



FINAL DECISION

Advanced metering infrastructure

Transition Charges Applications

December 2016

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Shortened forms

Shortened form	Extended form
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AMI	Advanced metering infrastructure
capex	capital expenditure
CPI	consumer price index
DRP	debt risk premium
distributor	distribution network service provider
DUoS	distribution use of system
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
Expenditure Assessment Guideline	Expenditure Forecast Assessment Guideline for Electricity Distribution
F&A	framework and approach
MAB	metering asset base
MRP	market risk premium
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider
opex	operating expenditure
PPI	partial performance indicators
PTRM	post-tax revenue model
RAB	regulatory asset base
RBA	Reserve Bank of Australia
RFM	roll forward model
RIN	regulatory information notice

1 Summary

We are required to determine advanced metering infrastructure (AMI) transition charges for all five Victorian electricity distributors. The requirement to determine AMI transition charges is set out in the Victorian Government's AMI Cost Recovery Order in Council (Order).¹ These charges follow on from the completion of the AMI roll-out period which ran from 1 January 2009 to 31 December 2015. This is the last task the AER is required to do under the Order.

The five Victorian electricity distributors submitted initial transition charge applications on 31 May 2016. We published our draft decision² on 20 September 2016 and allowed 30 business days for submissions including revised applications from the distributors.

We received three revised applications. These were from AusNet Services and Jemena, which did not accept our draft decision, and United Energy, which accepted our draft decision in full.³ CitiPower and Powercor did not revise their initial transition charge applications or make any other submission. We did not receive submissions from any other stakeholders.

A transition charge (if applied) is an amount that may allow a distributor to recover from the consumer AMI costs that it has not already recovered to date. Alternatively, a distributor may be required to return an amount to consumers if it has recovered costs for AMI that exceed the costs provided for under the Order.

The transition charge amount is determined under the Order by:

- (a) applying a 'true up' of 2009–15 costs and revenues that corrects for the difference between:
 - the AMI costs over the 2009–15 period as approved by us in previous decisions for each distributor⁴
 - the distributor's actual revenues from AMI metering charges;⁵ and
- (b) incorporating any 'excess' expenditure incurred in 2014 and 2015 that we determine is prudent. Excess expenditure is prudent where it reasonably reflects the efficient costs of a business providing AMI services.⁶

¹ *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council*. Since the Order was initially made, it has been amended several times. This final decision applies the latest version of the Order made 15 June 2016.

² AER, *Draft AMI transition charges determination*, 20 September 2016.

³ AusNet Services, *Submission on transition charges application draft decision*, 2 November 2016; Jemena, *Submission on transition charges application draft decision*, 2 November 2016; United Energy, *Submission on transition charges application draft decision*, 21 October 2016.

⁴ AER, *2009–11 AMI budget and charges determination*, 30 October 2009; AER, *2012–15 AMI budget and charges determination*, 31 October 2011.

⁵ *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council*, cl 5L.4.

⁶ *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council*, cl 5L.4.

Our final decisions for AusNet Services, Jemena and United Energy apply a true-up between approved AMI costs and actual revenues over the 2009–15 period. In addition, AusNet Services, Jemena and United Energy have sought expenditure excesses. We assessed this spending as it exceeds the 2012–15 Approved Budget⁷ for each of those distributors. We have approved recovery from consumers of that part of the excess expenditure for 2014 and 2015 which we determined to be prudent.

Not all of the Victorian electricity distributors sought the recovery of excess expenditure for 2014 and 2015 in their applications.

CitiPower and Powercor spent less than their 2014 and 2015 approved costs and there is no excess expenditure to assess. Underspends by CitiPower and Powercor in 2014 and 2015 will result in savings being returned to customers through a negative transition charge. Accordingly, for CitiPower and Powercor, our final decisions only apply a true-up between approved AMI costs and actual revenues over the 2009–15 period.

When the charges will apply

The Order allows us to apply the recovery of the transition charge in 2017 and in any subsequent years of the 2016–2020 regulatory control period.⁸

Our final decision is that the transition charges we approve will not be applied by the Victorian electricity distributors in 2017. Instead, they will take effect in 2018 for CitiPower, Powercor and United Energy.⁹ For AusNet Services and Jemena, we accept their proposals to smooth the revenue adjustment over multiple years from 2018 to 2020. Our final decision approves larger revenue adjustments for AusNet Services and Jemena so smoothing their transition charges will minimise price volatility for customers. Since we will adjust for time value of money, applying the transition charge in 2018 or over multiple years will not lead to customers being any better or worse off by the charges being applied in that year or years.

Table 1.1 sets out our final decision. It shows the expenditure adjustment (\$million 2018) we have determined as a result of our assessment of each Victorian electricity distributors' approved costs and actual AMI revenues over the 2009–15 period. Table 1.2 sets out our estimate of the price path for alternative metering services for each Victorian distributor in the current 2016–2020 regulatory control period. The price paths shown incorporate our final decision to apply the transition charge in a single year (2018) for CitiPower, Powercor and United Energy but smooth the revenue adjustment over multiple years (2018 to 2020) for AusNet Services and Jemena.

⁷ AER, *2012–15 AMI budget and charges determination*, 31 October 2011.

⁸ *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council*, cl 5L.3.

⁹ As this decision on the AMI transition charges is made on 16 December 2016, in accordance with the deadlines set out in the Order, it is not possible for the charges to be applied in 2017 as the annual pricing approval process for each of the Victorian electricity distributors has been finalised. Accordingly, we have selected the following year (2018) for the transition charges to apply or, for Jemena and AusNet Services, to begin to apply.

Table 1.1 Final decision on transition charge (\$2018)

	Transition charge revenue adjustment	Total estimated bill impact
AusNet Services	(52 651 730)	70.52
CitiPower	(1 815 012)	5.59
Jemena	(7 668 588)	22.53
Powercor	(9 756 256)	12.13
United Energy	(3 863 122)	5.63

Source: AER analysis.

Table 1.2 Indicative average annual metering bill in Victoria (\$ 2018)

	2016	2017	2018	2019	2020
AusNet Services	130.19	127.31	82.59	64.20	48.68
CitiPower	100.74	88.75	79.01	80.83	77.22
Jemena	134.21	88.56	82.58	84.00	85.49
Powercor	100.50	90.36	72.29	79.85	75.52
United Energy	93.23	65.52	56.94	59.94	57.44

Source: AER analysis.

2 Background

In 2006, the Victorian Government mandated the roll-out of AMI for all customers consuming less than 160 MWh per annum. This involved the replacement of manually read meters with 'smart meter' technology that allows for the remote communication of a customer's half-hourly consumption data to an electricity distributor.

The regulatory arrangements relating to the AMI roll-out in Victoria were initially set out in an August 2007 Order made under the *Electricity Industry Act 2000* (Vic).

The Order adopts a 'cost pass through' regulatory model. Under this model, the recovery of costs incurred in relation to the AMI roll-out involves the following three processes:

1. setting AMI budgets at the beginning of a period¹⁰
2. making determinations on revised charges that update for actual expenditure¹¹
3. the approval of a transition charge that corrects for the difference between costs and revenues over the entirety of the 2009–15 period and which includes an assessment of any excess expenditure for the last two years of the rollout, 2014 and 2015.¹²

This final decision relates to the third process of the cost pass through model. In making this final decision, we are nonetheless required to consider past AMI budget and revised charges determinations. Those determinations are on our website¹³ and a summary of each is set out in our draft decision.¹⁴

The amount to be recovered through a transition charge is set out in Order. It provides that the transition charge is to be calculated as:

the difference between the future value in 2017 (or 2018) dollars of costs and the future value of revenue for the [2009–15 period].¹⁵

In effect, the transition charge is a true up between costs and revenues over the AMI roll-out period from 1 January 2009 to 31 December 2015. The approval of a transition charge for a distributor will have the effect of increasing or decreasing the revenue that can be recovered from customers. It also acts as a single year adjustment to our 2016–2020 distribution determinations on the Victorian distributors' revenue for metering (AMI) services for the current 2016–2020 regulatory control period, as explained below.

¹⁰ *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council*, cl 5A.2

¹¹ *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council*, cl 5G.3

¹² *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council*, cl 5L.

¹³ http://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/pricing-proposals-tariffs?fj0=type%3Aaacc%3Aaer_ami_charges

¹⁴ AER, *Draft AMI transition charges determination*, 20 September 2016, pp. 9–10.

¹⁵ *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council*, cl 5L.3.

3 Assessment approach

The Order sets out the assessment framework for our final decision on the five Victorian electricity distributors' transition charge applications.

3.1 Calculation of transition charge

Under the Order, the transition charge is comprised of two 'true-up' adjustments: the 'revenue and costs true-up' and the 'metering asset base true-up'. These are outlined below.

The value of these (true-up) adjustments are also effected by the ex post review of the Victorian distributors' expenditure in 2014 and 2015, which we refer to as our assessment of any expenditure excess in these years. In accordance with the Order, this ex post review must be conducted as part of this transition charges decision.

3.1.1 Revenue and costs true-up

The first adjustment required under the Order corrects for:

the difference between the future value in 2017 [or 2018] dollars of costs and the future value of revenue for the [2009–15 period].¹⁶

The term 'costs' refers to the 'building block costs' we have determined to be recoverable from customers in our previous budget determinations. For the purposes of the transition charge, 'revenue' is what has been actually recovered from customers and is to be calculated 'by using the actual revenue figures in the distributor's Regulatory Accounting Statements for each year of the [2009–15 period]'.¹⁷ Table 3.1 sets out how AMI revenues and costs are to be calculated.

Table 3.1 Calculation of costs and revenue under the Order

Year	Costs	Revenue
2009, 2011, 2012 and 2013	<p><u>Already determined.</u></p> <p>Building block costs are taken from the Revised Charges Determinations.</p>	Revenue is to be calculated by using the actual revenue figures in the distributor's Regulatory Accounting Statements for each year of the initial regulatory period (2009–15).
2010	<p><u>Already determined.</u></p> <p>Building block costs are taken from the 2012–15 Approved Budget.</p>	
2014, 2015	<p><u>Not yet determined.</u></p> <p>We must determine the 2014 and 2015 building block costs in this</p>	

¹⁶ Victorian Advanced Metering Infrastructure Cost Recovery Order In Council, cl 5L.3.

¹⁷ Victorian Advanced Metering Infrastructure Cost Recovery Order In Council, cl 5L.4(b).

Source: *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council, cl 5L.4.*

As noted in Table 3.1 above, we are required to determine the Victorian electricity distributors' 2014 and 2015 approved building block costs in making this determination. In doing this we must have regard to a number of factors. These include the application of 'scope' and 'prudence' tests.¹⁸

3.1.2 Metering asset base true-up

The second true-up adjustment relates to the metering asset base (MAB).

We calculated an opening MAB value for each of the Victorian electricity distributors in our 2016–2020 distribution determination. These MAB values were based on actual capex from 2011 to 2013. However, we used forecast capex for 2014 and 2015. These forecast amounts were taken from the Victorian distributors' 2015 AMI Charges Revision Applications.¹⁹ The 2014 and 2015 capex amounts that were an input into our calculation of the opening MAB in our 2016–2020 distribution determination therefore reflect the Victorian distributors' forecasts, submitted in August 2014.

To update these capex forecast values with actual amounts, we are required to make a revenue adjustment.²⁰ This involves, first, calculating the return on capital and depreciation building blocks components using the opening MAB value set in our 2016–2020 distribution determination. We are then required to perform the same calculation again. However, when making the calculation the second time we are required to use the actual capex amounts for 2014 and 2015 which have been determined in this final decision. The difference between these two calculations produces a higher (or lower) revenue amount which a distributor must recover (or return) to customers. This higher (or lower) amount is included or accounted for in the transition charge.

Through this process, we will not be actually amending the MAB value or building blocks approved in the 2016–2020 distribution determination. They will remain the same. Any differences in the return on capital and depreciation building blocks will be adjusted for via a revenue adjustment, incorporated into the transition charge. In this way, we do not have to reopen the 2016–2020 distribution determination in relation to smart metering services.

¹⁸ *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council, cl 5L.4.*

¹⁹ 2015 AMI charges revision application, August 2014.

²⁰ *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council, cl 5L.7.*

4 AusNet Services

We have calculated a substitute transition charge for AusNet Services that accepts some aspects of its revised proposal including an increased allowance for 3G communications infill.

Our draft decision on AusNet Services' excess expenditure required AusNet Services to refund \$62.1 million (\$2018) to consumers.

In its revised proposal, AusNet Services submitted that it be required to return to customers \$23.4 million (\$2018). In arriving at our final decision, we have considered the information provided in AusNet Services' revised proposals as well as the Victorian Government's submission on the initial proposal.²¹

4.1 Final decision

Our final decision provides for a negative transition charge of \$52.7 million (\$2018).

Under the Order, the calculation of AusNet Services' transition charge must consist of a revenue and costs true-up and a MAB adjustment (see section 3.1).²² AusNet Services' initial application included the revenue and costs true-up in the calculation of its proposed transition charge but did not include the MAB adjustment. Its submission on our draft decision, however, accepted that the Order requires a MAB adjustment.²³

Table 4.1 sets out the components that make up our final decision. It shows that our final decision transition charge consists of a revenue and costs true-up of negative \$39.1 million (\$2018) plus a MAB adjustment of negative \$13.5 million (\$2018) giving a total transition charge of negative \$52.7 million (\$2018). This is a lower return to customers than our draft decision but more than double the amount proposed by AusNet Services in their revised proposal. The lower return is due to our final decision to accept more excess expenditure than in our draft decision (see section 4.2). In calculating the transition charge, we also used updated WACC and CPI numbers which were not available when we made our draft decision.²⁴

Table 4.1 Final decision transition charge (\$2018)

Revenue and costs	Metering asset base	Transition charge
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²¹ Department of Environment, Land, Water & Planning, *Submission on Advanced metering infrastructure Transition Charges Applications 2017*, 30 August 2016.

²² *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council*, cl 5L.4 and 5L.7 to 5L.12.

²³ AusNet Services, *AMI transition charges amended application model*, 2 November 2016, 'AMI transitional adjustment' tab.

²⁴ We will further update the forecast CPI and WACC values for actuals when we apply the transition charge through our 2018, 2019 and 2020 annual pricing approval processes.

	true-up	true-up	
Initial proposal	(25.5)	0.0	(25.5)
Draft decision	(42.0)	(20.1)	(62.1)
Revised proposal	(35.2)	11.9	(23.4)
Final decision	(39.1)	(13.5)	(52.7)

Source: AER analysis.

4.2 Reasons for final decision

Our final decision does not accept the proposed excess capital and operating expenditure included in AusNet Services' transition charges application. Our reasons are outlined below.

4.2.1 Expenditure excess

We accept \$56.9 million (\$2018) of AusNet Services' proposed 2014 and 2015 excess expenditure. This is about 62 percent of the \$92.4 million (\$2018) of expenditure AusNet Services sought to recover in its revised application. Table 4.2 sets out our final decision.

Table 4.2 Final decision on excess expenditure (\$m 2018)

	Initial application	Draft decision	Revised application	Final decision
Capex				
Meter supply	25.6	13.9	15.1	15.1
Meter installation	15.4	6.4	15.4	6.4
IT	33.3	5.7	33.3	13.0
Subtotal: capex	74.4	26.0	63.8	34.8
Opex				
Project management office (PMO)	5.8	1.1	5.8	1.1
Meter maintenance	2.0	2.0	2.0	2.0
Meter data management	4.8	4.8	4.8	4.8
Communications infrastructure	4.0	4.0	4.0	4.0
IT	8.5	8.5	8.5	8.5
Meter reading	3.4	1.7	3.4	1.7

Subtotal: opex	28.6	22.2	28.5	22.1
Total excess expenditure	103.0	48.2	92.4	56.9

Source: AER analysis.

4.2.2 Excess capital expenditure

We accept \$34.8 million (\$2018) of AusNet Services' revised excess capital expenditure proposal for 2014 and 2015. Our final decision is that this amount meets the requirements in the Order.

Meter supply

We accept \$15.1 million (\$2018) in excess capital expenditure for 'meter supply'. This is the full amount AusNet Services sought to recover in its revised application, but less than it originally proposed in its initial application. Table 4.3 sets out our final decision.

Table 4.3 Final decision on meter supply capex (\$m 2018)

	Initial application	Draft decision	Revised application	Final decision
2014	24.2	12.5	13.7	13.7
2015	1.4	1.4	4.1	1.4
Total	25.6	13.9	15.1	15.1

Source: AER analysis.

2014 meter supply

We accept \$13.7 million (\$2018) in excess expenditure for 2014 meter supply.

Table 4.4 sets out the components of our final decision. It shows that we accept both the total volume of metering units put forward by AusNet Services' revised application and the technology mix between 3G, WiMAX and mesh radio modules.

Table 4.4 Final decision on 2014 meter supply capex volumes

	Initial application	Draft decision	Revised application	Final decision
Meters	0	0	0	0
3G modules	122 579	4 376	10 064	10 064
WiMAX modules	23 277	0	0	0
Mesh radio modules	0	141 480	135 792	135 792
Total metering units	145 856	145 856	145 856	145 856

Source: AER analysis.

Our draft decision accepted the total volume of metering units in AusNet Services' initial application. We did not, however, accept the proposed technology mix. We accepted 4 376 communication modules with 3G capabilities instead of AusNet Services' initial proposal of 122 579. Consistent with past Tribunal and AER determinations,²⁵ we also did not accept any of AusNet Services' proposed volume of WiMAX communication modules. For each 3G and WiMAX communication module we did not approve, our draft decision accepted an additional mesh radio equivalent device. By doing this, we considered our draft decision to give effect to an efficient technology mix. Mesh radio has the lowest unit cost of the communication technology available to AusNet Services.

In response, AusNet Services' revised application accepted our draft decision to not approve any WiMAX communication modules. However, it sought a higher volume of 3G communication modules. It proposed 10 064 communication modules with 3G capabilities compared to 4 376 we accepted in our draft decision.

With respect to 3G communication modules, we accept that such technology may be an efficient technology choice in certain circumstances. These circumstances relate to lower density areas where the presence of few customers means that it is more cost effective to use 3G technology than install the infrastructure needed to operate a mesh radio solution. Consistent with this, our draft decision adopted the view that AusNet Services would require the same level of 3G communication modules as Powercor. We reached this conclusion on the basis that AusNet Services and Powercor operate networks with similar characteristics in terms of customer density and size. Since we observed that Powercor has a 3G infill of 3 percent, we applied that percentage to AusNet Services' 2014 meter supply proposal.²⁶

In its revised application, AusNet Services submitted that we should approve a 3G infill of 6.9 percent rather than the 3 percent accepted in our draft decision. To support its proposed higher level of 3G infill, AusNet Services provided us with a report from a spatial information consultant, 'we-do-IT'.²⁷ The report identifies that the terrain associated with AusNet Services' distribution area has the highest level of 'roughness' of all Victorian electricity distributors.²⁸ In the report, terrain roughness is identified by mapping the Victorian distributor's networks and observing the variability in the topographic surface.²⁹

Based on this information, we accept AusNet Services' submission that it has a more geographically rugged or diverse network than Powercor and that this may require greater reliance on 3G communications technology. We consider that our final decision should accept an allowance that is based on a 3G communications infill that is greater

²⁵ *Appeal by SPI Electricity Pty Ltd [2012] ACompT 11*; AER, *2012–15 AMI SPI Electricity Pty Ltd Budget and Charges Determination - amendments pursuant to the Australian Competition Tribunal's Orders*, February 2013.

²⁶ AER, *Draft AMI transition charges determination*, 20 September 2016, p. 27.

²⁷ *We-do-IT, SP AusNet Powercor region terrain comparison project*, 16 January 2013.

²⁸ *We-do-IT, SP AusNet Powercor region terrain comparison project*, 16 January 2013, p. 5.

²⁹ *We-do-IT, SP AusNet Powercor region terrain comparison project*, 16 January 2013, p. 8.

than the percentage used by Powercor. Our view is that the proposed 6.9 percent infill would reasonably reflect the number of 3G communication modules required by AusNet Services, given the ruggedness of its network terrain. Compared to our draft decision, this leads to an increase in AusNet Services' allowed excess expenditure of \$1.2 million (\$2018). It in turn leads to us accepting an excess expenditure allowance for 2014 meter supply of \$13.7 million (\$2018), which is about 10 percent more than the \$12.5 million (\$2018) we accepted in the draft decision.

2015 meter supply

We accept \$1.4 million (\$2018) in excess expenditure for 2015 meter supply.

Our draft decision accepted AusNet Services' proposed 2015 meter supply capex. AusNet Services has not sought to revise this aspect of its initial application. We affirm our draft decision. Table 4.5 sets out the volume of metering units making up our final decision.

Table 4.5 Final decision on 2015 meter supply capex volumes

	Initial application	Draft decision	Revised application	Final decision
Meters	12 570	12 570	12 570	12 570
3G modules	0	0	0	0
WiMAX modules	0	0	0	0
Mesh radio modules	0	0	0	0
Total metering units	12 570	12 570	12 570	12 570

Source: AER analysis.

Meter installation

Our final decision is to accept \$6.0 million (\$2018) in excess capital expenditure for meter and communication module installations. This is approximately 38 percent of AusNet Services' revised application to recover \$15.5 million (\$2018). Table 4.6 sets out our final decision.

Table 4.6 Final decision on meter installation capex (\$m 2018)

	Initial proposal	Draft decision	Revised application	Final decision
2014	14.3	5.4	14.3	5.4
2015	1.3	0.6	1.3	0.6
Total	15.5	6.0	15.5	6.0

Source: AER analysis.

2014 meter installation

We maintain our draft decision accepting \$5.4 million (\$2018) in excess capital expenditure for 2014 meter installation. Table 4.7 sets out the components of our final decision. It shows that we accept the volume of meter installations associated with ‘faults’ and ‘roll-out – meter installations’ but not ‘standalone 3G modules’. This leads to us substituting AusNet Services’ proposed 2014 volume of metering installations of 110 944 with 41 082.

Table 4.7 Final decision on 2014 meter installation capex volumes

	Initial proposal	Draft decision	Revised application	Final decision
Faults	4 060	4 060	4 060	4 060
Roll-out – Meter installations	37 022	37 022	37 022	37 022
Standalone 3G modules	69 862	0	69 862	0
Total	110 944	41 082	110 944	41 082

Source: AER analysis.

We affirm our draft decision accepting AusNet Services’ proposed volume of fault installations. In 2014, AusNet Services had approximately 692 949 meters³⁰ and therefore the proposed volume of 4 060 fault installations is equal to an annual failure rate of 0.6 percent. We consider this rate to be reasonable as it reflects the volume of faults which we accepted in our 2016–2020 distribution determination.³¹

In relation to standalone 3G module installations, and following further careful consideration of AusNet Services’ revised application, we maintain our position from the draft decision. We are not satisfied that the standalone 3G module installations AusNet Services made in 2014 reasonably reflect the efficient costs of a distributor providing AMI services, as required under the AMI Order. In our view, expenditure associated with AusNet Services’ standalone 3G installations is not prudent, and in accordance with the Order, we do not approve its recovery from customers as part of this final decision. In reaching this conclusion, we considered whether the additional \$9.0 million (\$2018) in excess expenditure to install the 3G modules reflects the efficient costs of a business providing AMI services. Applying this test, we consider that

³⁰ AusNet Services, *AMI Transition Charges Application*, 31 May 2016, p. 11.

³¹ AER, *Final decision: AusNet Services distribution determination 2016–20*, May 2016, p. 16–56.

a cost efficient business would have installed its meters and communication modules at the same time—thus avoiding any additional cost associated with having to make standalone module installations under a two-step process.

AusNet Services submitted it made standalone 3G module installations as part of a two-step process. First, AusNet Services installed a meter and then, at a later date, revisited 62 862 sites to make the standalone 3G module installations. We concluded, in our draft decision,³² that we consider this two-step process to be inefficient and, accordingly, it does not satisfy the requirements of the Order.³³

The Victorian Government in its submission made prior to our draft decision, took the same view.³⁴ The Victorian Government submitted that 'it considers the installation of meters without communications modules to be an inefficient practice — this practice required two site visits rather than one'.³⁵

In reaching our final decision, we have considered AusNet Services' rationale for implementing its two-step process as set out in its initial and its revised application. In particular, we have taken into account the nature of the rollout obligation and the nature of the installation undertaken by AusNet Services.

AusNet Services' applications

In its initial application and revised application, AusNet Services identifies a range of factors which it submits led to the delay in the roll-out and in turn led to AusNet Services adopting the two-step process. It refers to delays in the roll-out due to customer concerns and Government reviews which it states impacted the rate of meter installation.³⁶ It specifically refers to the then Government's announcement of a review in November 2010, the then Energy Minister's statement in January 2011 not ruling out suspension of the rollout, the April 2011 cost benefit analysis and the November 2011 Government announcement that the AMI Program would be continued.

In its initial application, AusNet Services also states:³⁷

Due to the 2011 Government review of the AMI roll-out, AusNet Services experienced delays to its meter deployment schedule. The 13 months of uncertainty between November 2010 and December 2011, led to increased customer opposition, increased refusals and no access sites...The delays and uncertainties also led to a delay in the delivery of the 3G communications modules as detailed earlier.

³² AER, *Draft AMI transition charges determination*, 20 September 2016, pp. 29–30.

³³ Victorian Advanced Metering Infrastructure Cost Recovery Order In Council, cl 5C.3.

³⁴ Department of Environment, Land, Water & Planning, *Submission on Advanced metering infrastructure Transition Charges Applications 2017*, 30 August 2016, p. 2.

³⁵ Department of Environment, Land, Water & Planning, *Submission on Advanced metering infrastructure Transition Charges Applications 2017*, 30 August 2016, p. 2.

³⁶ AusNet Services, *AMI Transition Charges Application*, 31 May 2016 p. 29.

³⁷ AusNet Services, *AMI Transition Charges Application*, 31 May 2016, p. 28.

Additionally, AusNet Services' initial application states that there was 'a significant decline in the number of meter installations during mid-late 2011 due to the uncertainty noted'.³⁸ This led to a 'catch up' post 2012.³⁹ AusNet Services submits that the impact of Government announcements on customer refusals and site access issues noting that refusals and no access rate peaked at 67% in 2011.⁴⁰ It concludes that the delays caused by customer concerns and Government reviews:⁴¹

led to the extension of the AMI roll-out. As mentioned in section 6.1 [of its initial application], there was a delay in the delivery of the 3G communications modules in 2014 as a result of the impact of policy changes. This prevented AusNet Services from installing the communications modules at the same time as the meters in 2013.

In its initial application, with reference to the delay in delivery it states:⁴²

As a result of the delays due to government policy changes, AusNet Services ordered the 3G communications modules in 2013.

However, AusNet Services experienced a significant delay in taking delivery of the 3G communications modules. This occurred because the 3G communications module was a brand new product, and as such had to undergo proof of concept and prototype testing. Although the factory ramped up its production in 2013, delivery still took approximately 4 months, preventing AusNet Services from installing the communications modules at the same time as the meters in 2013.

In its revised application, AusNet Services refers to the requirement imposed on the Victorian distributors to make a rebate payment to customers whose premises did not have an AMI meter installed on 30 June 2014, and pay a second rebate to customers who did not have a remotely connected meter by 31 March 2015.⁴³ AusNet Services states that it went ahead with installing meters without 3G communications modules because it was 'cognisant of increasing liability for rebate payments under the Order by delaying meter installations while it awaited delivery of the 3G communications modules'.⁴⁴

In both its applications it refers to Deloitte's ex-post review which states:⁴⁵

Delays in the AMI Program in 2011 and 2012 impacted the rate at which AusNet Services' AMI installation costs were incurred, with a significant number of meter installations being required in the later years beyond the budgeted

³⁸ AusNet Services, *AMI Transition Charges Application*, 31 May 2016, p. 28.

³⁹ AusNet Services, *AMI Transition Charges Application*, 31 May 2016, p. 28.

⁴⁰ AusNet Services, *AMI Transition Charges Application*, 31 May 2016, p. 30.

⁴¹ AusNet Services, *AMI Transition Charges Application*, 31 May 2016, p. 29.

⁴² AusNet Services, *AMI Transition Charges Application*, 31 May 2016, p. 24.

⁴³ Victorian Advanced Metering Infrastructure Cost Recovery Order In Council, cl 14AAA.2 and 14AAA.3.

⁴⁴ AusNet Services, *Submission on transition charges application draft decision*, 2 November 2016, p. 13.

⁴⁵ AusNet Services, *AMI Transition Charges Application*, 31 May 2016, p. 33.

allowance. While the challenges faced by AusNet Services in its communications technology and in the timely supply of 3G in-fill comms cards led to it revisiting some premises in 2014, despite additional travel and installation time per site that this required the total cost per completed installation is 9% below the AER accepted benchmark cost of \$151 per installation...

The nature of the rollout obligations...is also relevant to this cost category, as significant delays were caused by the policy uncertainty and the customer issues surrounding the AMI Program. Delays caused by the delivery of 3G cards are also associated with the nature of the rollout obligation under the OIC timetable...

AusNet Services also responded to the Victorian Government's submission in which the Victorian Government concurred with Jemena's view that the requirement to rollout meters by 31 December 2013 on a best endeavours basis:⁴⁶

...is neither an unqualified obligation to achieve the outcome prescribed in the AMI OIC, nor a warranty that it will be achieved - for example, a best endeavours obligation does not require JEN to select the option that best mitigates the risk of delay, in isolation of the costs associated with the implementing that option.

AusNet Services states that it agrees in principle with Jemena's position but 'the circumstances in which the best endeavours obligation applied and the performance against the obligation was assessed necessitated a different approach in practice'.⁴⁷ AusNet Services goes on to state that '[t]here was no clarification or guidance from the Victorian Government prior to 31 December 2013'.⁴⁸

AER view

Based on information before us, we are not satisfied that the excess expenditure reasonably reflects the efficient costs of providing the AMI services.

We do accept that the nature of the rollout resulted in delays and as AusNet Services points out, changes in Government policy in the period between November 2010 and December 2011 had a major impact upon installation at that time. This of course also impacted on the timing of other distributors' AMI roll-outs. AusNet Services therefore increased its installation rate in 2012 and 2013. However, we are not satisfied that these policy changes or period of uncertainty which affected the AMI roll-out in the 13 month period between November 2010 and December 2011 were the reason for higher installation costs in 2014. This is not only because there is no causal link specific to AusNet Services to support these conclusions, but also because installation

⁴⁶ Department of Environment, Land, Water & Planning, Submission on Advanced metering infrastructure Transition Charges Applications 2017, 30 August 2016, p. 2; citing Jemena Electricity Networks (Vic) Ltd, Advanced Metering Infrastructure, Transition Application, Public, 31 May 2016, p. 6.

⁴⁷ AusNet Services, *Submission on transition charges application draft decision*, 2 November 2016, p. 13.

⁴⁸ AusNet Services, *Submission on transition charges application draft decision*, 2 November 2016, p. 13.

of the meters under this two-step approach was occurring prior to that time (of policy uncertainty).

What is at issue is not the impact of the policy changes upon the continuation of the AMI rollout, but the narrower issue of why the installation that did occur only amounted to a first step. From the information available, it is apparent that AusNet Services was not in a position to install the complete working meter, even outside this period. The need for that second visit was therefore unlikely to be necessitated by the policy changes and more likely to be associated with the two stage approach AusNet Services actually adopted. For the same reason, we are not satisfied that the evidence supports a conclusion that the nature of the best endeavours obligation resulted in installation costs in 2014. Again, the installation in question is installation limited to the 3G modules only.

Based on the available information, it is reasonable to conclude that the two stage installation approach was related to AusNet Services choice of meter and supplier, matters within its control. As Deloitte states (in part): '...the challenges faced by AusNet Services in its communications technology and in the timely supply of 3G infill comms cards led to it revisiting some premises in 2014'.⁴⁹

In terms of the meter technology, AusNet Services made the choice to use a modular meter design. This design required the distributor to procure AMI meters and communication modules separately. Given that other meter technology was available such as the bundled units procured by, for example, Powercor, we consider that this option would have been available to AusNet Services also. Powercor did not incur any excess expenditure in 2014 and 2015 for its 3G infill. Once AusNet Services had chosen its particular meter technology, we consider that it would have been prudent for AusNet Services' to have factored into its roll-out strategy any consequences associated with its choice. When the timing of the supply and installation are taken into account, we are not satisfied that AusNet Services managed those risks appropriately.

With respect to suppliers, AusNet Services made the choice to select the manufacturer which provided the 3G communication modules. In making this choice, AusNet Services also made the decision to enter into an agreement with its supplier as late as April 2013, well after the period of policy uncertainty. We consider the timing of this agreement also contributed to excess expenditure. This is because it only gave AusNet Services a constrained period, approximately 14 months, to take delivery of its 3G modules and have them installed with an AMI meter by the 30 June 2014 deadline.⁵⁰ Given that the type of 3G modules which AusNet Services procured were a 'brand new product'⁵¹ which had yet to 'undergo proof of concept and prototype testing'⁵² we consider AusNet Services' did not act prudently in providing AMI services. Our view is that a prudent operator would have entered into arrangements with its supplier at an

⁴⁹ AusNet Services, *AMI Transition Charges Application*, 31 May 2016, p. 33.

⁵⁰ Victorian Advanced Metering Infrastructure Cost Recovery Order In Council, cl 14AAA.2.

⁵¹ AusNet Services, *Transition charges application - AER information request #1*, 15 July 2016, p. 3.

⁵² AusNet Services, *Transition charges application - AER information request #1*, 15 July 2016, p. 3.

earlier date, enabling it to install both its meters and 3G modules simultaneously as other distributors have done.

To further support its proposed excess expenditure relating to standalone 3G communication modules, AusNet Services notes that its installation cost for the entirety of the AMI roll-out period was \$138.00 (\$nominal) per meter. It states that this 'unit cost is 9% below the efficient benchmark determined by the AER in its Final Decision for the 2013 Expenditure Excess Application'.⁵³ We have considered this submission, but are of the view that a distributor's unit cost is not necessarily indicative of overall efficiency. As noted by Jemena in its revised application, a distributor's unit cost may be higher (or lower) than an assessed benchmark on account of the distributor performing less (or more) of a set activity.⁵⁴ We further find that AusNet Services' unit cost may be lower due to the reduced time to make standalone communication module installations, compared to the time to install a meter and communication module.⁵⁵

We consider AusNet Services' choices of meter and supplier to have a causal link to the need to implement standalone 3G module installations which resulted in higher costs. With respect to such choices, we note that the Essential Services Commission Victoria observed deficiencies in AusNet Services' (formerly SP AusNet) management decisions. In October 2014, it stated:⁵⁶

The Commission notes that SP AusNet has referred to political uncertainty, customer hostility, demanding timeframes and complex systems and interfaces as particular circumstances impeding its rollout. The audits of the other distributors have reported similar issues and SP AusNet provided no evidence that it was disproportionately affected when compared to other distributors. These issues alone cannot account for an installation rollout of 58 per cent by 31 December 2013. The Commission considered that particular circumstances that surrounded SP AusNet's program arose from the distributor's own management and implementation processes.

Our final decision is to accept \$5.4 million (\$2018) in excess capital expenditure for 2014 meter installations. This final decision deducts the 69 862 standalone 3G communication module installations from AusNet Services' proposed \$14.3 million (\$2018) in expenditure, and accepts 4 060 installations associated with meter faults and 37 022 meter installations associated with the on-going mass roll-out program.

2015 meter installations

We accept \$1.1 million (\$2018) in excess capital expenditure for 2015 meter installations. Table 4.8 sets out the components of our final decision. It shows that

⁵³ AusNet Services, *Submission on transition charges application draft decision*, 2 November 2016, p. 13.

⁵⁴ Jemena, *Submission on transition charges application draft decision*, 2 November 2016, p. 21.

⁵⁵ AusNet Services, *Submission on transition charges application draft decision*, 2 November 2016, p. 13.

⁵⁶ Essential Services Commission, *Compliance with AMI regulatory obligations as at 31 December 2013*, Victorian Electricity Distributors, Final Report, October 2014.

AusNet Services proposed a level of volumes associated with ‘faults’, which we have accepted.

Table 4.8 Final decision on 2014 meter installation capex volumes

	Initial proposal	Draft decision	Revised application	Final decision
Faults	3 319	3 319	3 319	3 319
Roll-out – Meter installations	0	0	0	0
Standalone 3G modules	0	0	0	0
Total	3 319	3 319	3 319	3 319

Source: AER analysis.

IT capex

We accept \$13.0 million (\$2018) in excess IT capital expenditure. Table 4.9 shows that our final decision accepts more excess expenditure for IT than our draft determination, but less than the \$33.3 million (\$2018) AusNet Services sought.

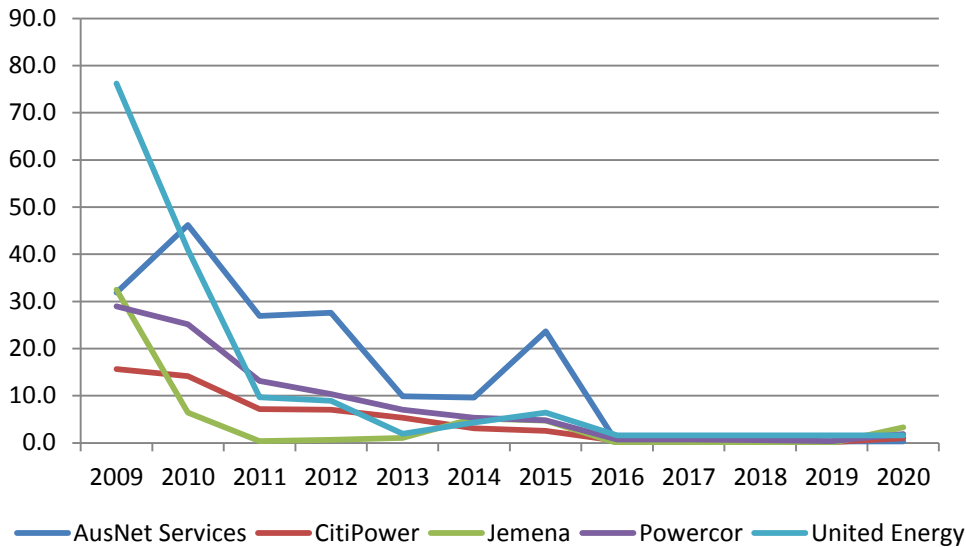
Table 4.9 Final decision on AusNet Services’ IT capex (\$m, 2018)

	Initial application	Draft decision	Revised application	Final decision
IT capex	33.3	5.7	33.3	13.0

Source: AER analysis.

AusNet Services incurred more capital expenditure on its IT systems than any other Victorian distributor. Figure 4.1 compares AusNet Services’ IT capital actual and forecast expenditure profile from 2009 to 2020. It shows that from 2009 to 2015 AusNet Services actual IT capital expenditure exceeded all of the other Victorian distributors, except in 2009 when United Energy incurred most of its IT costs in a single year. As with all the Victorian distributors, AusNet Services’ capital expenditure on its IT systems is forecast to decline in the 2016–2020 period.

Figure 4.1 Victorian electricity distributors IT capex (\$m 2018)



Source: AER analysis.

In our draft decision, we assessed AusNet Services’ proposed 2014 and 2015 excess IT capex by benchmarking it against a comparator we considered efficient. When choosing the comparator for conducting our benchmarking analysis, our draft decision selected Powercor’s and CitiPower’s **combined** IT capex.⁵⁷ This was consistent with advice provided by Energeia.⁵⁸

At the draft decision stage, our starting point for our selection of the combined IT capex of Powercor and CitiPower as the benchmark was that Powercor’s IT capex on its own would be a reasonable comparator for AusNet Services.⁵⁹ This is because Powercor has similar network size and characteristics to AusNet Services and about the same number of customers.⁶⁰ We nonetheless did not use Powercor’s IT capex by itself because Powercor shares its IT system, and thus the associated costs, with CitiPower.⁶¹ This led to our draft decision selecting the combined IT capex of Powercor and CitiPower as a conservative comparator for benchmarking, on the basis that this combined total would adjust for Powercor’s ability to share fixed IT costs with CitiPower.

In response, AusNet Services’ revised application submits that its IT excess expenditure proposal should not be assessed using benchmarking techniques. In

⁵⁷ AER, *Draft AMI transition charges determination*, 20 September 2016, pp. 31–32.

⁵⁸ Energeia, *Review of 2017 AMI transition applications*, August 2016, p. 34.

⁵⁹ AER, *Draft AMI transition charges determination*, 20 September 2016, p. 32.

⁶⁰ AER, *Draft AMI transition charges determination*, 20 September 2016, p. 32.

⁶¹ AER, *Draft AMI transition charges determination*, 20 September 2016, p. 32.

AusNet Services' view 'IT capex is too difficult and subjective to benchmark due to various factors'.⁶² These factors include:

- differences in hardware and software
- differences in technology and software obsolescence
- differences in business needs
- differences in asset age and IT capex lifecycle
- differences in system capacity and functionality.⁶³

AusNet Services' revised application did not elaborate on why these factors make it 'too difficult' to benchmark IT capital expenditure. In terms of each factor, we accept that there is likely to be hardware and software differences between AusNet Services' IT systems and the other Victorian distributors. Similarly, we accept that there is likely to be differences in technology and software obsolescence as well as variations in business needs, IT lifecycles, system capacity and functionality. We do not, however, consider that these factors undermine the use of benchmarking. Ultimately, our task is to assess the efficiency of the costs relating to AusNet Services' excess expenditure on its IT systems. We consider benchmarking to provide a reasonable basis for making that assessment. Additionally, AusNet Services' revised application referred to comments from Energeia in relation to this decision, and from the AER in relation to a past decision, that AusNet Services had the option of developing a joint IT program with Jemena.⁶⁴ To clarify, these comments do not form part of our reasoning for this decision.

With respect to AusNet Services' benchmark efficient comparator, our final decision is to continue using Powercor's and CitiPower's combined IT capital expenditure. Our view is that a claim of system differences does not support AusNet Services' position that IT capital expenditure cannot be benchmarked or benchmarked against Powercor's and CitiPower's combined total. We consider that our approach to benchmarking AusNet Services against Powercor and CitiPower is consistent with the Order. The Order requires us to take into account the expenditure of a benchmark efficient entity over part of, or all of, 2009–2015.⁶⁵ The Order also provides that the starting point for benchmarking is not necessarily what a distributor has in fact done but may begin with what a hypothetical benchmark efficient entity would have done.⁶⁶

In applying this approach, we considered the time horizon over which we should conduct our benchmarking analysis and whether it should be expanded in response to AusNet Services' revised application. At the draft decision stage, we assessed the efficiency of AusNet Services' IT capital expenditure in 2014 and 2015 by

⁶² AusNet Services, *Submission on transition charges application draft decision*, 2 November 2016, p. 14.

⁶³ AusNet Services, *Submission on transition charges application draft decision*, 2 November 2016, pp. 14–15.

⁶⁴ AusNet Services, *Submission on transition charges application draft decision*, 2 November 2016, p. 15.

⁶⁵ *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council*, cl 51.8A

⁶⁶ *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council*, cl 51.8B(c)(iii).

benchmarking the expenditure against the costs Powercor and CitiPower incurred in 2014 and 2015 plus the 2016–2020 regulatory control period. We included the 2016–2020 period to take differences in IT capital expenditure lifecycles into account.⁶⁷ This is consistent with the analysis performed by Energeia, which stated that by including the 2016–2020 period it 'considered whether [AusNet Services] IT capex was simply bringing forward investments that other DNSPs, facing similar circumstances had included in the 2016–2020 submissions instead'.⁶⁸

For the final decision, we have decided to expand the time horizon for benchmarking to incorporate the entire AMI roll-out period (2009–15), while still including the 2016–2020 regulatory control period. This captures all years of AMI related IT capital expenditure and means that any costs AusNet Services incurred above our selected benchmark would be due to inefficiencies, rather than a difference in the timing of when the costs were incurred. Table 4.10 sets out the results of our benchmarking analysis. It shows that AusNet Services' IT capital expenditure in the benchmarking period, from 2009 to 2020, is greater than Powercor's and CitiPower's combined total.

Table 4.10 Benchmarking of AusNet Services' IT capex

	2009–13	2014 and 2015	2016–20	Total
AusNet Services	142.5	33.3	0.9	176.7
Powercor and CitiPower	134.0	15.8	6.6	156.4

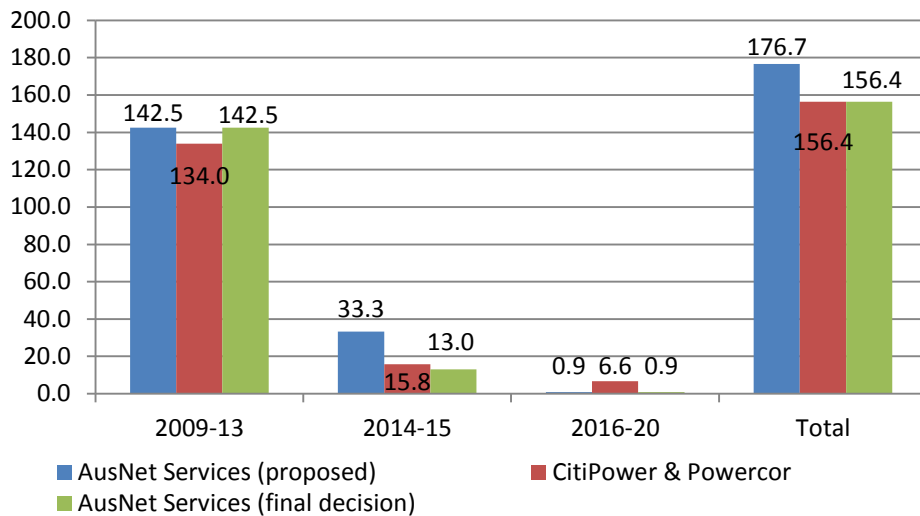
Source: AER analysis.

In light of the analysis in Table 4.2, we consider that AusNet Services' proposed excess IT capital expenditure in 2014 and 2015 should be adjusted. This is to a level where AusNet Services recovers no more IT capital expenditure over the 2009–2020 benchmarking period than Powercor's and CitiPower's combined IT capital expenditure. When this approach is taken we calculate that AusNet Services' IT capex in 2014 and 2015 should be \$13.0 million (\$2018). Figure 4.2 shows that when AusNet Services recovers this amount, its total IT capital expenditure over the 2009 to 2020 benchmarking period is equal to the combined IT capital expenditure of Powercor and CitiPower.

⁶⁷ This accounts for the timing of the investment in IT systems in the earlier period compared to other Victorian businesses, facing similar circumstances who had deferred to a later period and included in their 2016–2020 distribution determination.

⁶⁸ Energeia, *Review of 2017 AMI transition applications*, August 2016, p. 34.

Figure 4.2 Benchmarking of AusNet Services' IT capex



Source: AER analysis.

Our final decision is to accept a total of \$13.0 million (\$2018) in excess IT capex for 2014 and 2015. This is equal to about 39 percent of the \$33.3 million (\$2018) in excess IT capex proposed by AusNet Services. It is, however, around \$7.3 million (\$2018) more than we accepted in our draft decision.

Operating expenditure

We maintain our draft decision accepting \$22.2 million (\$2018) in excess operating expenditure. Table 4.11 sets out each of the cost categories which make up AusNet Services' initial and revised applications. It shows that both our draft and final decisions do not accept AusNet Services' proposed customer service and project management operating expenditure. We also do not accept AusNet Services' proposed excess expenditure for meter reading. We have accepted the excess operating expenditure associated with all other cost categories.

Table 4.11 Final decision on excess opex expenditure (\$m 2018)

	Initial proposal	Draft decision	Revised application	Final decision
Customer service and project management	5.8	1.1	5.8	1.1
Meter maintenance	2.0	2.0	2.0	2.0
Meter data management	4.8	4.8	4.8	4.8
Communications infrastructure	4.0	4.0	4.0	4.0
IT	8.5	8.5	8.5	8.5
Meter reading	3.4	1.7	3.4	1.7

Total opex	28.6	22.2	28.6	22.2
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Source: AER analysis.

In our draft decision, we did not accept AusNet Services' proposed excess operating expenditure for customer service and project management. We accepted \$1.1 million (\$2018) in place of AusNet Services' proposed \$5.8 million (\$2018). The driver of this reduced allowance was the application of our 2012–15 Approved Budget unit prices for customer service and project management, adjusted for CPI and wage inflation.⁶⁹ We considered these unit prices to reflect the efficient costs of a distributor providing AMI services and accordingly we applied them to the volume of AusNet Services' activities associated with customer service and project management.⁷⁰ This was consistent with advice that Energeia provided to us.⁷¹

Our draft decision accepted \$1.7 million (\$2018) in excess meter reading operating expenditure. This was less than \$3.4 million (\$2018) which AusNet Services sought to recover in its application. To derive our substitute, we considered the meter reading allowance we accepted for AusNet Services in our 2016–2020 Victorian distribution determination. Our view was that the efficient meter reading operating expenditure was the allowance we approved for AusNet Services' 2016 year of that determination. This was on the basis that we considered AusNet Services' 2016 meter reading allowance reflected the efficient costs of a prudent distributor providing AMI services at the closing stage of the roll-out in 2014.⁷² This was based on Energeia's advice to us on AusNet Services' excess operating expenditure proposal.⁷³

In response to our draft decision, AusNet Services' revised application describes the circumstances leading up to it incurring the excess operating expenditure. With respect to customer service and project management, AusNet Services' revised application states that policy uncertainties led to the additional costs it has sought to recover via the transition charge. AusNet Services states that 'the volume of customer refusals and no access issues as well as the uncertainties of the AMI Program resulted in the inability to close out meter routes in 2014'.⁷⁴ Similarly, it raises policy uncertainty as the driver for its excess expenditure relating to customer service and project management. It states the 'delays in the AMI Program caused by policy uncertainty also resulted in the need for AusNet Services to maintain its project management office (PMO) function in 2014 to ensure adequate staff with historical knowledge and experience were available to manage AusNet Services' continued compliance with the roll-out obligations'.⁷⁵

⁶⁹ AER, *Draft AMI transition charges determination*, 20 September 2016, p. 34.

⁷⁰ AER, *Draft AMI transition charges determination*, 20 September 2016, p. 34.

⁷¹ Energeia, *Review of 2017 AMI transition applications*, August 2016, p. 35.

⁷² AER, *Draft AMI transition charges determination*, 20 September 2016, p. 34.

⁷³ Energeia, *Review of 2017 AMI transition applications*, August 2016, p. 35.

⁷⁴ AusNet Services, *Submission on transition charges application draft decision*, 2 November 2016, p. 20.

⁷⁵ AusNet Services, *Submission on transition charges application draft decision*, 2 November 2016, p. 20.

In taking its revised application into consideration, we accept AusNet Services' submission that policy uncertainty would have led to it incurring additional costs in relation to its customer service and project management operating expenditure. We also consider that such uncertainty would have led to further costs in relation to meter reading. However, we maintain our draft decision in respect of both categories of excess expenditure. Our view is that the 2012–15 Approved Budget unit prices for customer service and project management should be the basis for calculating AusNet Services' excess expenditure for that cost category. Likewise, we maintain the view that AusNet Services' meter reading excess operating expenditure should be determined according to the allowance we approved in its 2016–2020 Victorian distribution determination. This is how we quantified AusNet Services' excess operating expenditure in our draft decision.⁷⁶ AusNet Services' revised application has not expressly challenged this method of quantification and, accordingly, we affirm our draft decision.

We maintain our draft decision accepting \$22.2 million (\$2018) in excess operating expenditure. This includes \$19.4 million (\$2018) for meter maintenance, overheads, meter data management, communications infrastructure maintenance and IT operating expenditure. It also includes \$1.7 million (\$2018) for meter reading and \$1.1 million (\$2018) for customer service and project management costs.

⁷⁶ AER, *Draft AMI transition charges determination*, 20 September 2016, p. 34.

5 CitiPower

We accept a negative transition charge for CitiPower of \$1.8 million (\$2018).

5.1 Final decision

Our final decision is effectively the same as our draft determination on CitiPower's initial application. We note that CitiPower did not submit a revised application.

The only difference from our draft determination and this final decision is we have applied updated WACC and CPI values.⁷⁷ Table 5.1 sets out our final decision on CitiPower's transition charge.

Table 5.1 Final decision transition charge (\$2018)

	Revenue and costs true-up	Metering asset base true-up	Transition charge
Initial proposal	(0.6)	(1.2)	(1.8)
Draft decision	(0.6)	(1.2)	(1.8)
Revised proposal	–	–	–
Final decision	(0.6)	(1.2)	(1.8)

Source: AER analysis.

Note: Our draft decision accepted a negative transition charge of \$1,818,827 (\$2018). Using updated WACC and CPI values, our final decision approves a marginally less return of revenue to customers, totalling \$1,815,012 (\$2018).

In 2014 and 2015, CitiPower spent less than its allowed AMI budget. It therefore did not submit an application for the recovery of excess expenditure. Instead, as required,⁷⁸ CitiPower provided us with audit reports certifying that its actual expenditure in 2014 and 2015 was within scope and equal to the amount claimed.⁷⁹

When calculating the negative transition charge of \$1.8 million (\$2018), we have factored in CitiPower spending less than its AMI budget in 2014 and 2015. By doing this, customers will have the budgeted costs which CitiPower did not incur returned to them via the transition charge.

⁷⁷ We will further update the forecast CPI and WACC values for actuals when we apply the transition charge through our 2018 annual pricing approval process.

⁷⁸ *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council*, cl 51.3.

⁷⁹ Deloitte, *Independent auditor's report to the directors of CitiPower Pty*, 19 August 2015; Deloitte, *Independent auditor's report to the directors of CitiPower Pty*, 19 May 2016.

6 Jemena

We accept Jemena's revised transition charge application.

Our draft decision accepted a negative transition charge of \$16.5 million (\$2018). In response Jemena made a submission to us proposing a return to customers of \$7.7 million (\$2018). We have taken this submission into account and have accepted Jemena's revised transition charge.

6.1 Final decision

Our final decision provides for a negative transition charge of \$7.7 million (\$2018).

Under the Order, the calculation of Jemena's transition charge must consist of a revenue and costs true-up and a MAB adjustment (see section 3.1).⁸⁰ Jemena's initial application included the revenue and costs true-up in the calculation of its proposed transition charge but did not include the MAB adjustment. Its submission on our draft decision, however, accepted that the Order requires a MAB adjustment.⁸¹

Table 6.1 sets out the components that make up our final decision. It shows that our final decision transition charge consists of a revenue and costs true-up of negative \$2.4 million (\$2018) plus a MAB adjustment of negative \$5.3 million (\$2018) giving a total transition charge of negative \$7.7 million (\$2018). This is a lower return to customers than our draft decision but around four times higher than initially proposed by Jemena. The lower return is due to our final decision to accept more excess expenditure than in our draft decision (see section 6.2). In calculating the transition charge, we also used updated WACC and CPI numbers which were not available when we made our draft decision.⁸²

Table 6.1 Final decision transition charge (\$2018)

	Revenue and costs true-up	Metering asset base true-up	Transition charge
Initial proposal	(1.7)	0.0	(1.7)
Draft decision	(7.0)	(9.6)	(16.5)
Revised proposal	(2.4)	(5.3)	(7.7)
Final decision	(2.4)	(5.3)	(7.7)

Source: AER analysis.

⁸⁰ *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council*, cl 5L.4 and 5L.7 to 5L.12.

⁸¹ Jemena, *Submission on transition charges application draft decision*, 2 November 2016, p. vii.

⁸² We will further update the forecast CPI and WACC values for actuals when we apply the transition charge through our 2018, 2019 and 2020 annual pricing approval process.

6.2 Reasons for final decision

Our final decision accepts the proposed excess capital and operating expenditure included in Jemena's transition charges application. Our reasons are outlined below.

6.2.1 Expenditure excess

Our final decision accepts Jemena's revised excess expenditure proposal of \$11.6 million (\$2018). Table 6.2 sets out our final decision. It shows that we have approved more excess expenditure than at the draft determination stage. Nonetheless, our final decision accepts less excess expenditure than Jemena actually incurred and which it sought to recover in its initial application.

Table 6.2 Final decision on excess expenditure (\$m 2018)

	Initial application	Draft decision	Revised application	Final decision
Capex				
Meter supply	1.6	1.6	1.6	1.6
Meter installation	8.2	4.8	6.3	6.3
Back office	2.4	1.2	2.4	2.4
Subtotal: capex	12.2	7.6	10.5	10.5
Opex				
Meter data	2.5	0.3	1.1	1.1
Subtotal: opex	2.5	0.3	1.1	1.1
Total excess expenditure	14.7	7.9	11.6	11.6

Source: AER analysis.

6.2.2 Excess capital expenditure

We accept \$10.5 million (\$2018) of Jemena's revised excess capital expenditure proposal for 2014 and 2015. Our final decision is that this amount meets the requirements in the Order to be recovered through the transition charge.

Meter supply

We accept \$1.6 million (\$2018) in excess capital expenditure for 'meter supply'. This is the full amount that Jemena sought to recover for additional metering units. Table 6.3 sets out our final decision.

Table 6.3 Draft decision on meter supply capex (\$m 2018)

	Initial application	Draft decision	Revised application	Final decision
2014	2.8	2.8	2.8	2.8
2015	(1.1)	(1.1)	(1.1)	(1.1)
Total	1.6	1.6	1.6	1.6

Source: AER analysis.

At the draft decision stage, Jemena proposed—and we accepted—that its excess capital expenditure for meter supply was due to delays in its AMI roll-out that were outside of its control.⁸³ Our view is that there were government policy and market changes which would have caused delays. This is consistent with our determinations for both AusNet Services and United Energy.⁸⁴ We also note that benchmarking conducted by Energeia observed that Jemena's 2009–15 meter supply capex was reasonably efficient.⁸⁵ We accordingly affirm our draft decision accepting Jemena's proposed meter supply capex of \$1.6 million (\$2018).

Meter installation

We accept Jemena's revised proposed \$6.3 million (\$2018) in excess capital expenditure for meter installations. Table 6.4 sets out our final decision.

Table 6.4 Draft decision on meter installation capex (\$m 2018)

	Initial application	Draft decision	Revised application	Final decision
2014	8.0	4.5	6.1	6.1
2015	0.3	0.3	0.3	0.3
Total	8.2	4.8	6.3	6.3

Source: AER analysis.

We accepted Jemena's proposed volume of new meter installations at the draft decision stage.⁸⁶ Our view was that changes to government policy would have pushed out the installation of meters past the initially scheduled completion date (December 2013). We accordingly accepted excess expenditure based on an additional 26 782 installations in 2014 and a further 1 103 installations in 2015.

⁸³ Jemena, *AMI Transition Charges Application*, 31 May 2016, p. 30.

⁸⁴ AER, *Draft decision: AMI transition charges applications*, September 2016, p. 26 & p. 40.

⁸⁵ Energeia, *Review of AMI transition applications*, September 2016, pp. 28–29.

⁸⁶ AER, *Draft decision: AMI transition charges applications*, September 2016, p. 48.

Though we accepted Jemena’s proposed volume of metering installations, our draft decision rejected its proposed unit costs. In response, Jemena has revised its 2014 installation unit costs. Table 6.5 shows that this revised amount is \$208.17 (\$nominal) per installation. This is lower than Jemena’s actual 2014 installation unit cost of \$277.00 (\$ nominal) put forward in its initial application. Our final decision is to accept Jemena's revised installation unit cost.

Table 6.5 Final decision on metering installation unit costs (\$ nominal)

	Initial proposal	Draft decision	Revised application	Final decision
2014 installation unit costs	277.00	132.00	208.17	208.17

Source: AER analysis.

We accept the revised unit cost for metering installations in light of additional information provided in Jemena's revised application. This information responded to the construction of a benchmark unit cost in our draft decision.

At the draft decision stage, we applied benchmarking analysis performed by Energeia. It identified that for metering installations the benchmark efficient entity (BEE) was United Energy. Based on Energeia’s analysis we substituted Jemena’s installation unit cost of \$277.00 with United Energy’s actual 2014 unit cost of \$132.00 (\$ nominal). In light of the information in Jemena's revised application, we accept that there were differences between Jemena's and United Energy's metering installation programs in 2014 and based on this information, we have taken these into account in the benchmarking applied to Jemena. These differences relate to the stage at which Jemena was in its AMI roll–out program compared to United Energy.

In 2014, Jemena installed 26 782 meters whereas United Energy installed 117 701, or 439 percent more. Jemena considers that this must be taken into account when benchmarking its unit costs because there are greater efficiencies available to a distributor when it is installing a larger volume of meters. It also submits that meter density should be taken into account. With respect to this, Jemena’s and United Energy’s territories cover 4 515 km² and 7 483 km² respectively. Jemena notes that when 2014 volumes are overlaid on each distributor’s territory, it arrives at a meter density of 5.9⁸⁷ for Jemena and 15.7⁸⁸ for United Energy. This means that ‘an installer in [Jemena’s] area is installing a meter every 0.169km (1/5.9) whereas, in United Energy’s area, it is one every 0.063 km (1/15.7)’.⁸⁹ In percentage terms, these

⁸⁷ 26 782 meters / 4 515 km² = 5.9 meters per km².

⁸⁸ 117 701 meters / 7 483 km² = 15.7 meters per km².

⁸⁹ Oakley Greenwood, *AMI transition charges review: Prepared for Jemena Electricity Networks*, 2 November 2016, p. 11.

calculations reveal that Jemena's meter density was 266 percent worse than United Energy, which is significant with respect to travel times between sites.⁹⁰

Using this information, Jemena's submission states that in 2014 its installation unit costs were more reflective of a 'business as usual' (BAU) scenario.⁹¹ This is opposed to the mass roll-out (MRO) program under which United Energy was still operating. Jemena submits that given its circumstances, its installation unit costs should be based on the post-MRO rates which the AER approved in its 2016–2020 Victorian distribution determination.⁹² These unit costs reflect a BAU situation whereby Jemena would not have access to the economies of scale or shorter travel times that are associated with a MRO scenario. In effect, Jemena's submission is that it was finalising its MRO at an earlier date than United Energy and that this difference in its roll-out schedule accounts for why Jemena had higher unit costs. Put simply, the unit cost to Jemena of installing 26 782 meters in 2014 is higher than the unit cost of United Energy installing 117 701 meters in 2014.

We accept Jemena's submission that its roll-out schedule was at a more advanced stage than United Energy's and that this would have led to higher unit costs. Our view is that given the advanced stage of Jemena's roll-out in 2014 it is reasonable to accept a unit cost which is reflective of a post-MRO, or BAU, phase. Jemena's revised application notes two possible approaches to constructing such a unit cost. Table 6.6 sets out each of these approaches and their value.

Table 6.6 Jemena's proposed construction of installation unit costs

	Option	Unit cost (\$ nominal)
Option 1	Apply the unit cost the AER approved in its 2016–2020 Victorian distribution determination for Jemena.	204.09 per meter
Option 2	Use the unit cost we applied in our draft transition charge determination, but apply an uplift to it which adjusts for Jemena's change in meter density in 2014.	212.25 per meter

Source: Jemena, *Submission on transition charges application draft decision*, 2 November 2016, p. 26.

Our view is that both options set out in Table 6.6 are reasonable. The unit cost we accepted in our 2016–2020 Victorian determination took into consideration Jemena moving into a post-MRO stage of its smart meter operations. It is reflective of Jemena's circumstances in 2014 when it was finalising its AMI roll-out. Similarly, we consider using the unit cost we applied in our draft transition charge decision with an uplift applied to it, to be a reasonable approach. This is because the application of the uplift would calculate a unit cost which reflects the decreasing meter density of Jemena in 2014, when it was installing the final meters in its roll-out program.

⁹⁰ Oakley Greenwood, *AMI transition charges review: Prepared for Jemena Electricity Networks*, 2 November 2016, p. 2.

⁹¹ Jemena, *Submission on transition charges application draft decision*, 2 November 2016, p. 26.

⁹² Jemena, *Submission on transition charges application draft decision*, 2 November 2016, p. 26.

Given each option is reasonable, we accept Jemena's proposal in its revised application to construct a benchmark meter installation rate that is based on a simple average of both. This leads to a unit cost of \$208.17 (\$ nominal). By accepting this unit cost, along with the volume of installations made in 2014,⁹³ our final decision is to approve Jemena's proposed excess expenditure proposal for meter installations of \$6.3 million (\$2018).

Mass roll-out back office

Our final decision approves Jemena's proposed \$2.4 million (\$2018) in meter roll-out capital expenditure incurred in 2014. This is in comparison to our draft decision which accepted \$1.3 million (\$2018).

At the draft decision stage, we accepted that Jemena would have incurred additional back office capital expenditure activities in 2014. However, we did not accept the proposed unit costs making up those activities. Instead, we applied the unit costs, updated for labour cost escalation that we had accepted for Jemena in our 2012–15 Approved Budget. This reflected advice we received from Energeia.⁹⁴ The unit cost we accepted was \$40.20 (\$nominal) per meter.

In its revised application, Jemena stated that the unit rate which we applied in our draft decision did not reflect the period under review. It asserts that in 2014 and 2015 Jemena had entered a phase of 'largely BAU or high cost residual MRO activities, where scale efficiencies are depleted and [Jemena] is having to address the residual complex jobs and difficult customers using BAU processes'.⁹⁵ Such loss of scale and increase in difficult customers, according to Jemena, led to higher unit costs.

On review of Jemena's revised application, we accept Jemena's volume of 2014 and 2015 back office activities was 26 782 and 1 103, respectively. Such low volumes are, as Jemena has proposed, more reflective of a post-MRO phase of a smart meter program. We further accept Jemena's revised application to have the back office unit cost we approved in our 2016–2020 Victorian determination. This unit cost is reflective of Jemena's circumstances in 2014 and 2015 when it was finalising its AMI roll-out and was experiencing depleted economies of scale.

When we apply the proposed unit rate in Jemena's revised application to the volume of back office activities we accepted at the draft determination stage, we approve the proposed \$2.4 million (\$2018) in 2014 and 2015 excess expenditure.

Meter data

We approve Jemena's proposed \$1.1 million (\$2018) in excess operating expenditure for meter reading. By contrast, our draft decision accepted \$0.3 million (\$2018).

⁹³ AER, *Draft decision: AMI transition charges applications*, September 2016, p. 48.

⁹⁴ Energeia, *Review of 2017 AMI transition applications*, August 2016, p. 30.

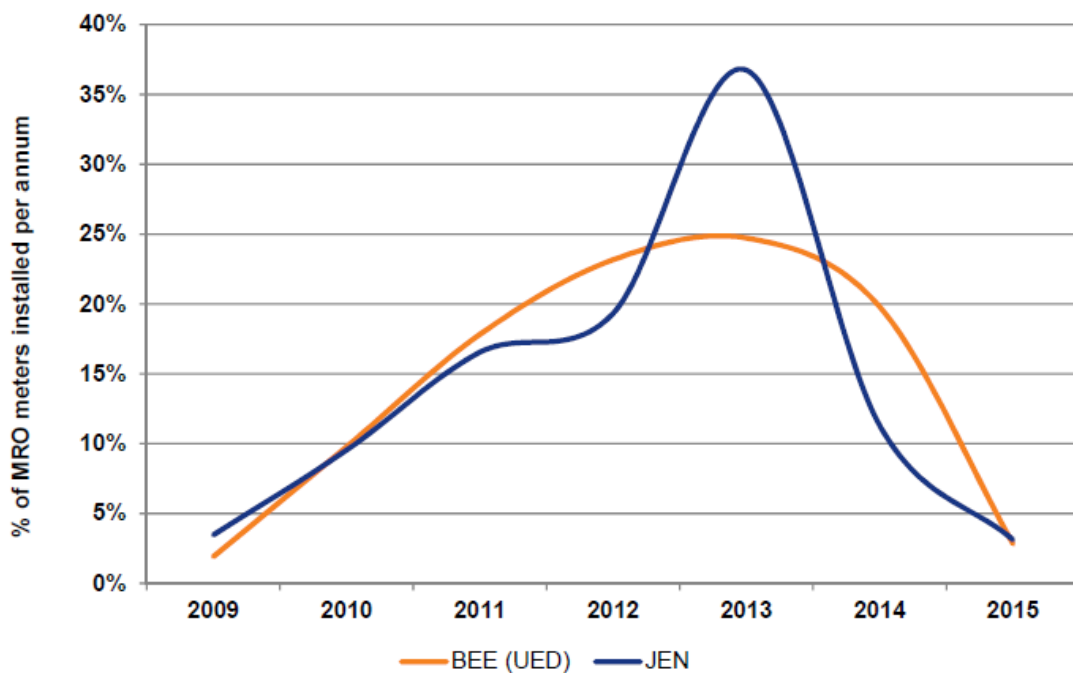
⁹⁵ Jemena, *Submission on transition charges application draft decision*, November 2, p. 27.

In our draft decision, our assessment of Jemena's excess operating expenditure for meter reading applied benchmarking analysis performed by Energeia. This analysis observed that Jemena's meter reading operating expenditure was the highest of all Victorian distributors and substantially greater than United Energy's expenditure, which Energeia identified as the efficient benchmark.

In response, Jemena's revised application submitted that the benchmarking approach applied in our draft decision did not adjust for Jemena being in a more advanced stage in its AMI roll-out compared to United Energy. It submitted that this was significant because, by being in the final stages of its roll-out, Jemena had entered 'largely BAU or high cost residual MRO activities, where scale efficiencies are depleted'.⁹⁶

On review, we accept Jemena's revised application. Figure 6.1 compares Jemena's and United Energy's meter installation profiles. It shows that in 2014 United Energy is likely to have had access to large economies of scale in terms of its meter reading costs. This is given that United Energy still had 20 percent of its AMI roll-out to complete. By comparison, in 2014 Jemena had largely completed its AMI roll-out. This would have led to lower economies of scale compared to United Energy and, accordingly, higher meter reading unit costs.

Figure 6.1 Meter installation profile of Jemena and United Energy



Source: Jemena, *Submission on transition charges application draft decision*, November 2, p. 20.

⁹⁶ Jemena, *Submission on transition charges application draft decision*, November 2, p. 27.

Based on the additional information in its revised application, we accept that Jemena had entered into a post-MRO phase of its AMI roll-out, in terms of its meter reading costs. Our final decision accepts Jemena's proposed 2014 meter reading unit cost of \$10.45 (\$ nominal). This is less than the cost of a manual meter read which we accepted for the 2016–2020 Victorian determination.⁹⁷ When we apply Jemena's proposed meter read unit cost to its volume of meter readings in 2014 and 2015, our final decision is to approve Jemena's proposed \$1.1 million (\$2018) in excess operating expenditure.

⁹⁷ Our final decision on Jemena's 2016–2020 Victorian determination manual meter reads approved a price cap of \$31.24 (\$2016).

7 Powercor

We accept a negative transition charge for Powercor of \$9.8 million (\$2018).

7.1 Final decision

Our final decision is effectively the same as our draft determination on Powercor's initial application. We note that Powercor did not submit a revised application.

The only difference from our draft determination and final decision is we have applied updated WACC and CPI values. Table 7.1 sets out our final decision on CitiPower's transition charge.

Table 7.1 Final decision transition charge (\$2018)

	Revenue and costs true-up	Metering asset base true-up	Transition charge
Initial proposal	(11.8)	2.0	(9.8)
Draft decision	(11.8)	2.0	(9.8)
Revised proposal	–	–	–
Final decision	(11.8)	2.0	(9.8)

Source: AER analysis.

Note: Our draft decision accepted a negative transition charge of \$9 762 781 (\$2018). Using updated WACC and CPI values, our final decision approves a marginally less return of revenue to customers, totalling \$9 756 256 (\$2018).

In 2014 and 2015, Powercor spent less than its allowed AMI budget. It therefore did not submit an application for the recovery of excess expenditure. Instead, as required,⁹⁸ Powercor provided us with audit reports certifying that its actual expenditure in 2014 and 2015 was within scope and equal to the amount claimed.⁹⁹

When calculating the negative transition charge of \$9.8 million (\$2018), we have factored in Powercor spending less than its AMI budget in 2014 and 2015. By doing this, customers will have the budgeted costs which Powercor did not incur returned to them via the transition charge.

⁹⁸ *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council*, cl 51.3.

⁹⁹ Deloitte, *Independent auditor's report to the directors of CitiPower Pty*, 19 August 2015; Deloitte, *Independent auditor's report to the directors of CitiPower Pty*, 19 May 2016.

8 United Energy

We affirm our draft determination on United Energy's transition charge.

8.1 Final decision

Our final decision provides for a negative transition charge of \$3.9 million (\$2018).

Under the Order, the calculation of United Energy's transition charge must consist of revenue and costs true-up and a MAB adjustment (see section 3.1).¹⁰⁰ United Energy's initial application included the revenue and costs true-up in the calculation of its proposed transition charge but did not include the MAB adjustment. Its submission on our draft decision, however, accepted that the Order requires the MAB adjustment to be applied.¹⁰¹

Table 8.1 sets out the components that make up our final decision. It shows that our final decision transition charge consists of a revenue and costs true-up of positive \$1.0 million (\$2018) plus a MAB adjustment of negative \$4.9 million (\$2018) giving a total transition charge of negative \$3.9 million (\$2018). In calculating the transition charge, we used updated WACC and CPI numbers which were not available when we made our draft decision.¹⁰²

Table 8.1 Final decision transition charge (\$2018)

	Revenue and costs true-up	Metering asset base true-up	Transition charge
Initial proposal	1.0	0.0	1.0
Draft decision	1.0	(4.9)	(3.9)
Revised proposal	1.0	(4.9)	(3.9)
Final decision	1.0	(4.9)	(3.9)

Source: AER analysis.

Note: Our draft decision accepted a negative transition charge of \$3 861 971 (\$2018). Using updated WACC and CPI values, our final decision approves a marginally less return of revenue to customers, totalling \$3 863 122 (\$2018).

¹⁰⁰ *Victorian Advanced Metering Infrastructure Cost Recovery Order In Council*, cl 5L.4 and 5L.7 to 5L.12.

¹⁰¹ United Energy, *Submission on transition charges application draft decision*, 21 October 2016, p. 1.

¹⁰² We will further update the forecast CPI and WACC values for actuals when we apply the transition charge through our 2018 annual pricing approval process.