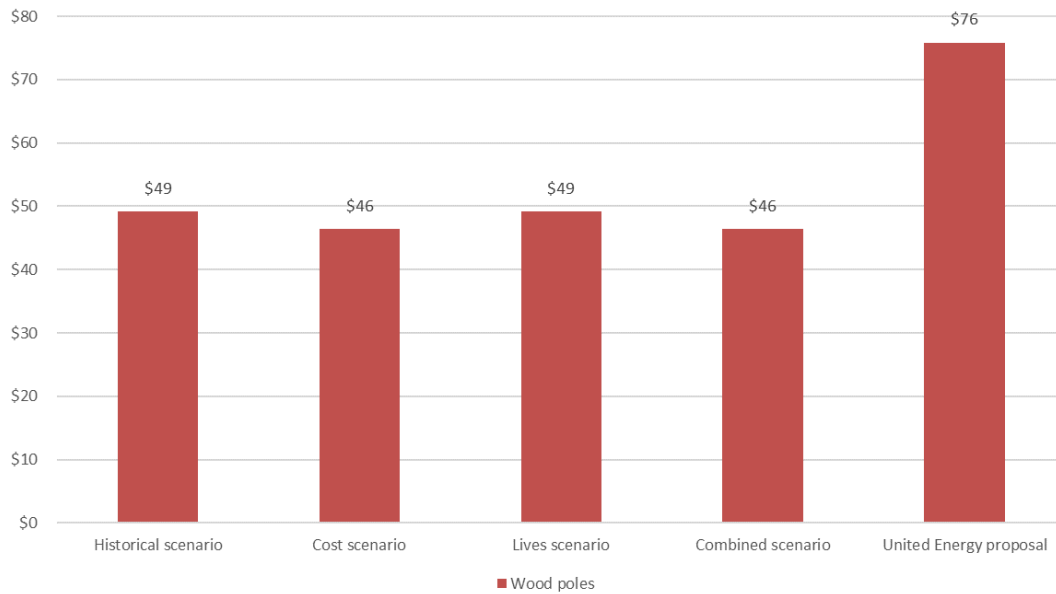
<sup>29</sup> For instance, when we applied an average decay rate of 1.5mm per year, United Energy's model forecasts 2,228 interventions in 2015–19 compared with 9,327 actual interventions. United Energy's model 'corrects' for the under-forecasting in the current regulatory control period, and adjusts the forecast for 2025 up by 419 per cent, resulting in 16,062 forecast interventions.

<sup>30</sup> For instance, when we applied an average decay rate of 6mm per year, United Energy's model forecasts 52,765 interventions in 2015–19 compared with 9,327 actual interventions. United Energy's model 'corrects' for the over-forecasting in the current regulatory control period, and adjusts the forecast for 2025 down by 82 per cent, resulting in 10,856 forecast interventions.

<sup>31</sup> United Energy, *Information request 084*, February 2021.

<sup>32</sup> We compare a distributor's proposal against the higher of the lives scenario or cost scenario. This takes into account interrelationships between costs and lives.

**Figure A.2 Repex model results – wood poles (\$ million, 2020–21)**



Source: AER analysis.

### Service lines

United Energy’s revised proposal included \$23.4 million for service lines repex, which is \$1.5 million (6 per cent) lower than its initial proposal and \$5.3 million (30 per cent) higher than our draft decision. We have included \$18.0 million for service lines repex in our substitute estimate for capex. This is in line with current regulatory control period repex and our draft decision. In response to our draft decision, the evidence provided by United Energy was not sufficient to demonstrate that its proposed proactive replacement program is prudent and efficient because:

- United Energy has overstated safety risks in the cost-benefit analysis. Specifically, the probability of consequence and the cost of consequence assumptions are overstated and not supported by historical evidence.<sup>33</sup> Therefore, we are not convinced that United Energy’s proposal is reasonably required over its historical business-as-usual (BAU) replacement.
- The current performance of United Energy’s service line population is adequately providing safe and reliable services.
  - Failure rates have declined from approximately 1,200 failures in 2009 to 400 failures in 2015 and have since remained at that level.<sup>34</sup> This suggests that current regulatory control period repex is sufficient to maintain low failure rates.

<sup>33</sup> United Energy, *Information request 067*, December 2020.

<sup>34</sup> United Energy, *Revised regulatory proposal 2021–26 - BUS 4.05 Services: replacement forecast method*, January 2020, p.7.

- Since 2016, United Energy has used remote monitoring for early fault detection, utilising smart meters in Victoria. This has reduced the number of faults and shocks experienced in its network.<sup>35</sup>
- There was a large replacement program prior to 2015, resulting in a relatively young service line population.
- United Energy's BAU program primarily involves replacements for higher risk assets such as neutral screen and PVC twisted wire service lines.<sup>36</sup> Therefore, our final decision allows United Energy to continue to target the replacement of these assets.

Stakeholders were supportive of our draft decision, in that United Energy did not adequately justify why a step-up on current regulatory control period repex was required for service lines:

- The VCO expressed concerns with the 'faster' or proactive replacement of some asset groups (including service lines) beyond that of historic replacement levels, despite existing practices delivering the needed reliability. VCO also commented:
 

[distributors] are free to spend more on this (or any other activity) if they so desire – the AER is not mandating a rate of replacement, it is merely providing an efficient allowance for the activity...

until the [distributors] can clearly show that the AER draft decision will deliver less reliability than assertions of [United Energy]...cannot be seen to be more persuasive than the arguments of the AER for its view based on historic replacement rates.<sup>37</sup>
- The CCP17 considered that our position to accept the BAU program and not accept the proactive program was reasonable, and stated that 'should public safety risks from service lines continue to escalate, the distributor is best placed to consider the most effective response within existing capital allocation priorities'.<sup>38</sup>

### Zone substation transformers

United Energy's revised proposal included \$19.8 million for ZS transformers, which is \$12.2 million (38 per cent) lower than its initial proposal and \$6.9 million (54 per cent) higher than our draft decision. We are satisfied that United Energy's revised forecast for its ZS transformers contributes to a prudent and efficient capex forecast.

In our draft decision we did not accept United Energy's initial proposal as we had concerns with United Energy's risk monetisation model and considered that it overstated risks and forecast repex. United Energy's revised proposal addressed the

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<sup>35</sup> United Energy, *Information request 052*, July 2020.

<sup>36</sup> United Energy, *Information request 052*, July 2020.

<sup>37</sup> VCO, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p. 41–42. VCO applied the same commentary on wood pole replacements to service lines.

<sup>38</sup> CCP17, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p. 122.

majority of these concerns resulting in materially lower forecast repex. We appreciate United Energy updating its revised proposal to address our concerns.

While the updated model addressed most of our concerns, United Energy did not change its 70:30 per cent weighting of 50% probability of exceedance (PoE) and 10% PoE in its peak demand assumption. We maintain our draft decision position that that this weighting of 50% PoE and 10% PoE peak demand in the context of assessing asset replacement timing are not appropriate, and overstate its calculation of unserved energy.<sup>39</sup>

In its review of the initial proposal, EMCa noted that the use of this peak demand weighting in the context of assessing asset replacement timing might not be appropriate.<sup>40</sup>

We consider the key issue here is the application of a planning methodology to estimate the expected value of unserved energy. We consider that United Energy is incorrect in stating that the 50% PoE does not represent a realistic expectation of demand. However, the expected value of unserved energy is not a function of the peak demand alone. It should take account of the Load Duration Curve, since the amount of energy unserved (if any) as a result of an equipment outage depends on the load during the time of the outage, and this also is influenced by any mitigation measures...United Energy has not demonstrated that its 70:30 assumption is valid for DNSP planning purposes.

Despite our concerns with United Energy's 70:30 PoE assumption, in this particular case the impact of this assumption on United Energy's revised forecast is immaterial. Therefore, we accept United Energy's assumption and include it as part of our substitute estimate of total capex.

We have had regard to the new information and stakeholders' submissions for this program. Spencer&Co submits that it supports United Energy's ZS transformer replacement program, noting its mature approach to transformer replacement designed to manage the consequences of asset failure and sensitivity analysis.<sup>41</sup> The CCP17 submits that United Energy has been successfully maintaining the health and reliability of its network to date, including transformers, and the need for increased investment in the 2021–26 regulatory control period was not clear, but ultimately defers to AER's detailed analysis.<sup>42</sup>

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<sup>39</sup> AER, *Draft decision United Energy 2021–26 — Capital expenditure*, September 2020, p. 28.

<sup>40</sup> EMCa, *Review of aspects of United Energy's regulatory proposal 2021–26*, September 2020, p. 27. EMCa's reference to the '70:30 assumption' relates to United Energy's weighting of 50% PoE and 10% PoE peak demand.

<sup>41</sup> Spencer&Co, *Report to ECA – a review of Victorian Electricity Distributors' revised proposals 2021–26*, p. 36.

<sup>42</sup> CCP17, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, pp. 121–122.

## A.2 DER integration capex

DER includes solar photovoltaic (PV), energy storage devices, electric vehicles (EVs) 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 are placed on networks.

DER integration expenditure addresses increasing DER penetration on the network. This includes managing voltage within safety standards and allowing solar customers to dynamically export back onto the grid. DER integration capex includes:

- augmenting the network to physically provide greater solar PV export capacity
- ICT capex to develop greater visibility of the low-voltage network and manage changes being driven by technological developments (batteries and EVs).

### A.2.1 Final decision

We accept that United Energy's revised DER integration capex forecast would form part of a total capex forecast that reasonably reflects the capex criteria. We have included this amount in our substitute estimate of total capex.

### A.2.2 United Energy's revised proposal

United Energy's revised proposal includes a DER integration capex forecast of \$39.7 million. Its revised proposal accepted our draft decision on DER integration capex. United Energy stated it would develop a unified approach to solar enablement and digital network investment as part of a broad future network strategy that accommodates customer choices for all forms of distributed energy.<sup>43</sup>

### A.2.3 Reasons for final decision

United Energy's revised proposal stated that it would increase its network's DER hosting capacity in a smart way by leaning on technology such as its dynamic voltage management system.<sup>44</sup> It also highlighted that it is seeking to get the most out of its existing network by:

- expanding its demand management capabilities by developing a platform to facilitate market-led demand management across its low-voltage assets, which will reduce augmentation costs for all customers
- developing dynamic operating envelopes to better manage DER, including ensuring DER operates within the bounds of the network's capacity to minimise disruption and ensure customers get fair access.<sup>45</sup>

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<sup>43</sup> United Energy, *Revised regulatory proposal 2021–26*, January 2021, p. 2.

<sup>44</sup> United Energy, *Revised regulatory proposal 2021–26*, January 2021, p. 76.

<sup>45</sup> United Energy, *Revised regulatory proposal 2021–26*, January 2021, p. 76.

We endorse United Energy's revised approach and we recommend this approach to all distribution networks. Stakeholder submissions from the CCP17, ECA, Spencer&Co and the VCO agree.<sup>46</sup> The VCO supports United Energy's acceptance of our draft decision, reducing network augmentation spending while maintaining the budget for developing smart grid capabilities.<sup>47</sup> It commends United Energy on making a strong case for smart-grid programs such as dynamic voltage management, adding that these functionalities will allow United Energy to manage network constraints safely.

United Energy also stated that it would need to accommodate additional solar and battery installations due to the Victorian Government's expanded Solar Homes Program.<sup>48</sup> It noted that it would manage the impacts on its network within the program accepted in our draft decision. We acknowledge that the expanded program is likely to increase DER penetration on United Energy's network. However, the reduction in Victoria's minimum feed-in tariff by one-third from 1 July 2021 will help to balance this trend.<sup>49</sup>

### Value of DER (VaDER)

United Energy accepted our draft decision on the amount of capex required to facilitate and integrate DER on its network. Our decision supports United Energy accommodating solar PV growth on its networks to achieve consumer expectations regarding the Victorian Government's Solar Homes Program.

As highlighted in our draft decision, we commissioned the CSIRO and CutlerMerz to conduct a study into potential methodologies for determining the VaDER in response to stakeholder submissions on our consultation paper 'Assessing Distributed Energy Resources (DER) Integration Expenditure'.<sup>50</sup> We published the CSIRO and CutlerMerz's final value of DER 'VaDER: methodology study' in November 2020 following the release of our draft decision.<sup>51</sup>

We will continue to consider this advice and recommendations, and the Australian Energy Market Commission's current DER rule change consultation process during our ongoing stakeholder engagement and in finalising our DER integration expenditure guideline. We will continue to engage with stakeholders on the development of the

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<sup>46</sup> CCP17, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p. 9; ECA, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p. 4; Spencer&Co, *Report to ECA – a review of Victorian Electricity Distributors' revised proposals 2021–26*, January 2021, p. 13; VCO, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p. 7.

<sup>47</sup> VCO, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, pp. 21–22.

<sup>48</sup> United Energy, *Revised regulatory proposal 2021–26*, January 2021, pp. 9–10.

<sup>49</sup> Renew Economy, *Victoria regulator slashes FIT by one-third*, February 2021.

<sup>50</sup> AER, *Assessing distributed energy resources integration expenditure*, November 2019, see: <https://www.aer.gov.au/system/files/AER%20Assessing%20Distributed%20Energy%20Resources%20%28DER%29%20Integration%20Expenditure%20consultation%20paper%20-%2028%20November%202019.pdf>.

<sup>51</sup> CSIRO and CutlerMerz, *Value of distributed energy resources: Methodology study – Final report*, October 2020.

DER guideline in the context of these proposed rule changes, which are due for finalisation in mid-2021.

## **A.3 Augex**

The need to build or upgrade the network to address changes in demand and network utilisation typically triggers augex. The need to upgrade the network to comply with quality, safety, reliability and security of supply requirements can also trigger augex.

### **A.3.1 Final decision**

We do not accept that United Energy's revised augex forecast of \$96.1 million would form part of a total capex forecast that reasonably reflects the capex criteria. We have included \$90.2 million for augex in our substitute estimate for total capex, which is in line with our draft decision (but with changes to real cost escalation). This is due to our reallocation of a proportion of its proposed network communications expenditure to ACS capex. This reallocation is consistent with our draft decision as we discuss below.

### **A.3.2 United Energy's revised proposal**

United Energy proposed \$129.7 million for augex in its initial proposal. In our draft decision, we concluded that United Energy had not demonstrated that this forecast was prudent and efficient, due to overstated forecast demand. We included a non-DER augex forecast of \$89.3 million in our substitute estimate of total capex.

In its revised proposal, United Energy largely accepted our draft decision forecast for non-DER augex, but did not accept our draft decision allocation of communications augex between SCS and ACS.

### **A.3.3 Reasons for final decision**

#### **Traditional augex**

While it largely accepted our draft decision, United Energy stated that it was concerned with our assessment approach. It considered that a short history of augex may not be representative of future expenditure because localised demand growth drives augex in relation to local hosting capacity. It also noted that past expenditure may not have been prudent and efficient.<sup>52</sup>

We recognise that some local augmentation may be necessary even when system peak demand is not growing, due to differences in local growth rates. However, United Energy has not demonstrated that this local augmentation is likely to be higher in 2021–26 relative to the current regulatory control period.

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<sup>52</sup> United Energy, *Revised regulatory proposal 2021–26*, January 2021, p. 73.



Where system demand is not growing, regional growth could drive higher augex than historically observed. A second possibility is that augex could be 'lumpy' where the number of projects is small. A third is that if the network has been expanded for demand growth that did not eventuate, augex is likely to decline in the following regulatory control period.

In our draft decision, we performed a bottom-up test of our substitute estimate using the Australian Energy Market Operator's (AEMO) terminal station demand forecasts. United Energy raised a number of concerns with the method we used to do this:<sup>53</sup>

1. United Energy stated that we did not produce reconciled forecasts at the zone substation and feeder level. However, we used AEMO's terminal station forecasts to produce zone substation and feeder level forecasts based on a similar reconciliation procedure to United Energy and shared these forecasts with United Energy.
2. United Energy argued that we should have performed full energy at risk assessments. However, for the purposes of our bottom-up calculations, it was appropriate to take demand in the year in which United Energy forecast a need for augmentation as our threshold. This means that we effectively took United Energy's energy at risk assessment as a given. Since AEMO and United Energy maintained constant ratios between their 50% PoE and their 10% PoE forecasts, in effect we also accepted United Energy's weighting of these two forecasts in its energy at risk calculations.
3. United Energy argued that it was unreasonable to ask for business cases for the unsupported augex in this category (\$62.7 million). However, where distributors seek an increase in expenditure, it is reasonable to expect them to justify that the higher augex is prudent and efficient costs.

In our draft decision we stated that we would check if the AEMO's 2020 terminal station forecasts indicated a need to revise our traditional augex forecast. For United Energy's network, the AEMO forecast non-coincident summer maximum demand to decline at 0.49 per cent per year over the 2021–26 regulatory control period. This is broadly consistent with the assumption of our draft decision so further revision to our substitute estimate is not required.

### **REFCL and bushfire augex**

We accept United Energy's revised forecast of \$8.5 million of augex in this category.

### **Other augex programs**

Consistent with our draft decision and our final decision for ACS, we have reallocated a proportion of United Energy's proposed network communications expenditure to ACS

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<sup>53</sup> United Energy, *Revised regulatory proposal 2021–26*, January 2021, pp. 73–74.

capex. United Energy allocated 100 per cent of its 3G shutdown network communications program to SCS capex.

The 3G systems that United Energy is replacing are used to backhaul bulk data from advanced metering infrastructure meters. The data is used for both metering and SCS services, and so costs should be shared between SCS and ACS. Based on our analysis, we have allocated 72 per cent of this program to SCS capex and the remaining 28 per cent to ACS capex.

Similarly, United Energy allocated 88 per cent of its annual communication devices program to SCS capex. Our ACS metering analysis has determined that a more reasonable allocation is 25 per cent to SCS capex and 75 per cent to ACS capex. Our substitute estimate of total capex is consistent with these reallocations. Further analysis of these reallocations is in attachment 16 of our final decision.

## **A.4 Connections capex**

Connections capex is expenditure incurred to connect new customers to the network and, where necessary, augment the shared network to ensure there is sufficient capacity to meet new customer demand.

### **A.4.1 Final decision**

We include \$287.9 million for gross connections capex including \$171.7 million for customer contributions in our substitute estimate for total capex.

We broadly accept United Energy's revised proposal; however, we have reduced its capital contributions forecast by \$2.6 million consistent with our change to United Energy's contributions threshold.<sup>54</sup>

### **A.4.2 United Energy's revised proposal**

United Energy initially proposed \$369.2 million for gross connections and \$240.0 million for capital contributions. We reduced these in our draft decision to \$294.1 million and \$194.8 million, respectively, due to the expected impact of COVID-19 on the construction industry and inconsistencies in the years United Energy used to calculate its unit rates for contributions and for capital costs.

In its revised proposal, United Energy forecast \$286.0 million for gross connections and \$171.9 million for capital contributions—an increase in net connections of \$14.9 million compared with our draft decision. United Energy introduced an adjustment to its forecast capital contributions to account for changes in its marginal cost of reinforcement rates. It reversed our COVID-19 adjustment for non-residential

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<sup>54</sup> Our forecast also incorporates an update to our COVID-19 adjustment based on Housing Industry Association (HIA) data.

connections and removed gifted assets (excluding rebates) to reflect a recent Federal Court decision on taxation treatment.<sup>55</sup>

### **A.4.3 Reasons for final decision**

#### **Effect of changed augmentation charges**

In our draft and final decisions for United Energy's connections policy we revised down the amounts it will charge customers for the cost of augmenting the network to service additional maximum demand. United Energy forecast that this would lead to a reduction in capital contributions for business connections and an increase for residential connections. This is based on the effect of applying our changed diversification factors to its non-residential connections, and applying a similar approach for residential connections, based on past contributions data. We accept this forecast.

#### **Effect of changed augmentation threshold**

Our final decision raises the threshold at which customers contribute to augmenting the shared network on three-phase connections. In United Energy's revised proposal, it argued our capital contributions forecast should decrease if our final decision retained this change. We have reduced our capital contributions forecast by \$2.6 million to incorporate this change, based on historical data United Energy provided demonstrating this effect.<sup>56</sup>

#### **Effect of COVID-19**

Our draft decision adjusted connections in the first year of the 2021–26 regulatory control period, based on dwellings forecast made by the HIA. United Energy's revised proposal reversed this adjustment for non-residential connections, based on its function codes. We have accepted this change, based on stimulus announcements by the Victorian government subsequent to our draft decision. We also have revised down our HIA adjustment for residential connections based on updated HIA forecast data (from a 42 per cent reduction in the first year to a 37 per cent reduction).

#### **Gifted assets**

We accept United Energy's treatment of gifted assets in its revised proposal to account for a recent Federal Court ruling concerning their treatment for taxation purposes. This removes gifted assets excluding rebates from gross connections and capital contributions forecasts so that United Energy can no longer recover these costs from consumers.

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<sup>55</sup> United Energy, *ATT38 Victoria Power Networks v Commission of Taxation [2020]*, FCAFC 169, October 2020.

<sup>56</sup> United Energy, *Information request 073*, January 2021.

## A.5 ICT capex

ICT refers to all devices, applications and systems that support business operation. ICT expenditure is broadly categorised as either replacement of existing infrastructure for reasons due to end of life, technical obsolescence or added capability of the new system or the acquisition of new assets for a business need.

### A.5.1 Final decision

We accept that United Energy's revised ICT capex forecast of \$164.2 million would form part of a total capex forecast that reasonably reflects the capex criteria. We have included this amount in our substitute estimate of total capex.

### A.5.2 United Energy's revised proposal

United Energy's revised proposal includes an ICT capex forecast of \$164.2 million, comprising \$104.5 million in recurrent ICT and \$59.7 million in non-recurrent ICT. Table A.1 summarises United Energy's revised proposal and our final decision.

**Table A.1 United Energy's ICT capex forecast (\$ million, 2020–21)**

Category	Initial proposal	Draft decision	Revised proposal	Final decision
Recurrent ICT	107.8	103.5	104.5	104.6
Non-recurrent ICT	66.3	50.6	59.7	59.8
<b>Total ICT capex</b>	<b>174.1</b>	<b>154.1</b>	<b>164.2</b>	<b>164.4</b>

Source: United Energy's revised proposal and AER analysis.

Note: Numbers may not sum due to rounding. Final decision is slightly higher due to modelling adjustments.

### A.5.3 Reasons for final decision

In our draft decision we accepted United Energy's recurrent ICT capex forecast, subject to updates to the CPI and real price escalation assumptions. United Energy also accepted most of our draft decision for non-recurrent ICT capex, including minor adjustments to its intelligent engineering program. The key difference between United Energy's revised ICT capex forecast and its initial forecast is its repropose smaller customer enablement program. Therefore, our final decision assessment has primarily focused on this program.

#### Customer enablement

United Energy's customer enablement program seeks to automate connection and supply requests, invest in unified online platforms and tools, and improve contact

centre functions to facilitate its customer communications.<sup>57</sup> The program intends to facilitate customer usage of online and contact centre services. United Energy has stated it will now jointly undertake this program with CitiPower and Powercor.<sup>58</sup>

Our draft decision highlighted that United Energy had not justified the prudence and efficiency of this program because:

- United Energy did not fully justify the benefit of accessing information in relation to network connections through the proposed app, with convenience being the only additional value that was likely to be provided
- United Energy did not fully justify the benefit of providing improved availability and customer access to information through the myEnergy portal and real-time energy usage data, as this initiative would duplicate services that are already provided through energy retailers, and that real-time data was not necessarily required to extract the claimed benefits
- United Energy did not fully justify the benefit of a reduction in call centre time through the proposed app, as consumers already have access to the same services through the web page, and the choice of an app would not make a material difference to calls
- United Energy's approach to valuing savings in customer time utilising the average consumer wage rate as a proxy for the enquiry time overvalued the time customers spend following up a connection or outage enquiry.<sup>59</sup>

We sought additional information from United Energy via an information request to understand how it had initially quantified the eConnect and mySupply portal initiatives and the subsequent cost reduction in the revised proposal (\$0.6 million).

United Energy's response lacked sufficient detail and did not quantify the cost reduction. It stated that it achieved cost savings via learnings from the CitiPower and Powercor implementation, reducing the number of initiatives in the program and consolidating the planned implementation of eConnect and mySupply under the same project team.<sup>60</sup>

As with CitiPower and Powercor, we highlight concerns about several areas of the revised program:

- the use of the average consumer wage rate in the calculation of the value of time saved despite our concerns raised in the draft decision

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<sup>57</sup> United Energy, *Revised regulatory proposal 2021–26*, January 2021 - *Customer enablement business case*, December 2020, p. 8.

<sup>58</sup> United Energy, *Revised regulatory proposal 2021–26*, January 2021 - *Customer enablement business case*, December 2020, p. 8.

<sup>59</sup> AER, *Draft decision, United Energy 2021–26 — Capital expenditure*, September 2020, pp. 56–57.

<sup>60</sup> United Energy, *Information request 074*, January 2021.

- the sensitivity analysis conducted using number of users accessing various portals, achieving only a positive net present value (NPV) of economic benefit for the whole program with two thirds of all customers accessing portals by 2026
- the contact centre AI initiative that seeks to improve call centre outcomes, as consumers already having access to the same services through the webpage (as highlighted in our draft decision).

The CCP17 submitted that it supports United Energy's revised customer enablement program. However, it raised concerns about demonstrating the effectiveness of these web-based initiatives, suggesting that distributors publish customer feedback and usage statistics.<sup>61</sup>

Based on the evidence before us, we have included United Energy's revised customer enablement forecast in our substitute estimate of total capex.

## A.6 Other non-network capex

Other non-network capex includes property, fleet, plant, tools and equipment. Property expenditure relates to the maintenance, refurbishment and optimisation of offices, operational depots, warehouses, training facilities and other specialist facilities. We assessed the indirect costs associated with property assets as part of overheads and the costs below refer to 'direct' capital costs only.

Fleet includes expenditure for purchasing new vehicles and related items, including mounted plant. This is divided between light fleet (passenger and light commercial vehicles) and heavy fleet (elevated work platforms, crane borers and other heavy commercial vehicles).

### A.6.1 Final decision

We accept that United Energy's non-network capex forecast of \$82.3 million would form part of a total capex forecast that reasonably reflects the capex criteria. We have included this amount in our substitute estimate of total capex.

### A.6.2 United Energy's revised proposal

United Energy accepted our draft decision of \$14.4 million for fleet, tools and equipment. However, United Energy repropoed \$67.9 million for property capex, which is \$20.7 million higher than our draft decision forecast.

United Energy revised its property forecast due to a need to relocate its Burwood depot site and upgrade its Keysborough site due to its greater importance as a result of the Burwood relocation.<sup>62</sup>

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<sup>61</sup> CCP17, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p. 120.

<sup>62</sup> United Energy, *Revised regulatory proposal 2021–26*, January 2021, p. 102.

### A.6.3 Reasons for final decision

We accept United Energy's property capex forecast due to the change in its property circumstances following our draft decision.

In our draft decision, we adopted EMCa's analysis and chose the highest NPV options, which was the minimum spend option for Burwood and Keysborough depots. We considered the minimum spend options would be sufficient to address the issues identified by United Energy.

United Energy's revised proposal identified that, due to the need to relocate Burwood, its Keysborough site will become its main depot.<sup>63</sup>

Based on the new information we are satisfied that the minimum spend options from our draft decision are no longer feasible. We are also satisfied that the quotes we have received to support United Energy's Keysborough and Burwood sites are efficient.

United Energy also noted that it did not agree with EMCa's analysis and assumptions. In particular, it considered that EMCa did not substantiate its assumptions and that the level of precision required for those assumptions were unrealistic. United Energy also noted that as a sense check, it observed the relative performance of more modern depots in the Powercor network.<sup>64</sup>

Our departure from our draft decision is due to the change in United Energy's circumstances rather than accepting United Energy's options.

We agree that forecasts can be sensitive to the model inputs and assumptions and that it may not be feasible to forecast all assumptions. However, EMCa's analysis identified issues with United Energy's productivity, safety risk and customer service assumptions. Further, United Energy did not provide evidence to support its assumptions.

United Energy did not update these assumptions and claimed that EMCa did not provide any evidence in support of its substitute assumptions. We are satisfied by EMCa's analysis; in particular, we agree with EMCa removing duplicated factors that resulted in unrealistic safety assumptions.<sup>65</sup>

In accepting United Energy's revised proposal, we are acknowledging that lower cost options are no longer feasible rather than agreeing with United Energy's NPV analysis.

In particular, United Energy should have reflected the opex productivity benefits that are a material part of the overall NPV of the project, beyond the costs required to maintain its network and meet compliance obligations, in its opex forecast.

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<sup>63</sup> United Energy, *Revised regulatory proposal 2021–26*, January 2021, p. 104.

<sup>64</sup> United Energy, *Revised regulatory proposal 2021–26*, January 2021, p. 105.

<sup>65</sup> EMCa, *Review of aspects of United Energy's regulatory proposal 2021–26*, September 2020, p. 208.

However, as this project is compliance-driven and we do not consider United Energy's property productivity assumptions are reasonable we are satisfied that any associated productivity benefits of the property projects, which are largely to avoid future cost increases, does not have to be included above the 0.5 per cent opex productivity assumption.

Given United Energy is expecting to materially upgrade or build new depots to meet all current regulatory obligations, we would also expect there to be a material decrease in property capex in the 2026–31 regulatory control period relative to the 2021–26 regulatory control period.

## **A.7 Capitalised overheads**

Overhead costs include business support costs not directly incurred in producing output, and shared costs that the distributor cannot directly allocate to a particular business activity or cost centre. The Australian Accounting Standards and the distributor's cost allocation methodology determine the allocation of overheads.

### **A.7.1 Final decision**

We are not satisfied that United Energy's revised capitalised overheads forecast reasonably reflects the capex criteria. We have included \$96.7 million for capitalised overheads in our substitute estimate of total capex. This is \$11.4 million (11 per cent) lower than United Energy's revised proposal. We are satisfied our substitute estimate forms part of a total capex forecast that meets the capex criteria.

### **A.7.2 United Energy's revised proposal**

United Energy did not accept our draft decision of \$91.6 million for capitalised overheads. Its revised proposal included a capitalised overheads forecast of \$108.1 million. United Energy did not accept our use of a 2016–19 average to forecast base overheads and did not accept our 75/25 ratio for fixed and variable overheads. United Energy proposed to apply the opex rate of change and 2019 capitalised overheads as the base.<sup>66</sup>

### **A.7.3 Reasons for final decision**

United Energy is not required to forecast its capitalised overheads on the same basis as expensed overheads. The base, step and trend approach is used to forecast total opex, and expensed overheads form part of the total opex forecast. Similarly, capitalised overheads form part of total capex, which is forecast on a different basis. Therefore, United Energy is not restricted to use the same base year for capitalised overheads in its forecast methodology as it has used for expensed overheads.

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<sup>66</sup> United Energy, *Revised regulatory proposal 2021–26*, January 2021, p. 107.



To assess capitalised overheads, we typically compare the forecast with capex in the current regulatory control period. We do not select a single base year due to the more lumpy nature of capex. Although capitalised overheads may not necessarily vary year to year as much as direct capex, we do not consider a single year of capitalised overheads is sufficient to be representative of forecast capitalised overheads.

In addition, the basis for selecting a single base year in opex is the interaction between opex and the efficiency benefit sharing scheme (EBSS). Under the EBSS, a distributor does not benefit from shifting costs to, or increasing costs in, the regulatory year that forms the basis of future opex forecasts.<sup>67</sup> Another method for setting forecasts is to use an averaging method that provides the same incentive to reduce opex without an EBSS.

United Energy's methodology of applying the 2019 base year results in a 6 per cent increase in capitalised overheads relative to the current regulatory control period. This is before accounting for the difference between capex in the current regulatory control period and the 2021–26 regulatory control period. We do not consider such an increase in capitalised overheads between the current and the forecast regulatory control periods is justified.

United Energy has also not accounted for the relationship between direct capex and capitalised overheads. It stated in its revised proposal that the 75/25 fixed and variable ratio of capitalised overheads to capex is incorrect because its forecast capex is higher than 2019 capex and we reduced capitalised overheads in our draft decision.<sup>68</sup>

We do not consider United Energy's reasoning of using the rate of change and delinking of capitalised overheads with direct capex is reasonable.<sup>69</sup> However, we recognise that an increase or decrease in direct capex should result in an increase or decrease in capitalised overheads. For this reason, we have adjusted forecast capitalised overheads, using our standard 75/25 fixed variable proportion, for the 12 per cent decrease in direct capex that attracts overheads relative to historical direct capex. This results in a 3 per cent decrease in United Energy's capitalised overheads.

We do not typically apply the rate of change to our capitalised overheads, as this is due to the potential for double-counting opex output growth and changes in direct capex. However, we have retained United Energy's use of the rate of change and updated it to reflect our final decision opex rate of change. We consider using the rate of change in this instance does not materially affect forecast capitalised overheads.

The 2021–22 opex rate of change uses a nine-month calculation. This is to take into account the transition from calendar to financial year between regulatory control

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<sup>67</sup> AER, *Final decision – Electricity distribution network service providers – Efficiency benefit sharing scheme*, June 2008, p. 8.

<sup>68</sup> United Energy, *Revised regulatory proposal 2021–26*, January 2021, p. 103.

<sup>69</sup> Direct capex includes the main categories of capex that attracts capitalised overheads. This includes repex, connections and augex.

periods. We have applied this rate of change twice to allow for the 18-month period in United Energy's capex model.

## Shortened forms

Shortened form	Extended form
3G	Third generation
ACS	alternative control services
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
augex	augmentation expenditure
BAU	business as usual
capex	capital expenditure
CCP17	Consumer Challenge Panel – subpanel 17
CESS	capital expenditure sharing scheme
COVID-19	Coronavirus disease 2019
CPI	consumer price index
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DER	distributed energy resources
distributor	distribution network service provider
EBSS	efficiency benefit sharing scheme
ECA	Energy Consumers Australia
EMCa	Energy Market Consulting Associates
EVs	Electric vehicles
HIA	Housing Industry Association
ICT	information and communications technology
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
NPV	net present value
opex	operating expenditure
PoE	probability of exceedance

Shortened form	Extended form
PTRM	post-tax revenue model
PV	photovoltaic
RAB	regulatory asset base
REFCL	rapid earth fault current limiter
repex	replacement capital expenditure
SCS	standard control services
STPIS	service target performance incentive scheme
VaDER	Value of DER
VCO	Victorian Community Organisations
ZS	zone substation