



Telephony

**CP BUS 7.13 - Telephony - Jan2020 - Public
Regulatory proposal 2021–2026**

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1 Overview

Business	CitiPower Powercor and United Energy
Title	Telephony systems currency and upgrade
Project ID	CP BUS 7.13 - Telephony - Jan2020 - Public
Category	IT capital expenditure—recurrent
Identified need	<p>There are three identified needs:</p> <ol style="list-style-type: none"> 1. To continue to deliver a safe and reliable electricity supply, we need to maintain the currency of our telephony systems. Our telephony systems will reach the end of life in 2022. 2. We will in-source the United Energy general enquires/connections contact centre in 2021/22. This will require an extension to our existing telephony systems for the contact centre. 3. We have identified an opportunity to increase customer benefits by improving customer experience in communication through our contact centres. This is in response to strong customer support for ease of access to their data and faster and easier communication.
Recommended option	Option 2—maintain currency, integrate United Energy and uplift customer experience
Proposed start date	2021/22
Proposed commission date	2025/26
Supporting documents	<ol style="list-style-type: none"> 1. CP MOD 7.19 - Telephony - Jan2020 - Public 2. CP MOD 12.02 - Quoted services labour rate - Jan2020 - Public

Our existing telephony systems include the following:

- Internet protocol (IP) telephony solution on a 'Cisco' platform for the contact centre and corporate functions. This includes all contact centre lines for CitiPower and Powercor, and the United Energy faults contact centre line. The United Energy general enquires/connections line is currently outsourced.
- British Telecom (BT) P31 telephony platform for our control rooms.

There are three identified needs for investment during 2021–2026:

- Our existing telephony platforms will reach the end of life and will require an upgrade to maintain currency. Our policy is to maintain the existing systems until vendor support is ceased, rather than upgrade for each new version of the platform. Vendor support for our existing systems is expected to cease in 2022 for the Cisco IP platform and in 2024 for the BT P31 platform.
- We will in-source our United Energy general enquires/connections line and integrate it into our existing contact centre in 2021/22. This will require an extension to our existing telephony systems.
- Our customers value ease of access to our services and information, and want us to enhance their user-experience whether via our customer portal or the contact centre. We have identified an opportunity to improve customer experience by implementing a modest upgrade to the existing telephony capabilities, to allow for faster and more informed engagement with our contact centre via non-voice channels.

We considered three options for addressing the three identified needs, as shown in table 1.

Table 1 Options analysis summary, total capital expenditure during 2021–2026 regulatory period (\$ million, 2021)

Option	IT capital expenditure
0 Do nothing—do not upgrade the existing telephony platforms, do not enable telephony systems for United Energy general enquires/connections and do not improve customer experience.	0
1 Maintain currency and integrate United Energy—upgrade the IP telephony platform and enable telephony systems for United Energy general enquires/connections.	8.48
2 Maintain currency, integrate United Energy and enhance customer experience—upgrade the telephony platforms, enable telephony systems for United Energy general enquires/connections and invest in upgrades to enhance customer experience.	10.07

Source: CitiPower

We recommend option 2—maintain currency, integrate United Energy and enhance customer experience. While this is the highest-cost option, it:

- represents the efficient cost of maintaining currency of existing systems
- enables an efficient transition to the least-cost option of insourcing the United Energy general enquires/connections contact centre
- offers customer benefits that outweigh the cost of delivering them.

Our expenditure forecasts for our recommended option 2 are set out in table 2. We have allocated the costs to each network based on their customer number share, apart from the cost of integration of the United Energy contact centre which is allocated to United Energy.

Table 2 Recommended option: expenditure forecast (\$ million, 2021)

IT capital expenditure	2021–2026
CitiPower	1.71
Powercor	3.98
United Energy	4.37
Total IT capital expenditure	10.07

Note: numbers may not reconcile due to rounding
Source: CitiPower

2 Background

We currently run the following telephony systems:

- IP telephony solution on a 'Cisco' platform for the contact centre and corporate functions. This includes all contact centre lines for CitiPower and Powercor and the United Energy faults contact centre line. Our contact centre is located in our Bendigo depot. Our corporate services are located at various offices and depots across the three networks
- BT P31 telephony platform for our control rooms.

At present, only the United Energy general enquires contact centre is outsourced. The contract is due to expire in December 2021. We have identified the efficient solution is to in-source the United Energy general enquires contact centre by integrating it with our existing Bendigo contact centre. In 2018, we integrated the United Energy faults line—the integration was successful and has led to a saving to customers through economies of scale.

2.1 Customer preferences on communication

As part of our customer engagement on our 2021–2026 regulatory reset, we conducted extensive research on customer preferences with regard to access to their data and account information, as well as ease of contact and communication between us and our customers. Around 80% of our customers support improvements in ease of access to their information and enhanced customer experiences, whether through the contact centre or through our customer portal.

Ease and speed of communication is particularly important for our commercial and industrial (**C&I**) customers where the time taken to get the necessary information to make commercial decisions (e.g. duration of outage) can result in significantly different commercial outcomes.

3 Identified need

3.1 Maintaining currency of existing telephony systems

To continue to deliver a safe and reliable electricity supply, we need to maintain the currency of our telephony platform. Our telephony platform enables us to:

- communicate with customers through the contact centre, including general enquiring and faults/emergencies
- communicate effectively within the business across various offices and depots
- maintain reliable real-time communication from and with the network control room.

3.1.1 IP telephony platform for corporate and contact centre

The Cisco IP telephony platform that provides corporate and contact centre telephony was implemented in 2011, replacing the traditional phone system. The platform's currency can be managed through a maintenance strategy with limited change implementation and extended monitoring, albeit diminishing vendor support. Our policy is to maintain the systems for as long as practicable in order to reduce costs to consumers whilst maintaining an adequate level of vendor support to ensure a robust and performant system.

The platform was upgraded in 2017 and in 2020 we will enter a maintenance period, expected to extend its life to 2022. This includes running a system that is a few versions behind the current Cisco platform, and where the support from the vendor is limited due to inability to offer a full range of 'patch' solutions to outdated versions. This type of maintenance can only be carried out for about two years, before the vendor discontinues support for the older versions of the system and requires a full upgrade. As a result, a platform upgrade will be required in 2022 to maintain currency of the telephony systems.

3.2 BT P31 telephony platform for control rooms

The BT P31 telephony platform services around 50 users across three control rooms for the three networks. Similarly to the IP telephony platform, the BT P31 platform will reach end of life by 2023 after approximately three years of maintenance. We estimate the existing platform will no longer be serviceable by the vendor post-2023, and will require a lifecycle update to allow us to continue to provide critical network controls.

3.3 Providing telephony systems for United Energy general enquires/connections contact centre

Currently we have two separate contact centres that run two telephony systems:

- our Bendigo contact centre for all CitiPower and Powercor lines and the United Energy fault line, on our IP telephony platform
- United Energy general enquires/connections contact centred that is outsourced with their telephony systems.

As our contract expires in December 2021, we will be in-sourcing the United Energy general enquires/connections contact centre and integrating this into our Bendigo contact centre in 2021/22. In order to accommodate the growth in contact centre functions, we will be needed to incrementally expand our existing telephony capacity and capabilities.

3.4 Enhancing customer experience

Our extensive consumer engagement shows customers value ease of access to their data and information and want us to enhance their experience through our customer portal and our contact centre. We have identified an

opportunity to improve customer experience by implementing modest upgrades to the existing telephony capabilities, to allow:

- faster and more informed engagement with our contact centre
- easier and faster identification of our C&I and life support customers when contacting us.

This will save customers time and effort when contacting us and will allow better management and outcomes of customer queries.

4 Options analysis

Table 3 provides a summary of the total capital expenditure over the 2021–2026 regulatory period for each of the identified options.

Table 3 Options summary, CitiPower, Powercor and United Energy, IT capital expenditure over 2021–2026 (\$ million, 2021)

Option	IT capital expenditure
0 Do nothing—do not upgrade the existing telephony platforms, do not enable telephony systems for United Energy general enquires/connections and do not improve customer experience.	0
1 Maintain currency and integrate United Energy—upgrade the IP telephony platform and enable telephony systems for United Energy general enquires/connections.	8.48
2 Maintain currency, integrate United Energy and enhance customer experience—upgrade the telephony platforms, enable telephony systems for United Energy general enquires/connections and invest in upgrades to enhance customer experience.	10.07

Source: CitiPower

4.1 Analysis

4.1.1 Option 0—do nothing

This option involves maintaining the existing telephony platforms without investing in necessary upgrades. It also assumes no extension for in-sourcing of the United Energy general enquires/connections contact centre, and no optional upgrades to enhance customer experience. The advantages and disadvantages of this option are set out in table 4.

Table 4 Advantages and disadvantages of option 0

Option	Advantages	Disadvantages
<p>No upgrade of IP telephony platform</p> <p>No upgrade of BT P31 telephony platform</p>	<p>Low cost to customers</p>	<p>The consequences of not upgrading the platform to maintain currency include:</p> <ul style="list-style-type: none"> • potential for more frequent or extended outages and degraded performance • loss of redundancy in the case of a major unrecoverable failure • no new system or security patches available • no application development/enhancements. <p>Exposing our business to this risk could result in significant degradation of service delivery, particularly with regard to network control and inaccessibility to our faults and emergency contact centre. Network control is crucial to a delivery of safe and reliable electricity supply, and any disruptions in communications can have a significant impact on community and staff safety as well as reliability outcomes.</p> <p>Equally, the likelihood of platform failure in the contact centre would increase in times of heavy call traffic, which is more likely to occur when multiple customers experience faults due to weather related incidents. Taking these considerations into account, not upgrading the IP telephony platform would not be consistent with the capital expenditure objectives of the Rules.</p> <p>Our corporate operations depend on telephony services to allow us to maintain reliable and safe operations. Frequent and extended outages to the telephony service would result in loss of productivity and potential delays in communication across the offices and depots.</p>
<p>No extension for in-sourcing the United Energy general enquires/connections contact centre</p>	<p>Low cost to customers</p>	<p>Lack of integration of all contact centres into one reduces the potential for the full extent of economies of scale and may result in customer confusion and dissatisfaction. Running two telephony systems would be at higher long-term costs to consumers.</p>
<p>No upgrades to existing capabilities</p>	<p>Low cost to customers</p>	<p>Customers experience will not change despite their expressed value in improved communications and access to information.</p>

Source: CitiPower

4.1.2 Option 1—maintain currency and integrate United Energy

This option involves investing in an upgrade of the IP telephony platform and integration of the United Energy general enquires line into the existing Bendigo contact centre. The option includes the following investment:

- the latest available version of the Unified Computing System (UCS) platform offered by Cisco in 2021/22
- the latest available version of the BT telephony platform in 2023/24
- upgrade of telephony capacity for the integration of the United Energy general enquires/connections line.

We determined the efficient timing and cost of option 1 with the following approach:

- **The latest possible date to meet the identified need**—our policy is to maintain existing IT systems, and honour existing contracts, as long as practicable to reduce cost to consumers. In assessing the potential options to address the identified needs, we prioritised options that extend out the date of implementation as far as practicable. As such, option 1 assumes IP and BT P31 telephony platform maintenance until vendor

support is no longer available in 2021/22 and 2023/24 respectively, and integration of United Energy general enquires/connections at the end of the outsource contract in 2021/22.

- **Changes in technological environment**—we assessed the possible and likely technological options for the provision of telephony services in 2021/22 when our first upgrades are scheduled. The most likely technological change in telephony services will be a move to Cloud. We enquired about potential Cloud solutions with our vendors, however, this technology is still considered immature for the size of our operations. As such, we have not assumed any changes in technology in 2021/22.
- **Changes in size of our operations**— we assessed the need to account for additional full-time employees (FTE) at the Bendigo contact centre. We do not expect to see any other material changes to the size of operations during 2021–2026.
- **Interrelationship with total cost of operations**— we assessed how the necessary investment under option 1 interacts with other elements of the Regulatory Proposal. We estimate operating expenditure savings from economics of scale and synergies from the integration of the United Energy general enquires/connections line with the Bendigo contact centre. These savings have been accounted for in the operating expenditure cost estimate of the efficient integration of the contact centres. We do not expect the latest version of the UCS platform in 2021/22 will incorporate functionalities that will materially improve the efficiency of our operations.
- **Developing costs**—we have used the cost of the recent upgrade to estimate the cost of the upgrades in 2021/22. We have also used the recent integration of the United Energy faults line to estimate the cost of integration of the general enquires/connections line.
- **Choosing vendors**—we have considered changing to other potential vendors in assessing the efficient solution. Our assessment shows that the most efficient solution is maintaining the same vendor while applying scrupulous price negotiation. Any change in vendor is likely to lead to transitional inefficiencies in operations, which do not justify potential savings from other providers in the market currently.
- **Customer benefits**—we have assessed customer benefits of each viable options in terms of long-term price reduction and short-term benefits such as improved customer outcomes. option 1 delivers long-term customer benefits as an efficient solution that enables economies of scale from which customers will continue to benefit in the future. However, as our capabilities will not change materially, we do envisage option 1 will deliver any new customer outcomes.

The advantages and disadvantages of this option are set out in table 5.

Table 5 Advantages and disadvantages of option 1

Option	Advantages	Disadvantages
Invest in the latest available version of the Cisco UCS platform in 2021/22	<p>We can continue to provide a safe and reliable electricity supply by ensuring our customers are always able to contact us during times of faults and emergency.</p> <p>We can meet our service obligations at efficient cost.</p> <p>We can continue to meet our customers' expectations by being available for contact 24/7.</p>	Upfront capital expenditure and smaller capital expenditure for version upgrades every two years.
Invest in the latest available version of the BT telephony platform in 2021/22	We can continue to provide a safe and reliable electricity supply by ensuring our control room can carry-out vital and instantaneous communications across the network	Upfront capital expenditure and smaller capital expenditure for version upgrades every two years.
Integration of the United Energy general enquires/connections contact centre	We can enable economies of scale from integrated contact centre services, which will lead to lower long-term cost to consumers.	Upfront capital expenditure.

Source: CitiPower

Table 6 summarised the cost of option 1, per network. We have allocated the costs to each network based on their customer number share, except for the cost of integration of the United Energy contact centre which is allocated to United Energy.

Table 6 Option 1: IT capital expenditure for 2021–2026 regulatory period (\$ million, 2021)

IT capital expenditure	2021–2026
CitiPower	1.41
Powercor	3.28
United Energy	3.79
Total IT capital expenditure	8.48

Source: CitiPower

4.1.3 Option 2—maintain currency, integrate United Energy and enhance customer experience

This option includes option 1 plus an increase in our telephony capabilities:

- omni-channel capabilities
- faster customer identification through the interactive voice response (IVR) interface.

Omni-channel capabilities

Omni-channel telephony capacity enables integration of multiple channels of contact points to a single point, such as a customer profile. For example, customers who contact us on Web Chat (once developed¹) can have that chat saved on their profile, which would enable quicker and easier communication with our contact staff. Equally, information from various contact points for the same customer, either general enquires or faults, would be more easily accessible. It also enables a seamless call prioritisation of customers who contact us online but require further assistance through the contact centre. Around 80% of our customers across the three networks were interested in easier access to their data and information and enhances customer experiences. Omni-channel would allow for more comprehensive customer profiles and enable a more informed communication with our contact centre staff. This will save customers time and effort when they need to contact us, particularly about an on-going request.

Upgrades to customer identification as part of the IVR interface

Our current capabilities under the IVR interface allow us to identify customers based on various factors, including phone number, national metering identifier (**NMI**) and address. IVR identification is easier and faster for our residential customers. At present, IVR is more difficult for our C&I customers, who have multiple meters, locations, phone numbers, etc.

We have received feedback from our C&I customers that in times of emergency, e.g. in case of a fault or an outage, receiving prompt updates on the length and duration of the outage is paramount with regard to making commercial decisions such as turning on a generator. Our C&I customers want to reach us as soon as possible to be able to make this commercial decision within minutes. We therefore propose a modest upgrade to the existing IVR interface, to allow for more sophisticated recognition and identification, including voice recognition and other unique identifiers. This will ensure customers using this service can easily and quickly identify themselves to reach contact centre staff.

Our life support customers may be in similar situation where time taken to reach our contact centre is paramount. We also propose to extend the improved IVR capability to our life support customers. Once installed, the capability could be available to any customer. However, we propose only C&I and life support customers be extended this capability as it would automatically prioritise their calls in terms of speed of identification.

The advantages and disadvantages of this option are set out in table 7.

¹ Refer to CitiPower IT MOD03 - Customer enablement cost - Jan2020 - Public , Customer Enablement business case, for more details on the development of the Web Chat tool

Table 7 Advantages and disadvantages of option 2 (incremental to option 1)

Category	Advantages	Disadvantages
Invest in omni-channel upgrade	Customers benefit from easier and more informed communication with our contact centre, saving customers time and effort on the call.	Upfront capital expenditure
Invest in IVR interface upgrade	C&I and life support customers benefit from time saved in identifying themselves when calling the contact centre, allowing them to get necessary information on the duration of their outage faster. C&I customers can then make faster commercial decisions, while life support customers can make faster decisions on any necessary steps, including alternative generation or changing location.	Upfront capital expenditure

Source: CitiPower

Table 8 summarised the cost of option 2 per network. We have allocated the costs to each network based on their customer number share, except for the cost of integration of the United Energy contact centre which is allocated to United Energy.

Table 8 Option 2: IT capital expenditure for 2021–2026 regulatory period (\$ million, 2021)

IT capital expenditure	2021–2026
CitiPower	1.71
Powercor	3.98
United Energy	4.37
Total IT capital expenditure	10.07

Note: numbers may not reconcile due to rounding

Source: CitiPower

Quantification of benefits of option 2

We have estimated the value of time of the average customer, shown in table 9. Our estimation approach is outlined in Appendix A. To measure whether customers will benefit from the initiatives of option 2, we have estimated the number of minutes the average customer would need to save to ensure the investment is worthwhile. If the expected time savings for customers is above the minimum necessary to outweigh the cost, we consider the investment justifiable.

We estimate the investment is worthwhile if the average customer saved at least one minute per year across each network, which is below the likely time savings expected from the initiatives.

Table 9 Quantification of customer benefits of option 2 (\$2021)

	Value of one minute of time for the average customer	Minutes saved per customer to make investment justifiable
CitiPower and Powercor	0.18	1.0
United Energy	0.16	1.0

Note: value of time for average customer varied across each network due to the difference in the share between residential and commercial customers.
 Source: CitiPower

We do not estimate material changes to our operations from this investment. As customer profiles become more enhanced, we expect the increase in the volume of information linked to each profile, and the increase in the number of information sources, will result in more data and customer profile management. This will offset any efficiency achieved through shorter calls. We also do not anticipate efficiencies from C&I and life-support customer voice recognition, rather a change in the prioritisation of calls.

5 Recommendation

We recommend option 2—maintain currency of the telephony platform, integrate United Energy general enquires/connections and enhance customer experience. While this is the highest-cost option, it:

- represents the efficient cost of maintaining currency of existing systems
- enables an efficient transition to the least-cost option of insourcing the United Energy general enquires/connections contact centre
- offers additional customer benefits that outweigh the cost of delivering them.

Option 0—do nothing, is not recommended as it is not in the long-term interest of consumers and it does not satisfy the capital expenditure objective of the Rules.

Option 1—maintain currency of the telephony platform and integrate United Energy general enquires/connections, is not recommended as it does not maximise on the opportunity to improve customer outcomes and increase customer long-term benefits.

Table 10 summarises the expenditure proposal for our recommended option 2. We have allocated the costs to each network based on their customer number share, except for the cost of integration of the United Energy contact centre which is allocated to United Energy.

Table 10 Recommended option: IT capital expenditure for 2021–2026 regulatory period (\$ million, 2021)

IT capital expenditure	2021/22	2022/23	2023/24	2024/25	2025/26	Total*
CitiPower	1.00	0.30	0.30	-	0.100	1.71
Powercor	2.34	0.70	0.70	-	0.23	3.99
United Energy	3.00	0.58	0.58	-	0.19	4.37
Total IT capital expenditure	6.35	1.59	1.59	-	0.53	10.07

Note: numbers may not reconcile due to rounding
Source: CitiPower

A Estimating value of time

We took the following approach to estimate value of time:

- we separated our metered customers into residential and commercial customers
- for residential customers, we estimated the value of time by calculating the average income from wages of the average customer using the most recent available Australian Bureau of Statistics (**ABS**) data for the average wage in Victoria (6302.0 - Average Weekly Earnings, Australia, Nov 2018)
- for commercial customers, we estimated the value of time by calculating the average income from sales of goods and services, using:
 - ABS data for the number of businesses in Victoria (8165.0 - Counts of Australian Businesses, including Entries and Exits, June 2014 to June 2018)
 - ABS data for the total income from sales of goods and services in Victoria (5676.0 - Business Indicators, Australia, Mar 2019)
- the value of time for the average customer is calculated as the weighted average of value of time of each customer type, based on our most recent customer number split.

Table 11 summarises the key metrics used.

Table 11 Quantification of customer value of time (\$ June 2021)

	CitiPower	Powercor	United Energy
Residential customers	304,231	819,837	676,696
Average weekly earnings in Victoria, November 2018	1,190	1,190	1,190
Commercial customers	59,391	112,413	58,772
Income from sales of goods and services, Victoria, March 2019	\$165 billion	\$165 billion	\$165 billion
Number of businesses in Victoria, 2017/18	618,189	618,189	618,189

Source: ABS and CitiPower