EMCa

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CitiPower, Powercor and United Energy ('CPU') 2026 - 2031 Regulatory Proposals

REVIEW OF PROPOSED EXPENDITURE ON ICT AND CER

Public Version

Report prepared for:

AUSTRALIAN ENERGY REGULATOR (AER)

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Preface

This report has been prepared to assist the Australian Energy Regulator (AER) with its determination of the appropriate revenues to be allowed for the prescribed distribution services of CitiPower, Powercor and United Energy (CPU) from 1st July 2026 to 30th June 2031. The AER's determination is conducted in accordance with its responsibilities under the National Electricity Rules (NER).

This report covers a particular and limited scope as defined by the AER and should not be read as a comprehensive assessment of proposed expenditure that has been conducted making use of all available assessment methods nor all available inputs to the regulatory determination process. This report relies on information provided to EMCa by the CPU business entities. EMCa disclaims liability for any errors or omissions, for the validity of information provided to EMCa by other parties, for the use of any information in this report by any party other than the AER and for the use of this report for any purpose other than the intended purpose. In particular, this report is not intended to be used to support business cases or business investment decisions nor is this report intended to be read as an interpretation of the application of the NER or other legal instruments.

EMCa's opinions in this report include considerations of materiality to the requirements of the AER and opinions stated or inferred in this report should be read in relation to this over-arching purpose.

Except where specifically noted, this report was prepared based on information provided to us prior to 1 June 2025 and any information provided subsequent to this time may not have been taken into account. Some numbers in this report may differ from those shown in the CPU business entities' regulatory submissions or other documents due to rounding.

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ABBREVIATIONS

Term	Definition
ADMS	Advanced Distribution Management System
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AI	Artificial intelligence
AMI	Advanced Metering Infrastructure
B2B	Business to Business
BACS	Building Access Control Systems
BT	British Telecom
BW	Business Warehouse
capex	Capital expenditure
CBA	Cost Benefit Analysis
CECV	Customer Export Curtailment Value
CER	Consumer Energy Resources
CIS	Customer Information System
CP	Cit Power
CPU	CitiPower, Powercor and United Energy
Current RCP	2022-2026 RCP
DEECA	Department of Energy, Environment and Climate Action
DER	Distributed Energy Resources
DERMS	Distributed Energy Resources Management System
DNSP	Distribution Network Service Provider
DOE	Dynamic Operating Envelope
DVMS	Digital Value Management System
ECC6	SAP ERP Central Component 6,0
EMS	Enterprise Management Systems
ERP	Enterprise Resource Planning
ESC	Energy Safety Commission
EV	Electric Vehicle
FTA	Flexible Trading Arrangements
FTE	Full-Time Equivalent
GIP	Good Industry Practice

Term	Definition
HV	High Voltage
ICF	Issue/Change Form
ICR	Interest Coverage Ratio
ICT	Information and Communication Technology
IDAM	Identity and Access Management
IR	Information Request
IT	Information Technology
JEN	Jemena
LV	Low voltage
MITE	Market Interface Technology Enhancements
MSATS	Market Settlement and Transfer Solution
MW	Megawatt
NEM	National Electricity Market
NER	National Electricity Rules
NMI	The National Meter Identifier
NMS	Network Management System
NPV	Net Present Value
NSP	Network Service Provider's
Opex	Operational expenditure
OT	Operational Technology
PAL	Powercor
PV	Present Value
RCP	Regulatory Control Period
RIN	Regulatory Information Notice
RP	Regulatory Proposal
SCADA	Supervisory Control and Data Acquisition
SCS	Standard Control Service
SI	System of Units
SMEs	Small and Medium Enterprises
TOTEX	Total expenditure
UE	United Energy
UK	United Kingdom
VCR	Value of Customer Reliability
VEBM	Victoria Emergency Backstop Mechanism
VPN	Virtual private network

EXECUTIVE SUMMARY

Introduction and context

1. The AER has engaged EMCa to undertake a technical review of aspects of CitiPower's, Powercor's, and United Energy's Information and Communications Technology (ICT) category of expenditure proposed in their respective regulatory proposals (RP) for the 2026-31 Regulatory Control Period (next RCP).
2. CitiPower and Powercor have essentially presented common information as they share common ICT. Typically, the only difference between the two proposals is the allocation of forecast expenditure between the two businesses for the various programs/projects proposed with expenditure in the next RCP. United Energy has also presented very similar information in support of its proposed ICT expenditure noting that in some cases its platforms, systems, and applications differ from CitiPower's and Powercor's. We have recognised these differences as appropriate.
3. The assessment contained in this report is intended to assist the AER in its own analysis of the proposed capex and opex allowances as an input to its draft determination on CitiPower's revenue requirements for the next RCP.

Expenditure under assessment

Proposed recurrent ICT capex

4. Collectively, CPU has proposed $423.1 million capex for recurrent ICT over the next RCP:
   - CitiPower has proposed $76.0 million
   - Powercor has proposed $176.3 million, and
   - United Energy has proposed $170.8 million.
5. This represents a substantive (+245%) increase in expenditure from the current RCP.
6. We have been asked to review all nine of the recurrent ICT project/programs proposed for the next RCP, noting that CitiPower and Powercor present combined business cases and models for each project/program and United Energy presents separate business cases and models.

Proposed non-recurrent ICT capex

7. Collectively, CPU has proposed $261.6 million capex for non-recurrent ICT over the next RCP:
   - CitiPower has proposed $43.5 million
   - Powercor has proposed $101.5 million, and
   - United Energy has proposed $116.6 million.
8. We have been asked to review all three non-recurrent projects proposed by CPU, noting that CitiPower and Powercor present combined business cases and models for each project/program and United Energy presents separate business cases and models.

Proposed ICT opex step changes (excluding CER)

9. Collectively, CPU has proposed an opex step change for its non-CER ICT program of $94.9 million for the next RCP:
   - CitiPower has proposed $17.1 million

- Powercor has proposed $37.7 million, and
- United Energy has proposed $40.0 million.

10. The proposed opex step change has been based on the same methodology applied to each of the Powercor, CitiPower and United Energy networks.

Proposed CER and customer-driven electrification ICT expenditure

11. Collectively, CPU has proposed $56.7 million capex for ICT-related CER over the next RCP:
    - CitiPower has proposed $11.8 million
    - Powercor has proposed $27.4 million, and
    - United Energy has proposed $17.6 million.
12. CPU has also proposed an aggregate of $211.8 million capex for network-related CER (for customer-driven electrification) over the next RCP:
    - CitiPower has proposed $40.9 million
    - Powercor has proposed $100.6 million, and
    - United Energy has proposed $70.4 million.
13. CPU collectively propose CER opex step changes of $60.0 million over the next RCP:
    - CitiPower has proposed $12.3 million
    - Powercor has proposed $28.7 million, and
    - United Energy has proposed $18.9 million.
14. We evaluate the CER and customer-driven electrification augex programs/projects underpinning the proposed expenditure in separate (technical) reports for each of the three CPU businesses.

Proposed cyber security expenditure

15. Cyber security expenditure is assessed in a separate, confidential report.

Assessment and findings

Governance, management and forecasting methods

CitiPower, Powercor and United Energy (CPU) are responding to changes impacting the industry

16. In the current regulatory period, CPU has, in aggregate, slightly overspent its allowance, responding to increasing cyber security threats and the continuing expansion of its IT footprint driven by the 'network digitisation' trend common to the industry. CPU was able to prudently defer some large projects from the current RCP including its Enterprise Resource Planning & Billing systems replacement due to exogenous factors.
17. The cyber security and digitisation trends, coupled with IT responses to CER integration, customer electrification, and market reform requirements have led CPU to propose significant uplifts in ICT totex in the next RCP.

Focus of our assessment has been on matters that have a direct impact on the expenditure within our scope of review

18. Our assessment of the governance, management and forecasting methods is not intended to be a comprehensive review, nor does it purport to represent all methods that CPU has applied to derive its ICT expenditure forecast for the next RCP. Rather we focus primarily

on matters which we consider impact the forecast expenditure requirements, and therefore the issues we found may not be representative of the projects and programs that make up the remainder of the forecast expenditure.

CPU's initial submission lacked sufficient information

19. We found that, in general CPU's submissions had not materially achieved the expectations of the Better Resets Handbook and we had to ask for significant additional information to complete our review. In particular, neither the business case nor the supporting models for the nine recurrent ICT projects included information on historical expenditure.

20. We had to seek this information through formal requests and there was still a lack of useable information due to 'challenges' CPU experienced in seeking to reconcile historical expenditure to current expenditure categories and programs/projects.

21. In most respects, however, CPU was able to respond satisfactorily to our requests for further information, which was helpful for our review. However, as explained in our assessment of the proposed expenditure, we found instances where the combination of the initial and supplementary information was insufficient to support the level of expenditure that is proposed.

CPU's cost-benefit models have material issues

22. CPU submitted an economic model for the ERP & Billing program with its proposal. CBA models were not provided for the compliance-driven (market reform projects, MITE and FTA). We also considered that a portion of CPU's proposed Telephony project should be classified as non-recurrent (i.e. not all recurrent, as proposed by CPU). Following our request, a supporting CBA model was subsequently provided.

23. We found issues with the two CBA models:

- The issues with the Telephony project CBA were sufficient in aggregate to lead us to conclude that the proposed expenditure would be unlikely to generate a net benefit for customers.
- The issues with the ERP & Billing model were largely overcome by CPU providing extra information, including detail to support the assumed costs; whilst there were remnant concerns, overall, we concluded that the CBA was sufficiently robust to underpin a positive NPV for the proposed option.

CPU's proposed opex step changes are likely to be offset in part by efficiency gains

24. CPU made qualitative statements about efficiency benefits from a number of its proposed recurrent investments and from its approach to consolidating its ERP & Billing systems across CPU on a common platform. However, no attempt was made to quantify realisable benefits which would have the effect of off-setting proposed opex increases to some degree.

Assessment of proposed recurrent ICT projects

25. We assessed nine recurrent projects noting that CitiPower and Powercor propose significant uplifts in recurrent expenditure over the next RCP.

26. We found that the proposed expenditure for three of the projects is reasonable (Customer Enablement, Infrastructure Refresh, and Market Systems). However, for the other six projects we found insufficient justification for the proposed level of expenditure. The key issues with the information provided by CPU are:

- Inadequate information about the historical expenditure
- Inadequate justification of variances between historical and proposed expenditure, and
- Inadequate benefits analysis (relevant to Telephony only).

Assessment of proposed non-recurrent ICT projects

27. We reviewed three non-recurrent projects: ERP & Billing systems, Flexible Trading Arrangements (FTA) , and Market Interface Technology Enhancements (MITE), the latter two of which are compliance-driven projects.

28. We are satisfied that CPU has selected the appropriate option to replace and converge the ERP & Billing systems across CPU. We consider that the proposed capex for the next RCP is reasonable. The opex costs are reasonably derived, however no offset for the identified billing system efficiency dividend appears to have been recognised in the proposed step-change.

29. Based on benchmarking, we consider that CitiPower and Powercor's proposed capex for MITE are reasonable estimates, but that United Energy's proposal is an overestimate. However, we also note that the specifications for this project are not final and that it is CPU's intention to revisit the cost estimate when advised.

30. We consider that CPU's proposed capex for the FTA project is in each case reasonable, however CPU's information on the nature of the project leads us to the view that it could be considered largely as a metering ACS project.

Assessment of proposed CER and customer-driven electrification projects

31. In aggregate, the CPU businesses have proposed $328.5m combined capex and opex, for CER and electrification initiatives, comprising a combination of augex and ICT expenditure.

32. We consider that:

- The proposed Flexible Services project is justified and CPU's proposed capex and proposed opex step change for this project are reasonable
- CPU's proposed ICT projects for a Network data visibility portal and for a non-network marketplace, are not justified.
- Consistent with our assessments in each of the technical reports for CitiPower, Powercor and United Energy, the LV electrification augex that is proposed for each business is considerably overstated, as considerably fewer of the proposed augmentations are economic than CPU has proposed.

Implications for expenditure allowances

Our approach

33. We were asked to consider an alternate expenditure forecast for the projects and programs that we reviewed based on the issues that we identified. Where a project was reasonably justified in accordance with the NER, we included this in our alternate expenditure forecast. In other cases, our proposed alternative expenditure forecast for the categories of expenditure we were asked to review involves one or more adjustments, to the extent that the adjustment factors formed the basis of CPU's forecast and which we consider to be not justified or overstated.

34. The alternative forecasts referred to under subheadings in this section are specific to the subsets of projects referred to, some of which are reviewed in different sections of this report or in other reports. Our assessment of an alternate expenditure forecast is intended to assist the AER in its own analysis of the proposed expenditures allowance as an input to its Draft Determination on revenue requirements for the next RCP.

35. To the extent we found evidence of systemic issues in its application of governance, management and forecasting issues, we have taken account of these in our review of the category level expenditure and as reflected in our proposed alternate forecast. We have not separately applied a further top-down adjustment.

36. We stress that our advice on an alternative forecast relates only to the projects and programs within the category of expenditure that we have been asked to review and does not necessarily have any implication for expenditure that was not within the scope of our review.

Alternative forecasts

Recurrent ICT capex

37. We consider that reasonable alternative forecasts for the proposed recurrent ICT capex projects/programs would be as follows:

- CitiPower and Powercor: between 10% and 15% less than each of these businesses has proposed
- United Energy: between 7% and 10% less than United Energy has proposed.

Non-recurrent ICT capex (other than CER and cyber security)

38. We consider that reasonable alternative forecast for the proposed non-recurrent ICT capex projects/programs would be as follows:

- CitiPower and Powercor: up to 5% less than each of these businesses has proposed
- United Energy: between 14% and 18% less than United Energy has proposed.

CER-related ICT capex

39. We consider that a reasonable alternative capex forecast for the proposed CER ICT projects/programs for each CPU business would between 15% and 20% less than each business has proposed

ICT opex (other than CER and cyber security)

40. We consider reasonable alternative forecasts for the additional ICT that each business has proposed would be as follows:

- CitiPower: around 7% less than CitiPower has proposed
- Powercor: around 8% less than Powercor has proposed
- United Energy: around 11% less than United Energy has proposed.

CER-related opex

41. We consider that a reasonable alternative forecast for the additional CER-related opex that each business has proposed, would in aggregate be around 25% less than they have proposed.

Cyber security expenditure

42. For our alternative forecasts for cyber security, we refer to our separate (confidential) report.

1 INTRODUCTION

The AER has asked us to review and provide advice on aspects of CitiPower, Powercor and United Energy (CPU) proposed expenditures over the 2026-31 Regulatory Control Period (next RCP) relating to information and communication technology (ICT), consumer energy resources (CER) related ICT and cyber security. Our review is based on information that CPU provided and on aspects of the NER relevant to assessment of expenditure allowances.

1.1 Purpose of this report

43. The purpose of this report is to provide the AER with a technical review of aspects of the expenditure that CPU has proposed in its regulatory proposal (RP) for next RCP'

44. The assessment contained in this report is intended to assist the AER in its own analysis of the proposed expenditures allowance as an input to its Draft Determination on CPU's revenue requirements for the next RCP.

1.2 Scope of requested work

45. Our scope of work, covered by this report, is as defined by the AER. Relevant aspects of this are as summarised in Figure 1.1.

Figure 1.1: Scope of work covered by this report

Scope of work covered by this report.

The scope of this review, as requested by the AER, covers the following.

- Capex (ex ante)
  - ICT (recurrent and non-recurrent)
  - CER and electrification
- Opex step changes related to:
  - ICT
  - CER and electrification

46. Other aspect of CPU's expenditures, including repex, augex, opex (vegetation management) and ICT cyber security are covered in our two other reports.

47. Further, while we reference in this report CPU's proposed ICT for CPU's CER program, and for one of its repex programs (conductor compliance), our assessments of those two proposals are in our technical report, where we report on the technical and ICT elements of these two programs together.

48. For reference, we also assess in the current report OT investment that CPU proposes as part of its ADMS project.

1.3 Our review approach

49. In conducting this review, we first reviewed the RP documents that CPU has submitted to the AER. This includes a range of appendices and attachments to CPU's RP and certain Excel models which are relevant to our scope.

50. We next collated several information requests. The AER combined these with information request topics from its own review and sent these to CPU.

51. In conjunction with AER staff, our review team met with CPU at its offices on 24-27 March 2025. CPU presented to our team on the scoped topics, and we had the opportunity to engage with CPU to consolidate our understanding of its proposal.

52. CPU provided the AER with responses to information requests and, where they added relevant information, these responses are referenced within this review.

53. We have subjected the findings presented in this report to our peer review and Quality Assurance processes and we presented summaries of our findings to the AER prior to finalising this report.

1.3.1 Conformance with NER requirements

54. In undertaking our review, we have been cognisant of the relevant aspects of the NER under which the AER is required to make its determination and relevant AER Guidelines.

Capex objectives and criteria

55. The most relevant aspects of the NER in this regard are the 'capital expenditure criteria' and the 'capital expenditure objectives.' Specifically, the AER must accept the Network Service Provider's (NSP) capex proposal if it is satisfied that the capex proposal reasonably reflects the capital expenditure criteria, and these in turn reference the capital expenditure objectives.

56. The NER's capital expenditure criteria and capital expenditure objectives are reproduced in Figure 1.2 and Figure 1.3.

Figure 1.2: NER capital expenditure criteria

NER capital expenditure criteria

The *AER* must:

*(1) subject to subparagraph (c)(2), accept the forecast of required capital expenditure of a Distribution Network Service Provider that is included in a building block proposal if the AER is satisfied that the total of the forecast capital expenditure for the regulatory control period reasonably reflects each of the following (**the capital expenditure criteria**):*

(i) the efficient costs of achieving the capital expenditure objectives;

(ii) the costs that a prudent operator would require to achieve the capital expenditure objectives; and

(iii) a realistic expectation of the demand forecast, cost inputs and other relevant inputs required to achieve the capital expenditure objectives

Source: NER 6.5.7(c) Forecast capital expenditure, v230

Figure 1.3: NER capital expenditure objectives

NER capital expenditure objectives

*(a) A building block proposal must include the total forecast capital expenditure for the relevant regulatory control period which the Distribution Network Service Provider considers is required in order to do each of the following **(the capital expenditure objectives)**:*

(2) meet or manage the expected demand for standard control services over that period;

(3) comply with all applicable regulatory obligations or requirements associated with the provision of standard control services;

(4) to the extent that there is no applicable regulatory obligation or requirement in relation to:

(i) the quality, reliability or security of supply of standard control services; or

(ii) the reliability or security of the distribution system through the supply of standard control services,

to the relevant extent:

(iii) maintain the quality, reliability and security of supply of standard control services; and

(iv) maintain the reliability and security of the distribution system through the supply of standard control services;

(5) maintain the safety of the distribution system through the supply of standard control services; and

(6) contribute to achieving emissions reduction targets through the supply of standard control services.

Source: NER 6.5.7(a) Forecast capital expenditure, v230

Opex Objectives and Criteria

57. The most relevant aspects of the NER in this regard are the 'operating expenditure criteria' and the 'operating expenditure objectives.' The NER's opex criteria and opex objectives are reproduced below.

Figure 1.4: NER operating expenditure criteria

NER operating expenditure criteria

*(c) The AER must accept the forecast of required operating expenditure of a Distribution Network Service Provider that is included in a building block proposal if the AER is satisfied that the total of the forecast operating expenditure for the regulatory control period reasonably reflects each of the following (**the operating expenditure criteria**):*

(1) the efficient costs of achieving the operating expenditure objectives;

(2) the costs that a prudent operator would require to achieve the operating expenditure objectives; and

(3) a realistic expectation of the demand forecast, cost inputs and other relevant inputs required to achieve the operating expenditure objectives.

Source: NER 6.5.6(c) Forecast operating expenditure, v230

Figure 1.5: NER operating expenditure objectives

NER operating expenditure objectives

*(a) A building block proposal must include the total forecast operating expenditure for the relevant regulatory control period which the Distribution Network Service Provider considers is required in order to do each of the following (**the operating expenditure objectives**):*

(1) meet or manage the expected demand for standard control services over that period;

(2) comply with all applicable regulatory obligations or requirements associated with the provision of standard control services;

(3) to the extent that there is no applicable regulatory obligation or requirement in relation to:

(i) the quality, reliability or security of supply of standard control services; or

(ii) the reliability or security of the distribution system through the supply of standard control services,

to the relevant extent:

(iii) maintain the quality, reliability and security of supply of standard control services; and

(iv) maintain the reliability and security of the distribution system through the supply of standard control services; and

(4) maintain the safety of the distribution system through the supply of standard control services; and

(5) contribute to achieving emissions reduction targets through the supply of standard control services.

Source: NER 6.5.6(a) Forecast operating expenditure, v230

How we have interpreted the capex criteria and objectives in our assessment

58. We have taken particular note of the following aspects of the capex criteria and objectives:

- Drawing on the wording of the first and second criteria, our findings refer to efficient and prudent expenditure. We interpret this as encompassing the extent to which the need for a project or program or opex item has been prudently established and the extent to which the proposed solution can be considered to be an appropriately justified and efficient means for meeting that need.
- The criteria require that the forecast '*reasonably reflects*' (emphasis added) the expenditure criteria and in the third criterion, we note the wording of a '*realistic expectation*'. In our review we have sought to allow for a margin as to what is considered reasonable and realistic, and we have formulated negative findings where we consider that a particular aspect is outside of those bounds.
- We note the wording '*meet or manage*' in the first objective (emphasis added), encompassing the need for the NSP to show that it has properly considered demand management and non-network options.
- We tend towards a strict interpretation of compliance (under the second objective), with the onus on the NSP to evidence specific compliance requirements rather than to infer them.
- We note the word '*maintain*' in objectives 3 and 4 and, accordingly, we have sought evidence that the NSP has demonstrated that it has properly assessed the proposed

expenditure as being required to reasonably maintain, as opposed to enhancing or diminishing, the aspects referred to in those objectives.

How we have interpreted the opex criteria and objectives in our assessment

59. CPU has applied a Base-Step-Trend (BST) approach in forecasting its aggregate opex requirements. Since our review scope encompasses only proposed expenditure for certain purposes, we have sought to identify where CPU has proposed an opex step change or base year adjustment that is relevant to a component that we have been asked to review. Where CPU has not proposed a relevant opex step change or base year adjustment, then we assume that any opex referred to in documentation that the respective DNSP has provided is effectively absorbed and need not be considered in our assessment.

1.3.2 Technical Review

60. Our assessments comprise a technical review. While we are aware of stakeholder inputs on aspects of what CPU has proposed, our technical assessment framework is based on engineering considerations and economics.

61. We have sought to assess CPU's expenditure proposal based on CPU's analysis and CPU's own assessment of technical requirements and economics and the analysis that it has provided to support its proposal. Our findings are therefore based on this supporting information and, to the extent that CPU may subsequently provide additional information or a varied proposal, our assessment may differ from the findings presented in the current report.

62. We have been provided with a range of reports, internal documents, responses to information requests and modelling in support of what CPU has proposed and our assessment takes account of this range of information provided. To the extent that we found discrepancies in this information, our default position is to revert to CPU's RP documents as provided on its submission date, as the 'source of record' in respect of what we have assessed.

1.4 This report

1.4.1 Report structure

63. In each Section, we have presented:

- An overview of the proposed expenditure and a summary of CPU's justification for that expenditure
- Our observations on CPU's application of its governance framework and forecasting methodology to the expenditure category, along with the derived forecasting inputs
- Our assessment of individual expenditure categories and/or projects, and
- Our findings for each expenditure category and the implications of these findings for the expenditure allowances determined by the AER in its Draft Determination.

64. We also provide Appendix A in which we provide relevant AER Guidelines.

65. We have taken as read the considerable volume of material and analysis that CPU provided, and we have not sought to replicate this in our report except where we consider it to be directly relevant to our findings.

1.4.2 Information sources

66. We have examined relevant documents that CPU have published and/or provided to the AER in support of the areas of focus and projects that the AER has designated for review. This included further information at onsite meetings and further documents in response to

our information requests. These documents are referenced directly where they are relevant to our findings.

67. Except where specifically noted, this report was prepared based on information provided by AER staff prior to 1 June 2025 and any information provided subsequent to this time may not have been taken into account.

68. Unless otherwise stated, documents that we reference in this report are CPU documents comprising its RP and including the various appendices and annexures to that proposal.

69. We also reference responses to information requests, using the format IRXX being the reference numbering applied by the AER. Noting the wider scope of the AER's determination, the AER has provided us with IR documents that it considered to be relevant to our review.

1.4.3 Presentation of expenditure amounts

70. Expenditure is presented in this report in $2025-26 real terms, unless stated otherwise. In some cases, we have converted to this basis from information provided by the business in other terms.

71. While we have endeavoured to reconcile expenditure amounts presented in this report to source information, in some cases there may be discrepancies in source information provided to us and minor differences due to rounding. Any such discrepancies do not affect our findings.

2 OVERVIEW OF PROPOSED EXPENDITURE

CitiPower, Powercor and United Energy (CPU) propose $684.7m capex over the next regulatory period, and opex step changes totalling $94.9m, for ICT projects excluding cyber security investment and ICT for CER.

For ICT related to its CER and electrification programs, CPU propose a further $56.7m ICT capex and $60.0m ICT opex step changes. In addition to ICT investment, CPU proposes $211.8m augex for customer-driven electrification, which we assess in our separate technical reports for each of the three businesses.

CPU also proposes $38.0m capex and $37.6m opex for cyber security. We report on our assessment of cyber security separately.

In aggregate, the proposed expenditure on ICT (including for CER and for cyber security) would represent a significant uplift on expenditure in the current period.

2.1 Introduction

72. In this section we provide an overview of the expenditure proposed by CitiPower, Powercor and United Energy, that we have assessed in this report.

2.2 What CPU business entities have proposed

2.2.1 Background and context

CPU ICT strategy

73. CPU did not provide a stand-alone ICT Strategy document. We typically see such documents from NSPs as part of their regulatory proposals to provide context for the individual ICT projects and programs proposed for the next RCP. Such a document, if aligned to good practice, would not only outline the objectives and strategies for the next five to ten years after considering trends and drivers of change, but also assess benefits realised and variances in planned and actual expenditure from the current RCP. The absence of an CPU ICT Strategy document (or equivalent) hampered our understanding of and assessment of CPU's ICT proposed expenditure.

74. The absence of information from CPU about historical recurrent expenditure for the programs it proposes for the next RCP was a constant source of frustration in our assessment and required information requests and consequent delays to rectify.

75. Nonetheless, in its Proposal, CPU provide some information at the strategic level, including statements such as:[1]

> *'Our reliance on ICT is increasing as a key means of managing and operating our network in smarter, more flexible and lower-cost ways. This reliance will continue to increase as the network and the services we provide undergo considerable change.'*
>
> *'Our forecast ICT program for the 2026–31 regulatory period will allow us to maintain the currency of our existing ICT services and capabilities, unlock new benefits for our*

[1] Powercor Regulatory Proposal 2026-31 - Part B - Explanatory Statement - Jan2025, page 73, 75

customers, and respond to changes in the energy market giving rise to new regulatory obligations.'

76. Supplementary strategic ICT information was provided by CPU at our request at our onsite meeting with them in March 2025, in which it identified the following 'key' drivers of its proposed IT expenditure:[2]

- *Replacing four of our core systems*
- *Increasing cyber security risks*
- *Scalable and flexible foundations*
- *Meeting NEM reform requirements.*

77. We note that these are relatively consistent with the drivers espoused by other DNSPs albeit recognition of investment in applications to support CER is not explicit in CPU's short list.

Changes to CPU's ICT governance framework during the current RCP

78. We sought clarification from CPU about what material changes it had made in the current RCP of relevance to its ICT proposed portfolio and expenditure forecast. We summarise its response as follows:

- Updated risk monetisation framework[3] – CPU advises that it engaged EY to assist us in developing a new, ICT specific risk monetisation framework
  - the framework is based on seven risk categories[4], each with individual sub-category risks and valuation methodologies
  - the risk monetisation value is a combination of the expected consequence of a risk multiplied by the likelihood of the consequence occurring:

' We have used a combination of historical evidence, trends and industry values to ensure a broad set of robust inputs.'

- Project delivery framework improved - *focussing on strengthening accountabilities within project governance structures and uplifting project management guidance. The resulting position is a mature project management landscape that will continue to maintain high governance standards into the next RCP.*

79. We have referred to the risk monetisation framework to help us understand the bases for benefits derivation in the individual business cases and supporting cost-benefit analysis (CBA) models.

80. We comment on the deliverability of the proposed ICT portfolio as part of our assessment.

New capabilities and major upgrades delivered in the current RCP

81. CPU advises that collectively it introduced the following capabilities and/or upgrades in the current RCP and has commenced the major upgrade/replacement of its ERP and Billing system and Flexible Trading Arrangements projects:[5]

- LV DERMS – to ensure compliance with the DEECA Minimum Demand Mandate[6]
- Infrastructure refresh
- ADMS modernisation

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2 EMCa onsite workshops - ICT – final, slide 7; PAL ATT 7.02

3 EMCa onsite workshops - ICT – final, slide 13

4 Reliability; Compliance, Bushfire; Safety; Customer experience; IT outage; IT suitability and sustainability

5 EMCa onsite workshops - ICT – final, slide 6

6 The Department of Energy, Environment and Climate Action; involves a combination of strategies, including an Emergency Backstop Mechanism and managing minimum demand constraints

- Five minute settlement – a mandated change with 44 IT systems requiring change, and
- Field service management solution - Click upgrade.

CPU's forecasting methodology relies on three sources of advice and it takes an iterative approach to portfolio 'moderation'

82. CPU advises that it derives its expenditure forecasts for the RP from a combination internal advice (primarily for recurrent capex), and external advice (primarily for projects of higher complexity such as the non-recurrent projects and cyber security, but also its recurrent infrastructure refresh program). CPU also advises that through engagement with its customers (including its Customer Advisory Panel) it was told that:[7]

- ICT is a key enabler of the new services customers increasingly want to access to
- They want CPU to use innovation and technology to maintain a positive customer experience, with efficient, easily accessible and responsive customer services were a priority.

83. We asked CPU to explain if any 'top-down' moderation or calibration has been applied to the ICT program to reflect an affordability driver or economies of scale, and, if so, the approach and rationale it applied. We summarise CPU's response as follows:[8,9]

- It has moderated its IT portfolio through an iterative process, removing $50m in forecast expenditure across CP, PAL and UE following internal reviews
- CPU also accounted for economies of scale where it is consolidating systems between networks, citing the Market Systems business case as an example in which, '…*we have estimated a cost avoidance factor of approximately 40% compared to maintaining two separate systems',* and
- Challenged the deliverability of the program.

84. We expected to see, but did not see, evidence of the iterative steps, showing for example the progressive changes to the totex proposed at each iteration. Some evidence was provided for Powercor through listing of the projects removed from the forecast, including by removing duplication. We asked for further information and were advise that the iterative steps included (for CPU):[10]

- $51.0 million of expenditure increases due to '*a higher trend in market changes occurring across our networks'* and '*accelerating digitalisation of the network'*
- $51.5 million of expenditure decreases across three projects,[11] and
- $51.1 million removed from the forecast, which we discuss above.

Unit rates and cost forecasting

85. We asked CPU to advise us of any review of unit rates and cost uplifts relevant to the proposed expenditure. Our summary of CPU's advice is:[12]

- It uses two rates: a general IT rate for the majority of IT resources and a specialist rate for a limited range of higher cost technical resources (based on external, market-tested rate cards); for the specialist rate, CPU further advises that:

'The referenced resource rates are for senior infrastructure, cyber security, architecture and technical specialists, and are applied to select labour in our infrastructure refresh, cyber security and ERP & billing system upgrade projects (noting these projects involve components that are highly technical and complex)…this is the rate applied when

7 EMCa onsite workshops - ICT – final, slide 11

8 CPU response per Powercor – IR008 – ICT and cybersecurity, page 1

9 EMCa onsite workshops - ICT – final, slide 11

10 CPU response via Powercor – IR015 – ICT, CER and cybersecurity – 20250428 – public, pages 13-14

11 ERP & Billing, FTA, and ICT expenditure in the Facilities project

12 CPU response per Powercor – IR008 – ICT and cybersecurity, page 2

engaging these resources for a period of more than 12 months (higher day rates apply for shorter engagements).'

- With respect to cost uplifts, CPU refers to the source of its recurrent cost increase being linked to its increasing IT footprint and a growing volume of IT changes needed to support the energy transition – CPU refers to a 63% uplift in the volume of changes over a four year period as evidence.

86. We have seen evidence of the application of the two-tiered rates in various projects and we comment on the cost as necessary in our project/program assessments.

2.2.2 Proposed ICT expenditure (excluding cyber and CER)

87. We show CPU's proposed ICT capex and opex step changes in Table 2.1 and Table 2.2 respectively.

Table 2.1: CPU's proposed ICT capex (excluding CER and cyber security) - $m, real 2026

ICT Capex	CitiPower	Powercor	United Energy	Total
ICT - recurrent				
Customer enablement	4.6	10.8	4.2	**19.6**
EMS	8.8	20.6	12.3	**41.7**
End user device management	10.8	25.1	7.0	**42.9**
Facilities security	3.0	6.0	3.8	**12.8**
Infrastructure refresh	14.2	33.1	34.1	**81.4**
Market compliance	7.5	17.6	24.2	**49.3**
Market systems	7.0	16.3	17.6	**40.9**
Network management	17.0	39.6	61.1	**117.7**
Telephony	3.1	7.2	6.5	**16.8**
subtotal	**76.0**	**176.3**	**170.8**	**423.1**
ICT - non recurrent				
ERP & billing systems	30.9	72.1	71.2	**174.2**
Flexible trading arrangements	2.3	5.4	9.6	**17.3**
Market interface technology enhancements (MITE)	10.3	24.0	35.8	**70.1**
subtotal	**43.5**	**101.5**	**116.6**	**261.6**
Total	**119.5**	**277.8**	**287.4**	**684.7**

Source: EMCa table derived from CPU SCS models

ICT opex step change

88. CPU is forecasting a step up in ICT operating expenditure in all three DNSPs from modernising its systems, enable new capabilities, and increasing use of cloud-based technologies.[13]

[13] EMCa onsite workshops - ICT – final, slide 8

Table 2.2: CPU's proposed ICT opex step changes (excluding CER and cyber security) - $m, real 2026

Project		CitiPower	Powercor	UE	Total
Infrastructure refresh	Recurrent	3.2	7.5	10.9	**21.6**
ERP & billing systems	Recurrent	0.8	1.9	2.7	**5.4**
ERP & billing systems	Non-recurrent	10.0	23.3	20.4	**53.8**
IT situational awareness	Non-recurrent		2.8	2.8	**5.7**
MITE	Non-recurrent	3.1	2.2	3.1	**8.4**
Total		**17.1**	**37.7**	**40.0**	**94.9**

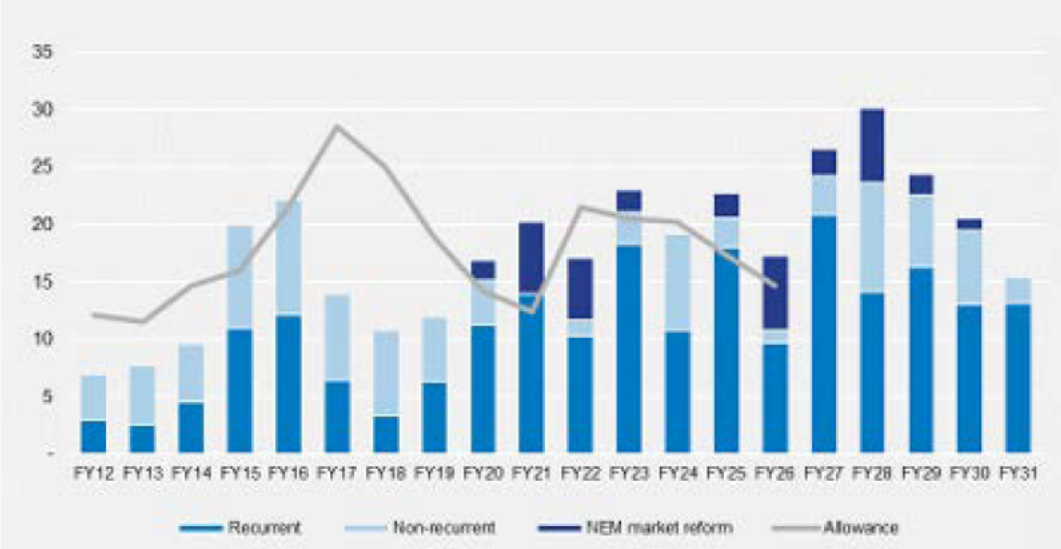
Source: EMCa table derived from CPU's SCS opex models

89. The historical expenditure and the forecast expenditure for the three DNSPs is shown in Figure 2.1, Figure 2.2, and Figure 2.3.

CitiPower expects a minor overspend of its allowance in the current RCP followed by a step up in capital expenditure

90. As shown in Figure 2.1, CitiPower will, if its forecast expenditure in FY25 and FY26 is accurate, slightly overspend its AER allowance in the current RCP. It then forecasts a significant step up in capex due to replacement of the two core ICT systems, uplifting cyber security capability, and continuing expansion of its IT footprint with network digitalisation.

Figure 2.1: CitiPower ICT capital expenditure -$m, 2026

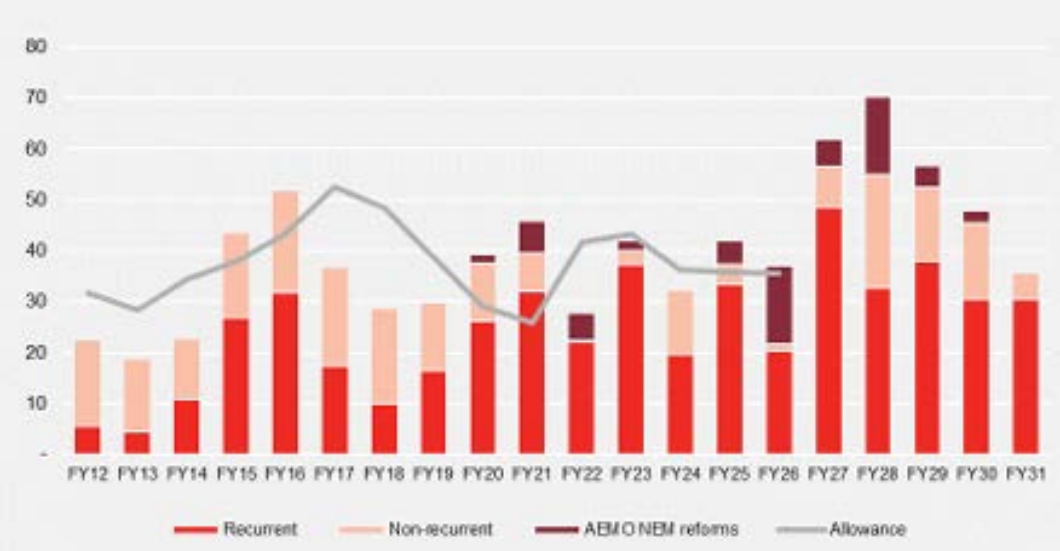


Source: CitiPower regulatory proposal – Part B (Explanatory Statement) page 60

Powercor expects a minor underspend of its allowance in the current RCP followed by a step up in capital expenditure

91. As shown in Figure 2.2, Powercor will, if its forecast expenditure in FY25 and FY26 is accurate, slightly underspend its AER allowance in the current RCP. Powercor attributes this to deferral of its Enterprise Resource Planning (ERP) replacement project to the next RCP, but which was offset by additional spending on its advanced distribution management system (ADMS) and market compliance changes. Powercor also forecasts a significant step up in capex due to replacement of its ERP and Billing systems, uplifting cyber security capability, and continuing expansion of its IT footprint with network digitalisation.

Figure 2.2: Powercor IT capital expenditure profile -$m, 2026

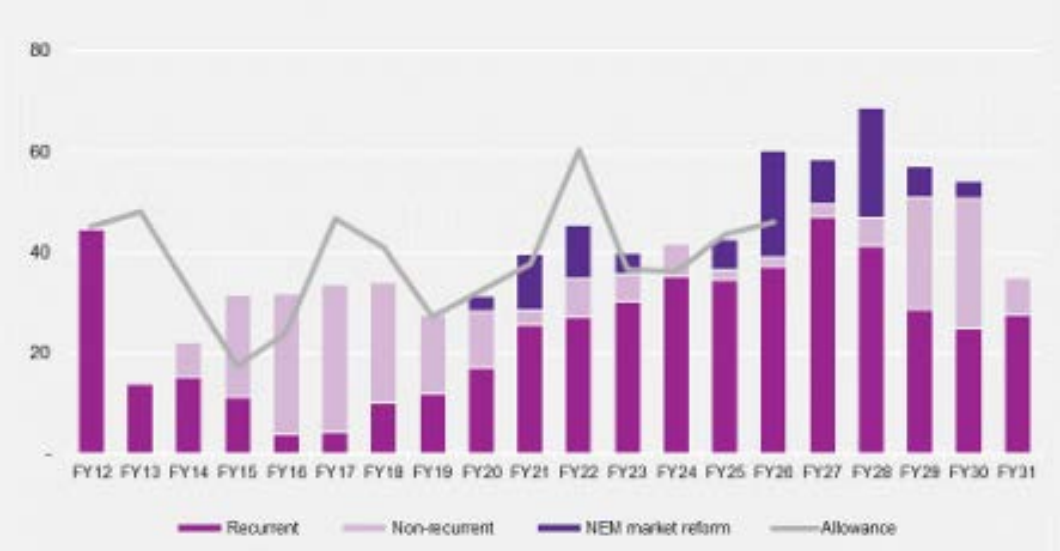


Source: Powercor regulatory proposal – Part B (Explanatory Statement) page 74

United Energy expects a minor underspend of its allowance in the current RCP followed by a step up in capital expenditure

92. As shown in Figure 2.2, United Energy will, if its forecast expenditure in FY25 and FY26 is accurate, slightly overspend its AER allowance in the current RCP. CitiPower also forecasts a significant step up in capex due to replacement of its ERP and Billing systems, uplifting cyber security capability, and continuing expansion of its IT footprint with network digitalisation.

Figure 2.3: United Energy ICT capital expenditure -$m, 2026



Source: United Energy regulatory proposal – Part B (Explanatory Statement) page 62

2.2.3 Proposed expenditure for CER and electrification

93. Table 2.3 and Table 2.4 show CPU's proposed capex and opex step changes for CER related expenditures.

Table 2.3: CPU's proposed CER capex - $m real 2026

Project	CitiPower	Powercor	UE	Total
ICT related CER				
Flexible services	9.8	22.8	14.6	**47.1**
Network data visibility	0.7	1.7	1.1	**3.5**
Non-network procurement platform	1.3	3.0	1.9	**6.1**
Subtotal	**11.8**	**27.4**	**17.6**	**56.7**
Network related CER				
Customer-driven electrification	**40.9**	**100.6**	**70.4**	**211.8**
Total	**52.6**	**128.0**	**87.9**	**268.6**

Source: EMCa table derived from CPU SCS capex models

Table 2.4: CPU's proposed CER opex step changes - $m, real 2026

Project		CitiPower	Powercor	UE	Total
Flexible services	Non-recurrent	9.4	22.0	13.5	**44.9**
Network data visibility	Non-recurrent	1.6	3.0	1.8	**6.4**
Non-network procurement platform	Non-recurrent	1.3	3.7	3.6	**8.6**
Total		**12.3**	**28.7**	**18.9**	**60.0**

Source: EMCa table derived from CPU SCS Opex models

2.2.4 Proposed cyber security expenditure

94. CPU businesses also propose capex and both recurrent and non-recurrent opex for cyber security, which we review in our separate report.

3 REVIEW OF PROPOSED CPU ICT EXPENDITURE

CPU has collectively proposed significant uplift in ICT capex over the next RCP due in part to replacement of two core systems – ERP and Billing systems – and to uplifts in cybersecurity and recurrent expenditure.

CPU has proposed recurrent expenditure which is comprised of nine projects. Our assessments of these projects were frustrated by lack of explicit links to historical expenditure and inadequate explanation of the bases for the proposed increased expenditure. We consider that the expenditure for six of the nine projects that we reviewed is inadequately justified.

We reviewed the three proposed non-recurrent projects and consider that in each case it is prudent for CPU to undertake the proposed work. The largest of these projects is the ERP and Billing systems project. For this project, we consider that the proposed project expenditure (capex and project opex) is reasonable, but that the proposed recurrent opex is not justified as net incremental expenditure.

The other two non-recurrent projects are 'market reform' projects (MITE and FTA). We consider that CP and PAL's proposed expenditure for MITE is reasonable, but that UE's proposed capex is overstated. For the FTA project, we consider that CPU's information on its functionality suggests that a proportion could be more appropriately considered as ACS, consistent with AusNet's proposal.

Overall, the proposed ICT expenditure is overstated.

3.1 Introduction

95. In section 3.2 we assess each of the recurrent projects/programs identified in Table 2.1.
96. In section 3.3, we assess each of the non-recurrent projects identified in Table 2.1.
97. In section 3.4, we assess the deliverability of the proposed ICT program.

3.2 Assessment: Recurrent ICT program

3.2.1 Overview of recurrent expenditure

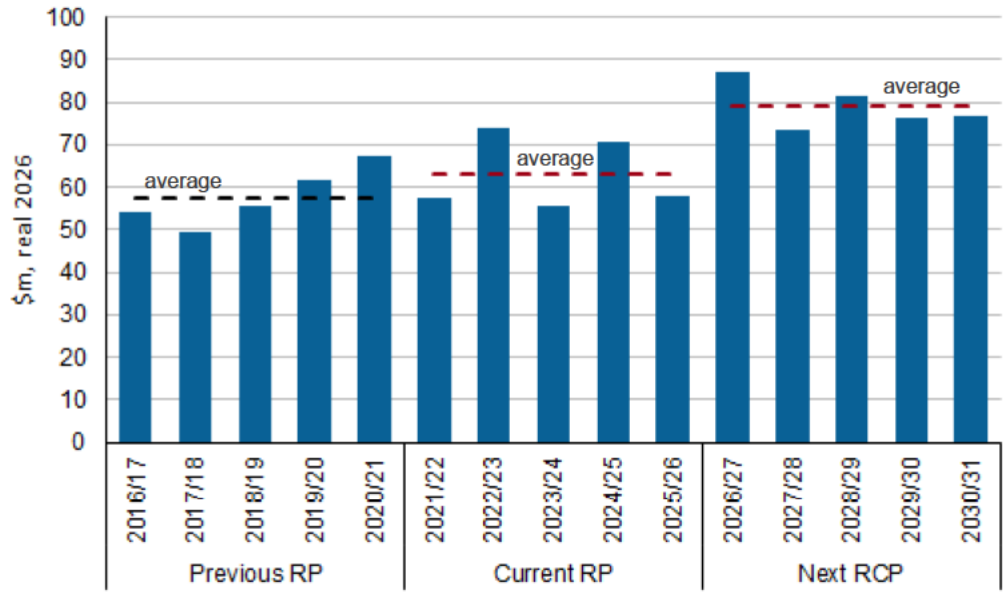
98. Table 3.1 summarises a comparison between the three CPU businesses' recurrent expenditure from the current RCP to the next. The largest increase is Powercor's at +35%. The annual ICR recurrent totex profile is shown in Figure 3.1.

Table 3.1: Historical vs proposed recurrent ICT (totex) - $m, 2026 (excluding CER ICT, post-2025 NEM market reforms and cybersecurity)

	2021-26	2026-31[14]	Difference
CitiPower	67	76	+16%
Powercor	133	180	+35%
United Energy	165	170	+3%
Total	**365**	**428**	**+17%**

Source: EMCa onsite workshops – ICT – final, slide 8

Figure 3.1: PAL recurrent ICT totex - $m, 2026 (without labour escalation)



Source: PAL IR015 – ICT cyber and CER, Table 4

99. CPU present its proposed expenditure as a bottom-up build comprising nine recurrent projects, which we assess below.

3.2.2 Customer enablement

What CPU has proposed

100. As shown in Table 2.1, CPU has proposed $19.6 million recurrent capex in the next RCP to maintain the currency of online gateway services to customers.

101. The principal customer gateway (myEnergy) provides a one-stop-shop for customers to access common services via a single view.

Our assessment

Identified need supports investment in customer enablement in the next RCP

102. CPU state that *'[if] investment in our gateway services was not executed during the 2026-2031 regulatory period, the customer gateway services would become unstable and unreliable leading to risk of failure…The technology which supports these platforms is now*

[14] The forecast expenditure is derived from the onsite presentation prepared by CPU and differs somewhat with the forecast expenditure derived from the SCS capex model as shown in Table 2.1

ten years old. There is a high risk of platform instability when technical currency is not maintained.[15]

103. CPU presents a credible risk analysis of the likelihood and consequences of unstable gateway services in its business case.

104. We are satisfied that a prudent operator would act to ensure its customer enablement services are adequately maintained through efficient investment.

CPU identified three options and selected the prudent approach.

105. CPU's three options presented in the business cases are 1. Do not maintain currency, 2. Maintain currency, and 3. Enhance currency. We consider, as does CPU, that neither failing to maintain currency nor 'enhancing currency' are prudent approaches.

106. The preferred Option 2 scope includes updates to the front-end technology for the myEnergy, my Supply, customer notifications and field audit gateways. CPU advises that maintaining currency also enables receipt and application of defect fixes from its vendors.

The eConnect platform rebuild proposed by CP/PAL is a significant component of the proposed forecast

107. We asked CP/PAL[16] to provide more justification than available in the business case for its proposed rebuild of the eConnect platform. We were initially of the view that this should be classified as non-recurrent expenditure because as proposed the project will add capability.

108. CP/PAL responded to our questions, which we summarise as follows:

- The current Salesforce eConnect platform is a customised solution however Salesforce is no longer investing in new features for CP/PAL's version; it will be at end-of-life during the 2026-31 regulatory period
- While the project is larger than the usual annual upgrade, it is predominately being undertaken to maintain services (i.e. from its Salesforce platform)
- Optimal (economic) timing was not derived by CP/PAL because it has not undertaken a cost-benefit analysis (which is not required because it is recurrent expenditure), and
- The cost estimate is based on previous experience with similar projects.

109. We are satisfied that it is reasonable to assume that the current version of Salesforce eConnect platform will need to be replaced in the next RCP to maintain services and the expenditure is appropriately classified as recurrent.

Cost estimate is reasonable

110. The expected expenditure in the current RCP for 'customer engagement' is $9.4 million (CP), $19.3 million (PAL), and $20.1 million (UE), a total of $48.8 million.[17] This is considerably more than the $19.6 million capex proposed for the next RCP.

111. CPU has provided a reasonably detailed bottom-up build of the cost for scope it proposes for eConnect, mySupply, myEnergy, FAQ, and customer notifications portal.[18]

112. We are satisfied that the cost is reasonably derived given the early stage of the project lifecycle that the business case and cost estimate reflect, which implies preliminary level of estimation accuracy.

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15 PAL BUS 7.10 – Customer enablement – Jan2025 – Public, page 9

16 United Energy does not use the eConnect gateway service – see UE BUS 7.10 – Customer Enablement – Jan2025 - Public

17 Powercor - IR015 - ICT, CER and cyber security - 20250428 – public, Table 4, and equivalents for CP and UE

18 PAL MOD 7.17 - Customer enablement cost - Jan2025 – Public; UE MOD 7.17 – Customer enablement cost- Jan2025 - Public

Finding

113. The proposed customer enablement recurrent expenditure is reasonable.

3.2.3 Enterprise Management Systems (EMS)

What CPU has proposed

114. CPU propose total capex across the next RCP of $41.7 million, as shown in Table 2.1. The scope of work encompasses upgrades, refreshes or enhancements to a large number of Enterprise Management Systems (EMS). The drivers for the investments vary according to the application, falling under one or more of the following categories: out of vendor support/aging platform, changes to technology landscape, and external factors/ industry trends.

Our assessment

There is a prima facie case for investment in the next RCP to update, upgrade or refresh selected EMS in the next RCP

115. CPU has identified three drivers for recurrent investment in the EMS over the next RCP:[19]

- Applications out of vendor support or aging platforms - CPU states that '*the majority of our current applications will run out of vendor support in the upcoming regulatory period…[which] would expose us to increased risks of failure or breaches, and as a result, also expose our customers to increased safety, security, and financial risks*
- Changes to other parts of CPU's technology landscape – *'when undertaking necessary changes or transformations, existing application integrations and customisations become obsolete and need to be refreshed or re-written'*; the proposed ERP and Billing system transitions are given as examples, and
- External factors and industry trends – including evolving cyber security threats, technology advancements, and changing customer requirements.

116. Good industry practice is to maintain currency of IT systems and applications – that is, avoiding significant technology debt. The three drivers denoted above collectively present a compelling basis for CPU to evaluate the steps needed to address the identified risks. The key risks are identified as:

- Supply restoration time impacted by system failure
- System outages cause protection operation issues, and
- IT system failure.

CPU considered three options and selected the prudent approach.

117. CPU presents analysis of three options in its business case:

- 1. Do not maintain currency,
- 2. Maintain currency (recommended), and
- 3. Maintain and enhance our systems.

118. We consider that Option 1 is not consistent with good industry practice (GIP) and CPU has presented a solid analysis in the business case as to why adopting Option 1 would not be prudent.

119. Option 3 is $6.3 million (23%) more expensive than Option 2 and CPU has assessed the NPV for this option to be less than its preferred Option 2. As said above, maintaining the currency of IT applications, systems, etc is consistent with GIP and so we have focussed on the proposed scope and cost of the proposed Option 2 EMS work in the next RCP.

[19] PAL BUS 7.07 – Enterprise management systems – Jan2025 – Public, page 7

The proposed cost appears to be significantly less than is to be expended on EMS in the current RCP

120. As is typical with the CPU recurrent project business cases, there is little or no information in the business cases or the cost models about historical expenditure. We understand that there are challenges for CPU to provide data for valid comparison, however historical expenditure, and assessment of the variance (if material) between the current and next RCP is a fundamental requirement of the AER's guidance note for ICT recurrent expenditure assessment.

121. We therefore asked CPU to provide historical EMS expenditure. The aggregate amounts from FY20-FY24 (the most recent 5-years of the data provided) for the three DNSPs are:[20]

- CitiPower: $29.1 million
- Powercor: $64.9 million, and
- United Energy: $51.8 million.

122. The aggregate of $145.7 million is obviously significantly more than the $41.7 million proposed for the next RCP. CPU identifies RIN classification issues in its response to our Information Request. It also advises in its business case that CPU has 300+ IT systems and that only 25 of them are identified as requiring expenditure in the next RCP.[21] Nonetheless, the difference between the EMS historical actuals and for the next RCP is large and brings into question the integrity of the response. It may be the result of data error and we are not confident in using it as a means of assessing the proposed expenditure.

The principles underpinning the proposed scope of work are sound

123. CPU describes its approach to maintaining the currency of the EMS applications as:

- Maintaining 'N-1' currency, and
- Refreshing to secure security patches and defect fixes and address external factors or changes to other parts of our technology landscape.

124. These principles are appropriate and are consistent with GIP. We therefore looked for the consistent application of the principles by CPU in forming the scope of work.

125. CPU has provided reasonably detailed cost models[22] which provide the annual estimated cost for the proposed upgrades etc. The expenditure profile is weighted towards the early years of the next RCP and we have no material concerns about the deliverability of the program of work.

126. However, neither the business cases nor the cost models provided explain the drivers of investment at the application level well, noting that some large initiatives are proposed. By exception, we consider the larger investments below.

SAP BW on Exadata and other reporting-related systems

127. The largest applications category measured by proposed expenditure is Reporting, with approximately 30% of the proposed EMS expenditure for CP/PAL directed to various systems. The bulk of the expenditure is for refresh of on-premise SAP Business Warehouse (BW) on Oracle Exadata database machine (CP/PAL). In appendix C of the business case reference is made to maintaining currency, however it is not clear why annual refreshes comprising over $0.8m pa are required.

128. By contrast, UE's CBA model did not include a cost breakdown, but from the business case appendix we note that UE does not use SAP BW on Exadata as part of its reporting suite, but common systems include SAP BW on Hana, SAP Data Services, and Tableau to

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20 PAL IR008 - ICT and cyber security and UE IR008 - ICT and cyber security

21 PAL BUS 7.07 – Enterprise management systems – Jan2025 – Public, page 2

22 PAL MOD 7.13 – Enterprise management systems cost - Jan2025 – Public; UE MOD 7.13 – Enterprise management systems cost - Jan2025 - Public

provide reporting. Given the absence of a cost breakdown, we are not able to interrogate the reasonableness of the proposed recurrent expenditure.

Salesforce Field Services

129. Similarly, annual refreshes comprising labour and contracts of $1 million p.a. for CP/PAL are forecast, with the explanation in Appendix C in the business case being 'annual upgrades and minor improvements.' This in insufficient information in our view.

130. Again, for United Energy, no cost breakdown was provided to enable our review of the reasonableness of the proposed recurrent expenditure.

Upgrading to Windows 12 in FY29

131. CPU has forecast requiring $3.0m ($2024) across FY28 and FY29 to upgrade to Windows 12. CPU provides no explicit justification for the timing of this work, however provision for Windows 12 five years after the upgrade to Windows 11 (in 2024) is reasonable.

CPU proposes consolidation of its Copperleaf system onto a single instance without adequate explanation of costs and benefits

132. CPU also identifies consolidation of its Copperleaf system onto a single instance across the three businesses without any further explanation of the cost to United Energy, and the realisable benefits from doing so, including reduced opex and capex costs over time. At an approximate cost of $2 million to CP/PAL alone,[23] this is not a trivial initiative, and we consider that the expenditure has not been adequately justified.

Findings

133. We consider that the proposed capex for the next RCP is slightly overstated.

134. CPU has presented a sound basis for maintaining the currency of its EMS population over the next RCP. It has identified 25 applications that it considers require upgrade or refresh and one project to consolidate an application across the three DNSPs.

135. The total capex across the three DNSPs proposed for the next RCP is much less than CPU has advised it actually spent in the period FY20-FY24 (the latest 5-year actual data) however we have concerns with the historical data.

136. We do not consider that CPU has provided sufficient evidence that it has applied its investment principles to the individual applications. That is not to say that it has not done so, however it is not evident from the information provided. For example, insufficient information is provided by CP/PA and by UE (in particular) to support the expenditure on reporting solutions, Salesforce Field Services, and the Copperleaf consolidation.

3.2.4 End-user device management

What CPU has proposed

137. As shown in Table 2.1, CPU propose aggregate capex of $42.9 million to refresh laptops, computers, mobile phones, tablets, and meeting room technology because they are at the end of their useful life.

Our assessment

Meaning of end of useful life of end user devices is reasonable

138. CPU refers to the characteristics of end-of-useful life as:

- Deteriorating performance
- Technical obsolescence

[23] PAL MOD 7.13 – Enterprise management systems cost - Jan2025 - Public

- Capacity constrained, and
- Increased security risk.

139. As a result, the devices may no longer perform their intended role, diminishing business productivity, and causing other detrimental impacts.

140. We are satisfied that at some point one or more of these characteristics means that it is prudent to replace ('refresh') the device. Table 3.2 shows CPU's assumed asset lives. As discussed further below, we consider these to be reasonable, with the exception of mobile phones.

Table 3.2: CPUs default average useful device lives

Device	Average useful life (years)
Laptop	4
Desktop	4
Electronic tablet	3
Mobile phone	2
Meeting room technology	4

Source: PAL BUS 7.08 – End user device management – Jan2025 – Public, Table 2

CPU considered three options and selected the prudent approach

141. CPU presents three options in its business case:

- 1. Do not maintain device currency,
- 2. Replace devices at end of useful life,
- 3. Replace in bulk at the beginning of the period.

142. Based on the information provided in the business case and our experience, we are satisfied that Option 1 is not a prudent path and that Option 3 is inferior to Option 2. The preferred Option 2 is the prudent choice.

143. We therefore considered the cost of the proposed expenditure, based on the trend analysis approach preferred by the AER in its guidance note on ICT expenditure assessment.

CPU's proposed spend in the next RCP is significantly higher than for the current RCP

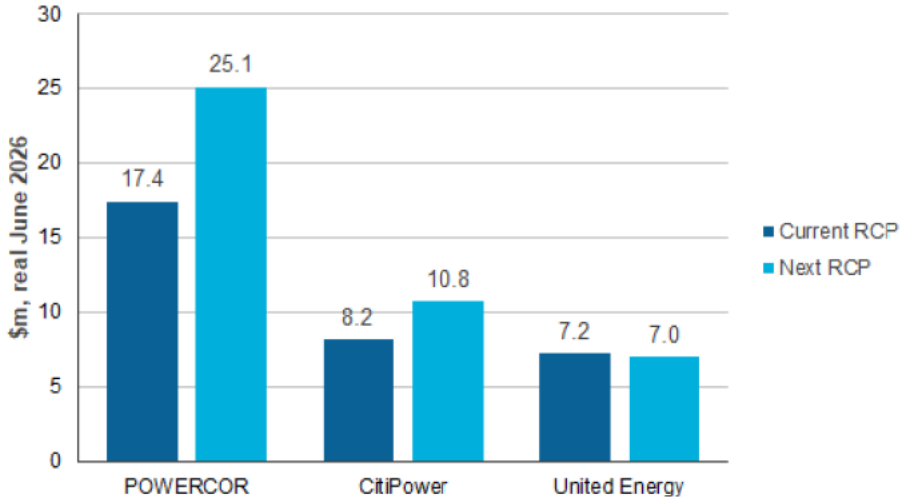
144. We asked CPU to provide the user devices expenditure for the current period because it was not provided in either the business case or the cost model.[24] Figure 3.2 summarises the response and comparison with the forecast capex from the capex model. The increases are:

- Powercor +44%
- CitiPower +31%, and
- United Energy -3%.

145. Across the three DNSPs the uplift is 31% but as shown, this is mainly due to the big increase in Powercor's proposed expenditure.

[24] PAL MOD 7.15 - End user device management cost - Jan2025 – Public for example

Figure 3.2: Comparison of CPU end user device expenditure – current and next RCPs - $m, 2026



Source: Responses to IR015 (PAL), IR016 (CP), IR013 (UE) Table 4 and capex model

CPU provided the basis for the variance to the historical spend in response to our information request

146. Due to the lack of information about the significant variance between the current period forecast spend and the proposed capex for the next RCP in the business case and model, we asked CPU to explain via an information request. The key information from CPU's response is shown in Figure 3.3.

Figure 3.3: CPU response to Information request IR015 (excerpt)

Bases for increase in the next RCP

- *an increase to the volume of iPhone replacements driven by a change to the replacement cycle from 3 years to 2. The new cycle reflects changes in technology advancements, evolving business needs, improved phone hardware features and battery life. As a part of this review, the cyclic replacement cycle for iPads was revised from 2 to 3 years*
- *increase to the iPhone unit prices as later device versions include greater capacity*
- *the introduction of LiDAR capability requiring the purchase of higher specification iPhone Pro and iPad devices*
- *projectors and video conference facilities across limited meeting rooms being replaced by modern conference room technology at a higher cost. There has been substantial growth in the number of meeting rooms with this new technology to support remote collaboration*
- *an increase to the minimum laptop specification for all employees, together with increases to component/supply chain/manufacturing costs resulting in higher unit prices*
- *newer, higher specification, laptops for selected areas of the business to better execute their roles. This includes the Network Design, Network Control Room and Network Analytics teams.*

147. We consider that the qualitative explanation above is not sufficient to support the significant uplift in proposed expenditure by CitiPower and Powercor. A quantified variance analysis

should have been provided to help us understand the costs *and benefits* of the significantly higher expenditure, noting that no cost increase is proposed by United Energy.

Findings

148. We consider that CPU's proposed expenditure is significantly overstated.

149. Whilst CPU has selected the appropriate 'maintain currency' option for managing its end-user device fleet on the basis of useful service life, we do not see sufficient justification for:

- Powercor's proposed 44% uplift in the next RCP compared to the current RCP, nor
- CitiPower's proposed 31% uplift in the next RCP compared to the current RCP.

150. We consider that United Energy's proposed recurrent expenditure is reasonable.

3.2.5 Facilities security

What CPU has proposed

151. As shown in Table 2.1, CPU has proposed capex of $12.8 million across the three DNSPs which we assume[25] is for work on its building access control systems (BACS)[26] in the next RCP to address security vulnerabilities.

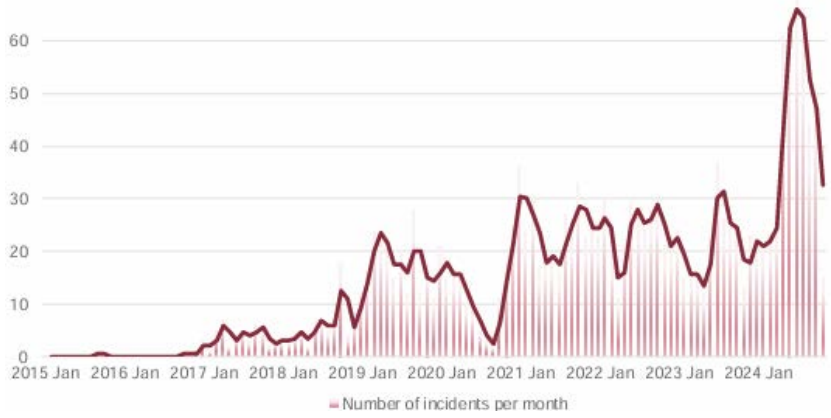
Our assessment

152. The business cases presented by CPU cover other aspects of physical security (i.e. security fencing, building upgrades, and environmental security), however our focus is on the proposed BACS/IT expenditure.

CPU has provided insufficient information to support investment in BACS over the next RCP

153. CPU identifies unauthorised access to its assets to steal copper as a growing concern. Figure 3.4 shows the increasing incidents. CPU advises that *'[m]any incidents result in service disruption to our customers and present safety hazards to the community and our staff, as well those interfering with our assets*.'[27]

Figure 3.4: CP/PAL copper theft incidents



Source: PAL BUS 8.04 – Property recurrent expenditure – Jan2025, Figure 1

154. The major reference in the business case is to deficiencies with respect to physical security relate to security fencing. No information is provided about the state of the BACS assets. No analysis is provided about the performance of the BACS and the contribution of BACS to

25 The Facility security program includes more than ICT-related work

26 We interpret BACS to include CCTV assets, whereas in some places in CPUs business cases, these terms are used separately, but in the context of physical security

27 PAL BUS 8.04 – Property recurrent expenditure – Jan2025, page 3

zone substation security. There is however one reference to aged CCTV and associated technology integration of security controls.

155. No historical data is provided about its recurrent investment in BACS nor the assumed BACS useful operating life.

CPU considered three options and has selected the most expensive, improvement-oriented approach

156. CPU considers three options in the business case:

- 1. *'Do not maintain property recurrency'*,
- 2. '*Maintain property recurrency*', and
- 3. '*Maintain property recurrency with targeted upgrades*.'

157. It selected Option 3 for a number of factors that go beyond the scope of our assessment. With respect to physical security, the differentiating factors between the three options are:

- Option 1 increases the likelihood of a major physical security incident, possibly leading to failure to deliver a safe and dependable electricity supply, breaching section 6.5.6(a)(iii) of the Rules[28]
- Option 2 involves replacement of existing aged CCTV and associated technology integration of security controls which will maintain surveillance capability but *which does not adequately address the increased security risk resulting from the increased incidents of theft and unauthorised entry of buildings and assets across our network*,[29] and
- Option 3 provides:[30]
  - *enhanced surveillance capability through the expansion of our existing CCTV and BACS integration programs, which will provide the flexibility necessary to provide real-time video monitoring and situational awareness, leading to both increasing deterrence and detection of security incidents*
  - *the installation of autonomous drones, which will provide enhanced surveillance and monitoring of assets including depots, storage facilities and construction sites which can be in either urban or rural locations.*

158. CPU concludes its comparative analysis by stating that *'We therefore assess that option three responds to all identified needs outlined above.'*[31]

CPU has provided insufficient justification for the level of recurrent BACS or other ICT-based recurrent expenditure for physical security in the next RCP

159. Whilst (i) CPU's provided business case presents some information supporting the basis for the proposed investment in improving surveillance capability, and (ii) the model[32] provided shows the cost build-up, we have the following concerns:

- The need for BACS replacement in the next RCP is inadequately justified
- The proposed quantum of expenditure in the next RCP is inadequately justified, and
- The root cause analysis to support improvement to the systems and the cost-benefit analysis to robustly demonstrate that there is a net benefit for customers in the proposed incremental (non-recurrent) investment (per Option 3) are both absent.

28 PAL BUS 8.04 – Property recurrent expenditure – Jan2025, page 6

29 PAL BUS 8.04 – Property recurrent expenditure – Jan2025, page 8

30 PAL BUS 8.04 – Property recurrent expenditure – Jan2025, page 9

31 PAL BUS 8.04 – Property recurrent expenditure – Jan2025, page 9

32 PAL MOD 8.04 - Property recurrent - Jan2025

Findings

160. CPU has not provided sufficient compelling information to support the proposed ICT-related physical security expenditure in the next RCP.

161. We expect that there may be a case for some level of investment in the maintenance of the performance of the BACS in the next RCP, however CPU provides insufficient information for us to conclude that its proposed expenditure is justified.

3.2.6 Infrastructure refresh

What CPU has proposed

162. As shown in Table 2.1 and Table 2.2, CPU proposes aggregate capex of $81.4 million and an opex step change of $21.6 million to refresh its IT infrastructure over the next RCP.

163. The expenditure forecast is based on a change in approach, with CPU planning to move from an almost exclusive on-premise infrastructure suite to a combination of infrastructure applications (e.g. IaaS). The driver for investment in the next RCP is the need to maintain reliability and functionality of the infrastructure and the driver for the new strategy is market complexity and changing vendor offerings.

Our assessment

The identified need is compelling, supporting both refreshes and consideration of an alternative infrastructure management strategy

164. CPU advises that its current approach of running the majority of its IT infrastructure on-premise is unlikely to be optimal going forward. Whilst maintaining CPU's IT infrastructure in a structured and timely way is seen as critical to meeting its compliance obligations and maintaining services, CPU concludes that it also needs to ensure that existing IT capabilities keep up with modern technology. It anticipates that:

- Progressively more IT solutions are likely to cease to be available as on-premise applications, and
- The increasing complexity of '*managing and adapting this infrastructure…due to evolving market options, industry demands and internal needs'* [33] requires a different approach to near 100% on-premise infrastructure.

165. In our view, this is a reasonable position and a prudent operator needs to consider alternatives given these are now both 'forced' on utilities by vendor migrations to the cloud and there are now a range of choices in addition to on-premise ownership.

CPU considered four options and has selected the prudent approach

166. Lifecycle maintenance to retain currency and reliability is the driver behind the options considered by CPU for the next RCP. The various options considered by CPU in the business case are described in Figure 3.5.

167. CPU has selected Option 3 on the basis that it will be able to select the most appropriate hosting solution to '*optimise infrastructure management and sustain stable operations as utilisation of technology to support network operations continues to outgrow our traditional on-premise physical infrastructure approach.'*[34]

168. The totex for Option 3 is the second lowest of the four options, with Option 1 being $10 million cheaper due to the absence of opex required for cloud services. Option 3 is assessed to have the highest NPV by a slim margin over Option 4. Option 2 has no merit compared to Options 1, 3 and 4 in our view.

[33] PAL BUS 7.04 – Infrastructure refresh – Jan2025 – Public, page 8

[34] PAL BUS 7.04 – Infrastructure refresh – Jan2025 – Public, page 2

Figure 3.5: CPU options for infrastructure refresh in the next RCP

Infrastructure refresh options considered

1. Base case (maintain existing infrastructure): this option implements a regular and structured lifecycle management approach to updating our IT infrastructure, consistent with our existing management practices (i.e. do-nothing different). That is, it continues a traditional on-premise infrastructure model that updates IT infrastructure beyond vendor recommended upgrade dates where possible.

2. Maintain existing infrastructure with more frequent upgrades: this option implements a regular and structured lifecycle management approach to updating our IT infrastructure, continuing on a traditional on-premise infrastructure model. Rather than prolonging lifecycles beyond recommended dates, this option will update 100% of IT infrastructure forecast to be out of vendor support by 2031.

3. Criteria-based IT infrastructure refresh: this option will evolve the implementation of our IT infrastructure to support growing operational and information technology workloads1 using a criteria-based approach to optimise hosting solutions.

4. Public cloud infrastructure refresh: this option will evolve the implementation of our IT infrastructure to support growing operational and information technology workloads, with solutions favouring use of the public cloud.

Source: PAL BUS 7.04 – Infrastructure refresh – Jan2025 – Public, page 2

169. As CPU points out, Option 3 represents a fundamental change to management of its IT infrastructure. It proposes consideration of a combination of SaaS, PaaS, IaaS[35] and on-premise private cloud technologies for each infrastructure refresh decision.

170. CPU describes its 'workload placement methodology' as the decision support tool in sufficient detail in the business case (Appendix A) to illustrate the approach it intends to follow to select the solution for each of its IT infrastructure applications. It outlines the advantages over on-premise infrastructure (in some applications). CPU concludes that:[36]

> *'Modernising our infrastructure to be more scalable and adaptable to future compute and storage requirements is therefore considered a least-regrets investment. Under option three, we would maintain full control of critical hosting solutions while ensuring a balanced investment approach that utilises set criteria to manage risk specific to our IT networks.'*

171. We consider that this is a reasonable conclusion and that Option 3 is likely to capture cost efficiencies from the newer platforms, whereas Option 1 is structurally likely to lead to increasing costs over time.

CPU applies an acceptable approach to determine the refresh timing for each infrastructure item

172. We asked CPU to expand on the statement in the three business cases that each of the DNSPs upgrade infrastructure beyond the recommended timelines and that there is an increasing risk of doing so. We summarise CPU's response as follows:[37]

- CPU assess the refresh requirements for each infrastructure item case-by-case, taking into account the technical and financial benefits associated with a refresh, and the risks of not performing a refresh - using a consultant to assist with the analyses and decisions

[35] Software as a Service, Platform as a Service, Infrastructure as a Service

[36] PAL BUS 7.04 – Infrastructure refresh – Jan2025 – Public, page 22

[37] United Energy - IR008 - ICT and cyber security - 20250318 – public, pages 8-9

- Some assets may be utilised beyond standard refresh cycles where they consider the benefits outweigh the risks, and
- The majority of their hardware will be out of standard vendor support if not refreshed in the next RCP, presenting an increasing operational risk of unreliability, future incompatibility and/or escalating maintenance costs the longer it is not refreshed.

173. CPU presents a number of further matters in the same response that reinforce the increasing operational risk, which are all reasonable concerns.

Historical expenditure was not presented

174. As noted elsewhere, CPU's business cases do not provide sufficient information on historical expenditure in its business case or model. We consequently requested the annual historical total expenditure for infrastructure refresh but we were advised by CPU that the information was not readily available.[38] This meant that we could not consider the totex trend as part of our assessment.

CPU's cost estimate is reasonably derived

175. In response to our information request, CPU provided the underlying calculations of its costs for the infrastructure refresh projects.[39] This shows adequate detail of the cost build up and illuminates the assumptions about the mix of SaaS, private and public cloud PaaS/IaaS and on-premise hosting options. When we combine this with the explanation of the 'workload placement methodology' that we understand it has followed, we can understand in broad terms the outcomes and opex/capex expected to be incurred. Our assumption is that the mix is a preliminary view and therefore the capex versus opex trade-off is similarly preliminary.

176. Nonetheless, given the timing mismatch between the regulatory process and the infrastructure refresh hosting decisions, we consider the costs are reasonably derived.

177. We note that base year opex has been deducted from the proposed recurrent opex to arrive at the step change.[40]

CPU's analysis reasonably captures risk reduction benefits for the purposes of options comparison

178. The key risk-based benefit from Option 1 by adopting Option 3 is derived from reducing the impact of risk IT01 (system failure) as shown in Figure 3.6. We focussed on understanding the assumptions leading to this result.

Figure 3.6: CPU benefits analysis – results for CP and PAL

			Total risk			
Business risks			1. Maintain status quo	2. Upgrade as is, more often	3. Infrastructure refresh - criteria based	4. Infrastructure refresh (outsourced)
Reliability	BR3	Customer loss of export capability due to system failure	19,478	19,478	3,896	3,896
	BR4	Customer loss of export capability due to cyber attack				
	BR5	Supply restoration time impacted by system failure	6,744,841	6,744,841	1,348,968	1,348,968
	BR6	Supply restoration time impacted by cyber attack				
Compliance	BC1	Delays in publishing key data to the market due to system failure	772,533	309,013	298,007	745,016
IT risks						
Outage	ITO1	System failure	70,940,083	23,646,694	23,094,286	23,094,286
	ITO2	System down due to cyber attack				
	ITO3	System down due to cyber attack - critical OT systems (ADMS, etc)				
Suitability and system sustainability	ITS1	Increased change management costs				
	ITS2	Data storage exceeded	2,445,508	1,222,754	225,419	169,064
	ITS3	Performance degradation	6,960,354	3,480,177	1,392,071	696,035
	ITS4	Increased maintenance costs				
Other benefits						
		Annual total risk	**87,882,796**	**35,422,957**	**26,362,646**	**26,057,266**

Source: PAL MOD 7.08 - Infrastructure refresh risk - Jan2025 - Public

38 PAL response to IR015 – ICT, CER and cyber security – 20250428, page 7

39 United Energy - IR008 - Infrastructure refresh underlying calculations

40 PAL MOD 7.07 - Infrastructure refresh cost - Jan2025 - Public

179. There are only two differences between Option 1 and Option 3 for risk IT01:[41]

- The likelihood of a system outage is reduced by 2/3rd in Option 3 compared to Option 1 because of the assumed '*lower likelihood of system failure due to migration of infrastructure to cloud*', and
- The hours required to rectify the outage are assumed to reduce by 50% in Option 3 compared to Option 1 on the basis that '*modern technology infrastructure will require less time to rectify*.'

180. These assumptions are not supported by evidence, although reference is made to incident data to support the likelihood of an outage assumptions. We undertook a form of sensitivity analysis by moderating the assumed improvements in the two factors substantially – this still resulted in a positive NPV for Option 3 and a positive margin to Option 1.

181. We therefore consider that the incremental cost of Option 3 over the 'traditional' Option 1 is reasonable.

Claimed efficiencies from the proposed new approach are not quantified

182. CPU make several general and qualitative statements regarding (i) efficiencies it will derive from adopting its new workload placement methodology for selecting the hosting option for each required refresh solution, and (ii) the inefficiencies it would incur if it stayed with an on-premise approach. For example:[42]

> *'Our current infrastructure footprint is sufficient for yesterday's needs but is not an efficient model to continue investing in its current form. Increasingly, we foresee issues in its ability to meet our future IT demand as more applications move towards cloud and SaaS products (both due to efficiencies, as well as available market offerings).'*
>
> *'…inefficiencies related to uplifting IT capacity to meet our growing IT footprint would remain, as would our agility to meet these new requirements.'*

183. The context for the second quote is (i) an expectation by CPU that there will continue to be a growing number of IT system changes required over the course of the next RCP,[43] and (ii) the complexity of the solutions will increase to meet the needs of CER management systems and cloud-based enterprise resource systems.[44]

184. As shown in Figure 3.6, whilst CPU identifies potential sources of avoided costs, it does not attempt to quantify them. Further we would expect that adopting what we assume to be common selection of hosting platforms and 'refreshed' solutions across the three businesses there would be economies of scale. This may not necessarily translate to realisable efficiency benefits if, as assumed, CPU's ICT activity increases over the next RCP.

Finding

185. Although the preferred Option 3 is more costly than the cheapest credible option, based on the strategic analysis and the cost-benefit analysis provided by CPU, we consider the proposed approach is prudent and the costings are reasonable.

41 PAL MOD 7.02 - ERP and billing system risk - Jan2025 – Confidential. Tab Benefit IT01-a

42 PAL BUS 7.04 – Infrastructure refresh – Jan2025 – Public, pages 17, 22

43 PAL provides evidence of a 63% growth in IT system changes between 2020 and 2024 in its business case, page 8

44 PAL BUS 7.04 – Infrastructure refresh – Jan2025 – Public, page 9

3.2.7 Market compliance

What CPU has proposed

186. As shown in Table 2.1, CPU has proposed a combined $49.3 million to manage market compliance obligations that it expects, based on previous years, will arise over the course of the next RCP.

187. CPU has based its forecast on the historical outlay in the category over the past five years.[45]

Our assessment

The identified need presents a compelling case for making a provision for market compliance activity in the next RCP

188. CPU reasonably states that:

> *'[w]e have a need to ensure compliance with all current and future regulatory obligations that may occur over the 2026-31 regulatory period. As the energy market continues to evolve, the Rules and obligations under which we operate will change to ensure currency and relevance of the regulatory framework… As the energy market continues to evolve and the integration of distributed energy resources increases, we anticipate further amendments to our regulatory obligations.*[46]

189. We consider that a prudent operator would make provisions for likely regulatory changes over the ensuing regulatory period provided the provision is directed towards anticipated, high probability of the general evolution with numerous 'incremental changes' (i.e. rather than being predicated on individually-significant specific changes, and in which case such provision should not be included in the regulatory allowance, but rather, managed on a case-by-case basis as they arise through pass-through provisions).

CPU only considered two options and based its forecast expenditure on historical costs

190. CPU only considered two options: 'do nothing' and 'maintain compliance', not unreasonably rejecting the first of these options.

191. CPU advises that it based its expenditure forecast on the historical outlay over the past five years but did not provide in the business case or in its cost model the historical expenditure that it extrapolated from. Moreover, its cost model[47] appears to take a different forecasting approach in which it comprises a bottom-up build of four categories of compliance requirements:

- Metering & ICF, MSATS,[48] Tariffs, B2B procedures, and NEM reporting.

192. It is possible that these are the sub-categories of historical expenditure and the expenditure against each for the next RCP is the expenditure in $2026 from the current RCP, however this is not apparent form the information provided.

193. We therefore asked CPU to provide:

- The allowance for the current RCP from the AER's decision, and
- The historical expenditure.

194. CPU advised that it was unable to provide the information on the AER's allowance, but it provided its historical expenditure in $2026 for FY17-FY23. However, CPU advises the historical data provided includes the market systems expenditure[49] (which we discuss in

45 PAL BUS 7.09 – Market compliance – Jan2025 – Public, page 8

46 PAL BUS 7.05 – Network management systems – Jan2025 – Public, page 5

47 PAL MOD 7.16 - Market compliance cost - Jan2025 - Public

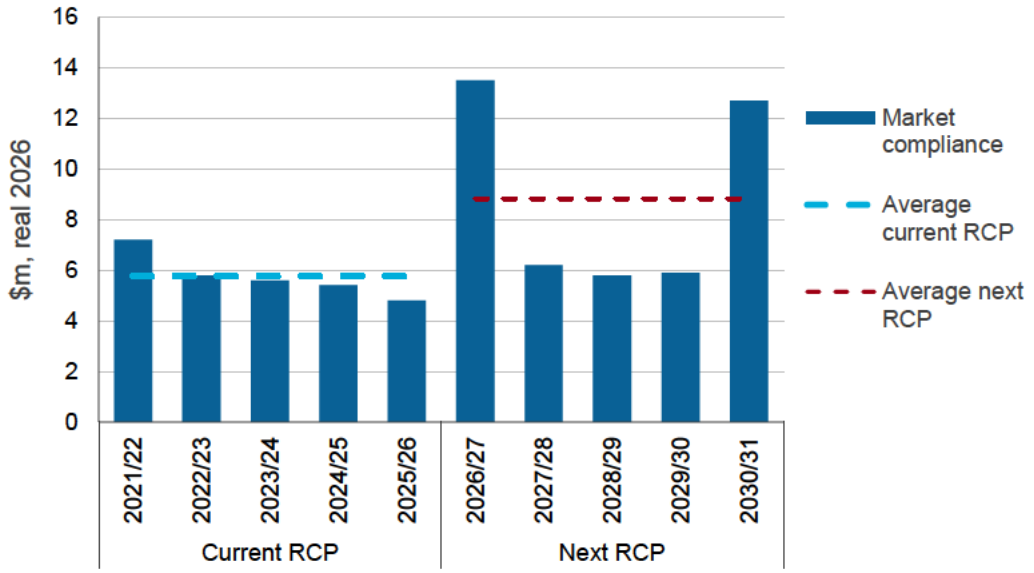
48 Market Settlement and Transfer Solution – a system used in the NEM for managing the settlement of electricity transactions and facilitating customer transfers between retailers

49 Powercor - IR008 - ICT and cyber security - 20250318 – public, page 11

section 3.2.8). This distorts analysis of the expenditure proposed under the market compliance business case and proposed as a line item in the capex model.

195. We show by way of example the historical and forecast information for CP/PAL in Figure 3.7. The spikes in expenditure in the next RCP profile are likely from the proposed market systems recurrent capex. The inference is that the market compliance expenditure on its own is higher in the next RCP than in the current RCP, however we are not able to determine by how much.

*Figure 3.7: CP + PAL market compliance and market systems totex – historical and forecast for next RCP -$m, 2026 (without labour escalation)**



Source: EMCa analysis of Powercor - IR015 - ICT and cyber security - 20250318 – public, Table 4
** historical data is from RIN*

196. PAL states that *'…there is a clear increasing trend in our RIN data linked to the growing number of system modifications required to ensure we meet our compliance obligations.'*[50] However, this is not evident form the historical data presented.

197. Similarly, United Energy states:[51]

> *'We have seen an increase in number of system modifications required to ensure compliance with changing market obligations. Our forecast expenditure for the next RCP is based on expenditure over the past 5 years and includes the industry wide assumption that this trend is likely to continue as the energy transition progresses. We have included small uplifts in our forecast expenditure to account for this trend.'*

198. However, sufficiently compelling evidence is not provided and without further justification from CPU, we consider that the forecast expenditure is overstated.

Finding

199. It is reasonable for CPU to propose expenditure in the next RCP to meet anticipated new, relatively small market compliance obligations. It is also reasonable to base the forecast expenditure on historical expenditure. However, CPU's forecast includes an uplift on its historical average expenditure and we consider that it has not adequately justified this.

[50] PAL IR008 - ICT and cybersecurity, page 11

[51] United Energy - IR008 - ICT and cyber security - 20250318 – public, page 11

200. In the absence of compelling information from CPU regarding the basis for the uplift in the next RCP, we consider a reasonable forward estimate should be the historical expenditure, which we infer from the business case to be entirely comprised of capex.[52]

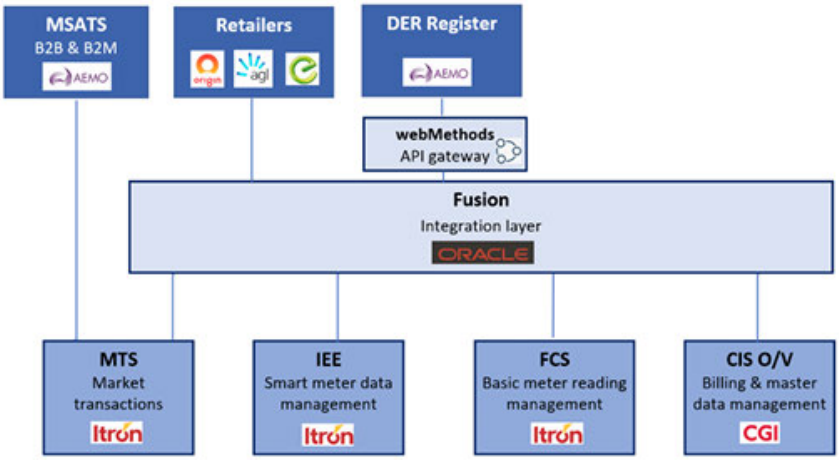
3.2.8 Market systems

What CPU has proposed

201. As shown in Table 2.1, CPU proposes aggregate capex of $40.9 million in the next RCP to maintain the currency of its market systems platforms.

202. CP/PAL's market systems and integration layer is shown diagrammatically in Figure 3.8. United Energy's market systems and integration layer is similarly configured but shows is based on some different platforms.[53]CPU's market systems provide centralised storage and validation of meter reading data, and manages communications, customer requests and data exchanges internally and with the external market (e.g. retailers and AEMO) in accordance with its compliance obligations.[54]

Figure 3.8: Market systems & integration layer



Source: PAL BUS 7.06 – Market systems – Jan2025 – Public, Figure 1

Identified need is compelling for investment in the next RCP

203. CPU reasonably contends that it must ensure its market systems are maintained because the risks involved in not doing so include:[55]

- A breach of notification obligations for a life support customer(s), posing a serious safety risk
- Being subject to ESC enforcement penalties, which are identified in the business case.
- Being subject to the AER's enforcement regime
- Loss of its licence to operate as a market participant in the NEM
- Reputational damage, and
- Not being able to efficiently adapt to rule or procedural changes in the NEM.

204. Together with the supporting information in the business case we are satisfied that a prudent operator would consider necessary actions to at least maintain the functionality of its market systems over the duration of the next RCP.

52 PAL MOD 7.16 - Market compliance cost - Jan2025 – Public, Table 1

53 The Integration layer is webMethods, and the Billing & master data management layer is on the SAP platform (SAP IS-U). per UE BUS 7.06 – Market systems – Jan2025 – Public, Figure 1

54 PAL BUS 7.06 – Market systems – Jan2025 – Public, page 7

55 PAL BUS 7.06 – Market systems – Jan2025 – Public, pages 7-9

CPU considered three options and selected the prudent path

205. CPU considered three options: [56]

- Option 1: Do not maintain currency – no updates to CPU market systems over the next RCP
- Option 2: Maintain currency –implement every second vendor update (N-1) to remain within vendor support, and
- Option 3: Maintain currency with more frequent upgrades – perform all upgrades as recommended and released by the vendor.

206. From the needs analysis, Option 1 is clearly not a prudent choice. Option 3 is assessed by CPU to provide a small reduction in risk but has a number of disadvantages compared to Option 2, including higher cost, lower NPV, technical defects (from untried software), and higher resource load. We consider also that Option 2 is superior to Option 3. Our focus therefore turned to the justification of the scope and cost of Option 2.

CPU's principles for upgrades support efficient investment

207. CPU states that it adopts the following principles to maintain currency of its market applications:[57]

- N-1 upgrades (every four years on average)
- The number/ nature of software defects resolved with the new release
- The end-of-life status of the current software version
- Hardware compatibility with the newer software version, and
- The degree to which all of the above relate to regulatory compliance.

208. These are sound principles and we looked for evidence that CPU has applied them in developing its expenditure forecast.

CPU presents a reasonably detailed cost build-up of its proposed option that appears to apply its expenditure principles to efficiently maintain market systems currency

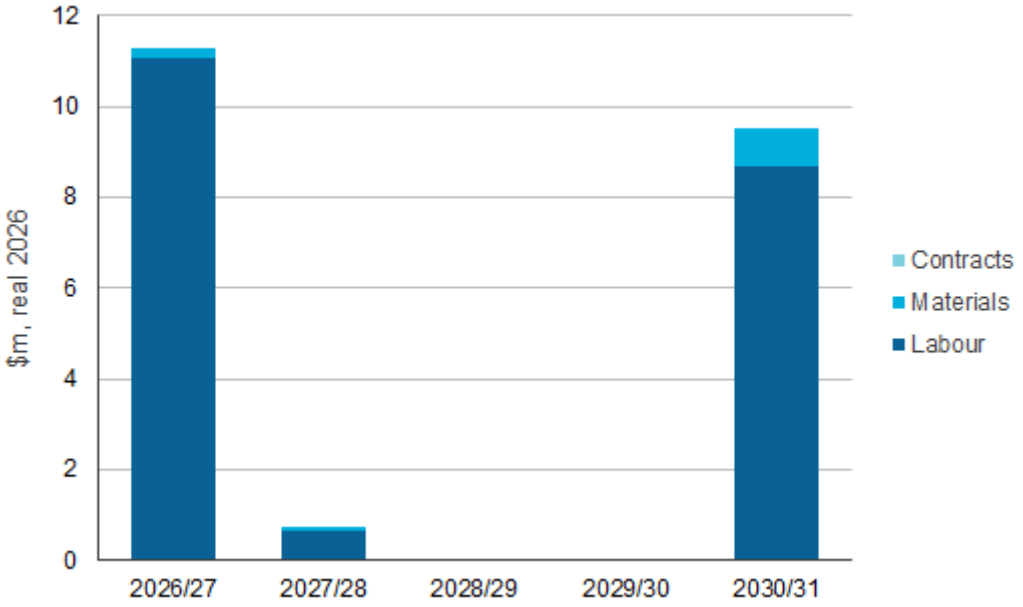
209. CP/PAL and UE each provided a cost model from which we observe the following:

- CP/PAL proposes upgrades or other forms of maintenance to the integration layer and the four market systems shown in Figure 3.8 (i.e. webMethods gateway, Fusion, IEE, FCS, MTS, and network billing)
  - UE similarly proposes upgrades to the integration layer and four market systems
- For the majority of the CP/PAL applications, four years between upgrades/refreshes is proposed, as illustrated in the expenditure profile, Figure 3.9,
  - Whilst not shown diagrammatically, UE's expenditure profile includes refresh of the webMethods integration layer after three years (FY28 ad FY31) but with considerably less expenditure in FY31, and
- There is significant reduction in maintaining the billing system in FY31 which is because from FY29/30 there will be only one instance of the converged SAP system across CPU.

[56] PAL BUS 7.06 – Market systems – Jan2025 – Public, page 10

[57] PAL BUS 7.06 – Market systems – Jan2025 – Public, page 18

Figure 3.9: CP/PAL market systems expenditure profile - $m, real 2026 (without labour escalation)[58]



Source: EMCa analysis from PAL MOD 7.11 - Market systems cost - Jan2025 – Public

210. Notwithstanding the issues we found with comparative analysis of the market compliance expenditure in section 3.2.7 because of the combined historical expenditure, we consider that the market systems recurrent expenditure is reasonably derived.

Findings

211. CPU has selected the appropriate strategy for refreshing its market systems – upgrading every three to four years (following an N-1 strategy).

212. Overall, we consider that the proposed expenditure is reasonable.

3.2.9 Network management systems

What CPU has proposed

213. As shown in Table 2.1, CPU proposes $117.7 million on market systems in the next RCP. CPU advises that *'[d]uring the 2026-2031 regulatory period, the existing versions of our network management systems will require upgrades, refreshes, maintenance releases and patching to ensure they continue to operate as intended.'*[59]

214. Its recommended approach is to maintain the currency of these systems by upgrading the systems in line with vendor recommendations.

Our assessment

It is good industry practice to regularly refresh/upgrade IT systems

215. Figure 3.10 shows the in-scope management systems. The 16 systems across the three categories collectively and, to a large extent individually, represent core operational capabilities for any DNSP. It is good industry practice to avoid building up significant technology debt. CPU proposes the following upgrade/refresh principle:[60]

58 The market compliance forecast expenditure shown in this graph is also included in the 'market systems and market compliance' trend information shown in Figure 3.7

59 PAL BUS 7.05 – Network management systems – Jan2025 – Public, page 12

60 PAL BUS 7.05 – Network management systems – Jan2025 – Public, page 20

'our timing profile is based on prudent and timely investments aligned with roughly every second vendor product release to ensure we remain within vendor support.'

216. We consider this to be a reasonable ICT asset management principle for most ICT systems, including network management systems.

Figure 3.10: CPU's network management systems

CATEGORIES	SYSTEMS
Core systems	• Advanced distribution management system (ADMS) • Electricity Distribution Network Access Register (EDNAR) • Historian • PRISM • Sensor IQ (SIQ) • Supervisory Control and Data Acquisition (SCADA) • Energy Work bench • Operating technology security integration platform • Low voltage distributed energy resource management (LV DERMS)
Geospatial systems	• Geospatial Information System (GIS) • Smallworld business integrator • Physical Network Inventory (PNI) • Map Insights (VPN), Network viewer (UE only)
Reporting and data processing systems	• Geospatial Analysis Warehouse • Network analytics platforms • Outages and Emergencies Suite (UE only)

Source: EMCa onsite workshops - ICT - final

CPU assessed three option in its business case and selected the prudent approach

217. CPU presents three options in its business case:

- Option 1: Do not maintain currency
- Option 2: Maintain currency, and
- Option 3: Maintain currency with more frequent upgrades.

218. Options 1 and 3 are rightly dismissed by CPU as being inferior to Option 2, given the principle upon which the strategy is based and the information about the benefits of the option espoused in the business case, which include but are not limited to:

- Alignment with CPU's compliance obligations which are dependent on network management systems (with detail provided in Appendix A)
- Functional improvements as part of recent vendor upgrades (Appendix B), and
- Technical improvements delivered by maintaining currency (Appendix C).

219. Our focus therefore turned to the cost estimate.

CPU's proposed expenditure is significantly more than its historical expenditure

220. CPU advises that its '*forecast cost per refresh is based on previous refresh costs incurred in 2021-2026 as well as projected infrastructure hardware replacement cycles.*'[61]

221. We therefore sought information about its historical costs as these are not provided in its business case nor in the accompanying model. In its response, CPU advised that the RIN

[61] PAL BUS 7.05 – Network management systems – Jan2025 – Public, page 20

equivalent for network management systems is 'Network assets and operations' and it provided tables of annual historical and forecast expenditure.[62]

222. Table 3.3 summarises the responses. Whilst CP, PAL and UE provided historical expenditure, it was presented as totex rather than identifying capex and opex to allow comparison with the forecast expenditure . However, using RIN data and other information in the IR response, we were able to confirm that proposed capex for the next RCP for CP and PAL was indeed at or slightly less than the historical level. On this basis, we consider the expenditure to be reasonable.

Table 3.3: CPU – historical Network Management Systems totex expenditure - $m, real 2026

Network assets and operations	FY22	FY23	FY24	FY25	FY26	Total Current RCP	Total next RCP
CitiPower	4.4	9.6	5.7	11.3	7.6	**38.7**	**36.9**
Powercor	9.5	21.0	12.1	22.2	16.2	**80.9**	**85.2**
United Energy	17.7	17.0	11.9	18.5	21.0	**86.1**	**101.0**
					Total	**205.7**	**223.1**

Source: Powercor - IR015 - ICT, CER and cyber security - 20250428 – public, Table 4 and CP and UE equivalents

223. United Energy's totex forecast however represents a 17% from the current RCP (actual + expected) which was not adequately explained. We consequently asked UE for more information to support its forecast[63]– the following salient points are from UE's response:

- The increase is to support new NMS, 'offset by reduced expenditure in ADMS'
- The total cost of supporting new Network management systems is $6.7m and includes new categories including 'Scheduler', 'GE Utility Server' and 'Energy Workbench' (per mandated emergency backstop mechanism), and
- Additional expenditure is required to migrate its SCADA system to an Oracle product that will provide better compatibility with its upgraded ADMS.

224. In our view, this does not adequately explain why United Energy's totex has increased by 17% whereas CP/PAL's NMS forecast totex is only 2% higher than the aggregate for the current RCP and noting that CP/PAL have same emergency backstop driver. We infer that the majority of the uplift is attributed to the SCADA migration, but we also note from the business case that a recent project involved upgrading the SCADA to ADMS interface ('SCADA Modernisation' project) referred to in the business case.[64] Therefore both the justification for the proposed migration to Oracle and the reasonableness of the cost is unclear to us.

Finding

225. CPU has selected the appropriate strategy for refreshing its network management systems - according to its business case it will follow vendors recommendations up to a point but will refresh approximately every second vendor product release.'

226. Based on information provided in CitiPower and Power's responses to our request for further information we are satisfied that the NMS capex proposed for the next RCP is reasonable.

227. However, the response from United Energy to the same question does not adequately account for the uplift and in the absence of a robust variance analysis, we consider United Energy's expenditure forecast to be somewhat overstated.

62 Powercor - IR015 - ICT, CER and cyber security - 20250428 – public, page 7 and CP and UE equivalents

63 Information request IR013

64 UE BUS 7.05 – Network management systems – Jan2025 – Public, Table 17

3.2.10 Telephony

What CPU has proposed

228. As shown in Table 2.1, CPU has proposed total recurrent capex of $16.8 million on enhancing its telephony capability. This is designed to reduce risks from not meeting future customer and compliance requirements while improving customer service.

229. The existing telephony systems support the following areas:

- Contact centre, operating on the Cisco WxCCE cloud
- Corporate via desktop phones operating on a cloud platform from FY26, and
- Network Control & Operations (NC&O) using the British Telecom telephony platform (BT Command).

Our assessment

There are significant risks if the telephony platforms do not operate reliably and support customer expectations

230. CPU's position is that without efficient working telephony solutions, it would lose the ability to effectively communicate with its customers in response to faults, emergencies or to answer general enquiries. CPU would also lose the ability to effectively communicate across the business and network operations teams, resulting in deteriorated service. CPU state that service levels are particularly challenged during major outage events.

231. We are satisfied that a prudent operator would at least maintain its telephony platforms to maintain service levels.

CPU considered three options and selected the most expensive without sufficient justification

232. CPU's three options are summarised as follows:

1. Do not maintain currency – least possible maintenance to maintain minimum services
2. Maintain basic currency –implement modest upgrades to existing telephony capabilities to maintain currency, and
3. Modern currency – re-architect and transform the contact centre and corporate telephony solutions (including by leveraging AI functionality).

233. Option 1 is reasonably rejected by CPU given the identified risks described in the business case with such an approach. Option 2 at a proposed capex of $6.7 million for CP/PAL and $4.2 million for UE[65] is not favoured by CPU because '*it offers limited ability to meet changing customer preferences, improve reliability and adopt future IT solutions*.'[66]

234. The cost difference between Options 2 and 3 in the business cases is, in aggregate, $4.7 million:

- CPU and PAL: +$2.9 million[67]
- UE: +$1.8 million.[68]

235. Option 3 is favoured by CPU because it:[69]

- Anticipates that AI technology will enable it to provide innovative solutions across all three areas (i.e. Contact centre, Corporate, and NC&O)

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65 UE BUS 7.11 – Telephony – Jan2025 – Public, page 15

66 PAL BUS 7.11 – Telephony – Jan2025 – Public, pages 14

67 PAL BUS 7.11 – Telephony – Jan2025 – Public, Tables 9 and 11

68 UE BUS 7.11 – Telephony – Jan2025 – Public, Tables 9 and 11

69 PAL BUS 7.11 – Telephony – Jan2025 – Public, pages 16

- Facilitates easier and quicker access to customer information, and
- Enhances the overall customer experience.

236. Other claimed benefits include:

- Improves the minutes off supply measure
- Improves implementation of compliance-driven changes
- Enhances support of bushfire management
- Reduces safety risk, and
- Improves telephony system resilience and minimises the risk of a system outage.

237. Each of these benefits are incremental to the benefits provided by Option 2.

238. In our view, Option 3 is clearly an improvement initiative and therefore needs to be justified by a robust CBA demonstrating a positive net present value. CPU did not provide such an analysis with its submission documents. Further there was insufficient information in the business case or the provided cost model[70] to demonstrate the optimal timing of the work.

By the end of the current RCP, CPU will have upgraded its Contact Centre, Corporate telephony and NC&O telephony to cloud-based solutions[71]

239. CPU advises that its contact telephony solution was built in its corporate data centres and ran until recently with '*ageing infrastructure and limited vendor support*.' The contact centre telephony is now a public cloud-based solution, with minimal requirements on the VPN / UE data centre infrastructure. CPU further advises that its corporate telephony systems will become cloud-based in FY26. The NC&O BT telephony platform was also recently upgraded and is now a 'state of the art' telephony solution.

240. In summary, CPU currently has state-of-the art (or near-so) telephony solutions and we see no compelling case presented for further investment as proposed.

Cost estimates have been derived from SMEs

241. CPU advises that: [72]

> *'The values included in our Telephony cost model (UE MOD 7.18) are the forecasted values from our subject matter experts. Our subject matter experts make these forecasts based on experience undertaking similar projects and represents their best estimation of the costs required.*

242. The cost models that CPU provide show a reasonable breakdown of annual costs, but there is no supporting justification for the quantities/amounts.

Historical costs were not provided

243. We asked CPU to provide historical costs for its recurrent ICT programs as well as information to support material variances. In the response,[73] there was no reference to historical or forecast telephony costs. We are therefore unable to use historical costs as a basis for assessing the Option 2 costs.

We asked CPU to provide a CBA in support of Option 3

244. In response to our information request IR008, CPU provided *PAL MOD 7.20 – Telephony benefits.* It advised in its response that it valued benefits based upon reduced customer wait-time and call time when calling the Contact Centre due to improved analytics:

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70 PAL MOD 7.18 - Telephony cost - Jan2025

71 PAL BUS 7.11 – Telephony – Jan2025 – Public, pages 3 - 4

72 PAL IR008 - ICT and cybersecurity, response to question 15, page 12

73 PAL IR015 – ICT cyber and CER, Table 4

- To value a customer's time, it asked customers to put a quantified value on an hour's returned leisure time - the value included in the modelling is the median value, including responses from residential and small business customers
- The majority of the benefit will come during major outage escalation events via call deflection and call avoidance, and
- CPU assumes that the proposed integration between its contact centre systems and network control telephony will allow a faster analysis and response to large scale faults, leading to a reduction in the duration of customer outages.

245. CPU's model[74] leads it to conclude that the incremental PV cost of $2.1 million is offset by incremental benefits of $3.1m ($2026), giving an NPV of $1.0 million benefit to cost ratio (BCR) of 1.5.

246. We consider that valuing saved customer time as a benefit from an initiative such as this is a valid approach as long as the assumptions and methodology are robust. To claim reduced restoration time during MEDs from improved telephony because of improvements to call centre telephony (AI) may be plausible but, again, would need to be solidly evidenced.

247. Our review of the model provided raised a number of concerns with the modelling of Option 3's incremental benefits (i.e. with Option 2 as the counterfactual):

- No evidence is provided to support the claimed improvements compared to the counterfactual:
  - we assume that CPU has taken advice from some external party or parties, but regardless, no compelling supporting information is provided in either the response to the IR or in the models themselves
  - for example, reference sites which support the quantum of improvements from the enhancements would help substantiate the assumptions
- The benefits begin to accrue at the maximum value from FY28, however
  - the improvements in the Contact Centre telephony will not be implemented until FY28[75]
  - therefore, benefits from the reduction in customer call time and wait time logically would not commence until FY29
  - the benefits are likely to build up over time to the maximum as the other telephony systems are upgraded as proposed, whereas this is not how the benefits are modelled
- There are a large number of hard-coded numbers, again without referencing the source and which undermines confidence in the benefit analysis
- The VCR is from 2023 (network average of $42,863) which is likely to reduce by about 80% if the updated 2024 VCR rates are applied, reducing the NPV
- The entire study period is only 5 years (FY27-FY31) – it is reasonable to assume that benefits will continue to accrue beyond FY31 but so will costs, and
- There is no sensitivity analysis provided in the model.

248. Given the issues with the model, we cannot be confident that the claimed net benefit will be realised. We suspect that if CPU refines its model and provides information to support claimed improvements from the proposed investment in AI telephony, the incremental cost may be able to be justified.

Findings

249. The proposed expenditure is significantly over-stated.

74 Powercor - IR008 - PAL MOD 7.20 - Telephony benefits

75 PAL MOD 7.18 - Telephony cost - Jan2025, Option 3

250. There is a reasonable case for maintaining currency of the telephony systems (Option 2). Despite lack of historical information for comparison, the costing information provides gives us sufficient confidence that the Option 2 cost is likely to be reasonable.

251. Extra expenditure on enhancement (Option 3) is not justified due to a number of issues with the benefits analysis that CPU has provided, which in aggregate combine to cast material doubt on whether a positive NPV is realistic.

3.3 Assessment: Non-recurrent ICT projects

3.3.1 Overview of non-recurrent expenditure

252. Table 3.1 summarises a comparison between the three CPU businesses' recurrent expenditure from the current RCP to the next. The largest increase is Powercor's at +205%, although non-recurrent ICT expenditure is by its nature very volatile.

Table 3.4: Historical vs proposed recurrent ICT (totex) - $m, 2026 (excluding CER ICT, cybersecurity, and post-2025 NEM market reforms)

	2021-26	2026-31[76]	Difference
CitiPower	16	28	+75%
Powercor	21	64	205%
United Energy	23	63	174%
Total	**60**	**155**	**158%**

Source: EMCa onsite workshops – ICT – final, slide 8

3.3.2 ERP & Billing systems

What CPU has proposed

253. Table 3.5 shows that CPU propose spending a combined $162.2 million capex and $55.7 million opex in the next RCP on replacing five systems – three billing systems and two Enterprise Resource Planning (ERP) systems.

254. We observe that this does not include expenditure that is scheduled to be undertaken in the final year of current RCP but is not explicitly quantified in the business case.[77]

255. CPU propose replacing the existing ERP and Billing platforms with SAP products on the S/4HANA platform and with a common integration platform (webMethods). The common driver for replacing the current systems is technical obsolescence. The second driver is to extract economies from 'technical convergence' across the SAP platform.

[76] The forecast expenditure is derived from the onsite presentation prepared by CPU and differs somewhat with the forecast expenditure derived from the SCS capex model as shown in Table 2.1

[77] PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, pages 29-30

Table 3.5: CPU proposed ERP & Billing expenditure for the next RCP $m, 2026 (without labour escalation)

DNSP		FY27	FY28	FY29	FY30	FY31	Total
CP	Capex	4.7	9.6	6.4	6.1	2.5	29.3
	Recurrent opex	-0.4	-0.0	0.4	0.4	0.4	0.8
	Non-current Opex	1.2	3.7	2.1	2.2	0.8	10.0
PAL	Capex	11.0	22.5	14.9	14.3	5.8	68.5
	Recurrent opex	-0.9	-0.1	0.9	0.9	0.9	1.8
	Non-current Opex	2.8	8.2	4.7	4.7	1.7	22.1
UE	Capex	5.8	4.8	21.3	24.3	8.2	64.4
	Recurrent opex	-1.3	-0.1	1.4	1.4	1.4	2.7
	Non-current Opex	0.2	0.6	7.8	9.2	2.6	20.4
Total	**Capex**	**21.5**	**36.9**	**42.6**	**44.7**	**16.6**	**162.2**
	Opex	**0.7**	**12.1**	**17.2**	**18.6**	**7.7**	**55.7**
TOTEX		**23.2**	**49.0**	**59.2***	**62.6***	**23.9**	**218.0**

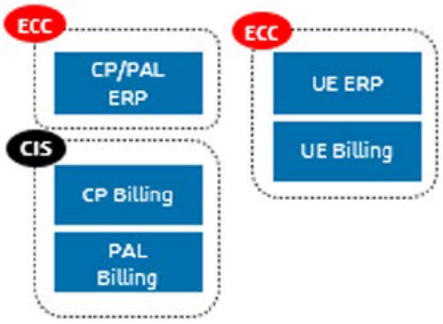
Source: PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, Table 8
** these figures do not correspond to the breakdown of costs but are per the source table*

Our assessment

CitiPower and Powercor have common IT systems; United Energy's IT systems are separate

256. Figure 3.11 illustrates the current configuration of ERP and billing systems between CPU.

Figure 3.11: High level representation of CPU ERP and Billing systems configurations – current state



Source: Extract from PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, Figure 7

The ERP systems are critical to CPU's operations

257. CPUs ERP systems are SAP products on the SAP ECC platform. CP/PALs ERP is separate to UE's ERP. ERPs in DNSPs provide crucial and wide-ranging functionality, integrating many modular capabilities. In CPU's case these include the capabilities shown in Table 3.6.

Table 3.6: CPU SAP ERP capabilities

Network asset management	Field service management	Purchasing & vendor management	Warehouse logistics
Billing & accounts payable	Plant and fleet management	Human resources	Finance and banking

Source: EMCa representation of information in Figure 1, PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential

258. Based on the information in CPU's business case and our experience, we are satisfied that CPU's two SAP ERPs are critical to providing services to its customers.

The Billing systems are critical to CPU's operations

259. Network billing systems are a core part of CPU's market systems. They '*manage tariff revenue, connections and metering, and is connected to a broader set of systems responsible for communicating with AEMO, energy retailers and other market participants.*'[78]

260. CP/PAL's billing system is the CIS OV product and CPU advises that it not only undertakes billing services (network billing standing data, service orders and customer information) but also supports meter data, meter read schedules and meter read routes, and AMI meter installation and configuration details.

261. UE's billing system is separate to CP/PAL and is an SAP product (SAP ISU) and is a part of UE's SAP ERP system. As noted in the business case, *'[it] is subject to the same vendor agreement as the ERP*.'[79]

262. As with the ERP systems, we are satisfied that the billing systems are critical to CPU's service provision.

SAP is closely integrated with other IT applications in CPU

263. The reliance on SAP and the complexity of integration within CPU is illustrated in Figure 3.12. This is relevant to the cost involved in changing platforms, modules and interfaces – particularly to non-SAS products, but also for SAP to SAP upgrades or enhancements. CPU reasonably advises that *'[a]n issue within SAP has the potential to cause disruption to some or all of these applications connected or integrated into it, so it is one of our most critical platforms.'*[80]

CPUs 2021-26 regulatory determination included expenditure for upgrading the ERP systems

264. As discussed below, a principal driver of the proposed investment in the ERP is the looming end of support for the legacy SAP ECC platform.

265. In its response to its regulatory proposal to the AER for the current RCP, the AER accepted that because of advice from SAP that it would not support the ECC platform from 2025, it was prudent for the ERPs to be upgraded. However, CPU advises that SAP subsequently extended support until 2030, so CPU deferred its upgrades, which we consider to be a prudent approach. CPU further advises that:

> *'While we deferred the upgrade of our ERP system we undertook alternative IT investments during the 2021-26 regulatory period that were not included in our 2021-26 regulatory determination, such as investments to meet new obligations from AEMO relating to NEM reform.'*[81]

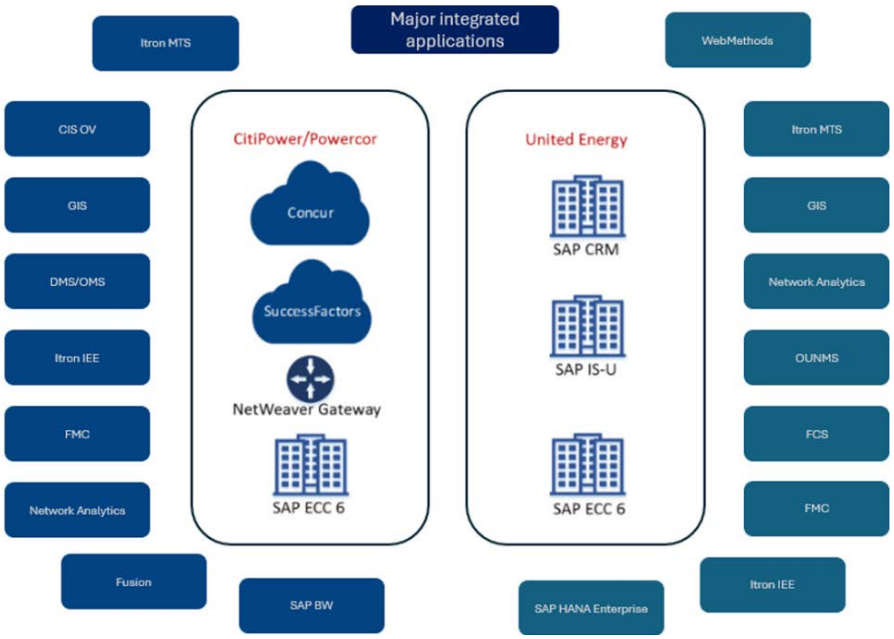
78 PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, page 2

79 PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, page 7

80 PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, page 5

81 PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, page 6

Figure 3.12: SAP integration with other ICT applications in CP&U



Source: PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, Figure 2

The identified need to replace the current ERPs and Billing systems is compelling

266. With respect to CPU's ERP and UE's billing systems (all on the SAP ECC platform), CPU advises that by the end of the next RCP:

- The ECC6 version will be beyond the standard lifecycle, and
- SAP will wind-down of support for the ECC6 version:
  - mainstream support ends on 31 December 2027
  - limited extended support will be available until 31 December 2030
  - all SAP support will cease after that date.

267. With respect to CP/PAL's CIS OV product, CPU advises that:

- Extended support is in place until the end of 2027
- The vendor no longer offers enhancements/new features, and
- It is challenging to secure personnel with the requisite knowledge of CIS OV.

268. CPU presents its analysis of the sharply escalating business risks from operating critical systems beyond vendor support in the business case.

269. We are satisfied that a prudent DNSP would investigate means of addressing the extant risk with its legacy systems beyond vendor support. CPU has built up considerable technology debt with ECC6 and CIS OV on critical systems and there is a compelling case for upgrades within the next RCP.

CPU considered four options and applied transparent evaluation criteria – we consider Option 3 to be the prudent choice

270. As described in Figure 3.13, CPU considered four options to address technical obsolescence of SAP ECC and CIS OV.

Figure 3.13: CPU options for ERP and Billing

Options considered to address ECC and CIS OV technical obsolescence

1. No upgrade, maintain current systems – under this option we continue to use our current ERP and billing system on legacy technology, with associated support of these systems ceasing during the period.

2. Base upgrade – upgrades CP/PAL's shared ERP system and UE's ERP system but these remain separate, with no convergence of processes or systems. This includes the replacement of CP/PALs shared billing system from CIS OV to SAP ISU, but it remains separate from UE's billing system.

3. Technical convergence upgrade – consolidates CP/PAL and UE billing functions into SAP and simplifies revenue management business processes. Also converges both ERP systems into the single SAP instance, focusing on IT platform unification without further business process convergence. This simplifies the IT architecture but enables UE to maintain separate business processes.

4. Full convergence upgrade – consolidates both ERP systems into a single SAP S/4HANA instance, including business process standardisation. All business processes across CP/PAL and UE are combined for maximum operational efficiencies over the long-term. This includes the convergence of billing systems into SAP.

Source: PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, pages 12, 13

271. CPU developed a set of weighted technical evaluation criteria (i.e. in addition to a CBA model) which it describes in detail in the business case.[82] We consider the evaluation criteria to be helpful in providing discrimination between the options.

272. A summary of the technical and economic evaluation by CPU of the four options is provided in Table 3.7.

Table 3.7: Summary of quantitative measures of options - $m, real 2026 (without labour escalation)

Option	Capex	Opex	Totex	NPV	Score	Rank
1. No upgrade	39.1	0.0	39.1	0.0	0.0	4
2. Base upgrade	136.9	44.5	181.4	445.7	1.86	3
3. Technical convergence	162.2	55.7	218.0	525.3	3.81	1
4. Business transformation (full convergence)	222.2	80.2	302.3	419.4	2.81	2

Source: EMCa consolidation of PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, Table 11, Figure 15

273. CPU rejected Option 1 because it considered it to be a non-credible solution for addressing the identified need. We view this as a reasonable conclusion.

274. Options 2-4 will address critical business risks by upgrading to supported versions. The key advantages of Option 3 are identified as:[83]

- Consolidating CP/PAL and UE core systems *reduces technical complexity, lowers total cost of ownership and provides greater flexibility without requiring full business process standardisation*
  - only a single instance is required, reducing licensing and maintenance expenses, simplifying compliance efforts and streamlining system management
  - enables efficient regulatory- and market-driven updates

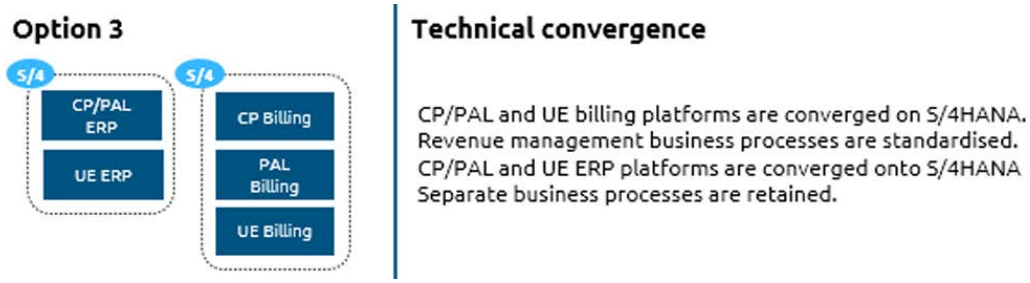
82 PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, pages 11, 12

83 PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, pages 27,28

  - provides a scalable foundation for future enhancements
- Option 3 has the highest NPV (based on CPU's analysis and which we comment on below), avoiding ~$5m p/a compared to current duplicate deployment of CP/PAL and UE billing system and market gateway changes[84]
- Option 2 (Base upgrade) fails to address duplication of development effort and operational silos that contribute to inefficiencies and higher ongoing costs leading to an expected higher total cost of ownership, and
- Option 4 offers the most extensive process standardisation and operational benefits, but at a substantial upfront cost and with higher deliverability risks than Option 3 because of the change management and reengineering effort and disruption.

275. A simplistic representation of the preferred Option 3 is shown in Figure 3.14, which can be compared against the current state in Figure 3.11.

Figure 3.14: Option 3 configuration



Source: EMCa extract from PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, Figure 7

276. Although at $218.0 million (without labour escalation) the proposed investment is a considerable sum, we note that:

- Five systems are being replaced that will, according to the SAP timeline, be technically obsolete by 2030
- Replacement of unsupported critical systems is consistent with good industry practice, and
- The incremental cost of convergence (Option 3) versus 'replacement' (Option 2) is a capital cost of $25.3 million and $11.2 million opex across the three DNSPs. Arguably, this $36.5 million totex is what needs to be offset by the incremental NPV between the two options to be justified; and according to CPU's analysis, it is - we comment on this below.

Being 'captured' by SAP is recognised by CPU but it has selected to move to S/4HANA regardless

277. At our onsite meeting with CPU, the CPU representatives spoke several times about being 'captured' by SAP. We explored this further through an information request, asking CPU to explain its considerations in choosing to remain with SAP and consideration given to the option of a transition to a non-SAP (or Oracle) suite of products, such as via a 'best of breed' replacement strategy for SAP ECC6.

278. Figure 3.15 summarises its position:

- Past assessments have determined that migrating from SAP to a non-SAP solution would have the highest change impact and highest technical implementation risk, and
- Remaining on an SAP product removes additional complexity and risk for its ERP upgrades and United Energy's billing upgrade.

279. We are satisfied with the response.

84 EMCa onsite workshops - ICT – final, slide 23

Figure 3.15: ERP option assessment – Non-SAP option

Source: EMCa extract from Powercor - IR015 - Q12 - cyber security gap analysis – confidential, page 15

Deliverability appears to be challenging but should be able to be completed by FY31 given that preparation is due to commence in mid-2025

280. One of the detracting aspects of Option 4 is the high risk due to '*dependencies on other non-converged downstream applications and high, extended period of business disruption during implementation*.'[85] This makes sense however, Option 3 is still a complex undertaking – for example, there is evidence from other Australian utilities industry of significant problems with billing systems.[86] To also undertake the ERP upgrades adds complexity but, as CPU observes, it is comparatively less complex than the billing upgrade because the CP/PAL and UE upgrades are within the SAP platform[87] and there is now a lot of experience in the IT services industry with ECC6 to S/4HANA upgrades.

281. We therefore sought assurance from CPU that Option 3 is reasonably likely to be efficiently delivered by FY30.

282. In the business case, CPU presents simple Gantt charts of its Option 3 implementation plan which shows a preparation phase of considerable duration (mid-2025 to mid-2027) and with the CP/PAL billing change preceding the UE billing upgrade, with the UE and CP/PAL ERP works following. This sequencing is logical, but there is considerable overlap between the 'projects'.[88] CPU argues that:[89]

> *'Since this option does not seek to materially reengineer business processes outside of billing revenue functions, the other processes and workflows should not be significantly disrupted (finance, procurement, asset management etc.)'*

283. In response to an information request about the cost estimate, which we discuss below, CPU provided a comprehensive Gantt chart with a breakdown of key (but largely generic) tasks over every week from July 2027 to December 2030.[90] This does add confidence, given that we observe provisions, albeit apparently modest, for 'service transition', change management, hypercare, and post-go live support for each system.

284. In response to a separate question, CPU also stated that:[91]

> *'Given the size and duration of the program, we will establish a new IT business unit to focus solely on the ERP and billing system upgrade. The delivery resources will largely be fixed term contractors and vendor system integrators who have strong experience in delivering S/4HANA upgrades.'*

285. Overall, we find CPU's responses to be reasonable. If the systems implementation and convergence activities do run late, we expect they will be able to be completed within the next RCP (i.e. by end of FY31).

85 PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, Figure 15

86 For example, Synergy in Western Australia, Greater Western Water in Victoria

87 PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, page 28

88 PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, page 28-29 and Figures 16 and 17

89 PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, page 28

90 Powercor - IR008 - ERP & billing system replacement underlying calculations

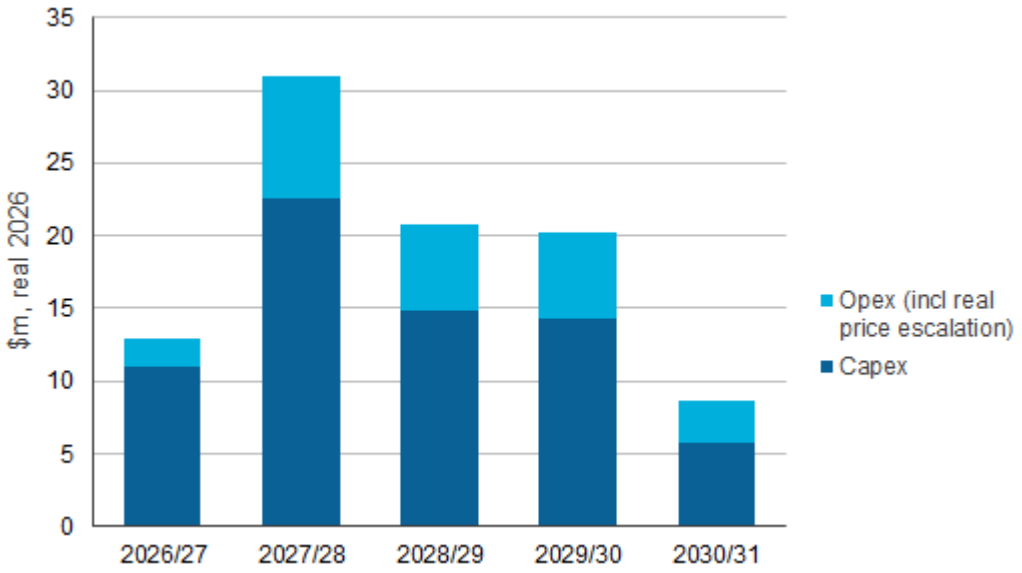
91 Powercor – IR015 – ICT, CER and Cyber security - 20250428 – public, page 4

286. We comment on overall program deliverability in section 3.4, taking into account CPU's ERP and Billing system delivery plans.

CPU has provided a reasonable cost analysis for the next RCP, however costs incurred in the current RCP are not explicit and have not been included in the CBA model

287. Figure 3.16 shows the Powercor expenditure profile for CPU's preferred Option 3. CitiPower's expenditure profile is similar to Powercor's, peaking in FY27 8 at $10.1 million. UE's expenditure profile has peak expenditure in FY29 ($23.4 million) and FY30 ($26.9 million). In all three cases, work tapers off to FY31, which is consistent with the implementation schedule.

Figure 3.16: PAL - ERP & Billing program expenditure profile – Option 3 - next RCP - $m, real 2026



Source: PAL MOD 7.01 - ERP and billing system cost - Jan2025 - Confidential

288. We asked CPU for more detail to support its costs than in the cost model provided with its submission[92] and we refer to CPU's response.[93] The focus of the response is a detailed breakdown of the labour requirements between CP/PAL and UE for vendor support and internal resources, matching the breakdown in the detailed Gantt chart/schedule also provided in the Excel spreadsheet. This detailed bottom-up breakdown provides confidence that the estimate is likely to be reasonable, noting that:

- Detailed planning and costing have yet to commence, so the estimates are preliminary but suitable for a regulatory submission:
  - this is illustrated by the use of only two categories of resource: 'standard' and 'specialist' day rates which are applied to 86 tasks; clearly this is an approximation, but is reasonable for estimation purposes at this stage of the project lifecycle
  - reliance on SAP input and presumably CPU's preferred SI(s) would have been involved in deriving these preliminary estimates, and
- Labour costs are heavily weighted to vendor support (i.e. compared to internal resources), which is understandable for a program of this size and consistent with CPU's delivery plan.

289. Whilst the business case explicitly identifies preparation for the Billing and ERP upgrades and consolidation over the two-year period from July 2025 to June 2027, the expenditure in 2025/26 is not explicit in the business case nor in the CBA model. This does not affect the comparative analysis between Options 2, 3 and 4, however it leads to an understatement of

92 PAL MOD 7.01 - ERP and billing system cost - Jan2025 - Confidential

93 Powercor - IR008 - ERP & billing system replacement underlying calculations

the total cost of the program of work. Our focus is however, on the proposed expenditure in the next RCP.

290. Overall, we consider CPU's capex estimate is reasonable, based on the evidence that it has provided for the basis on which it has developed that estimate.

Information provided for CP and PAL shows that proposed opex step changes are net of base year opex, but do not take account of offsetting business opex efficiencies

291. We refer to Table 3.8 for the opex step change proposed for PAL

Table 3.8: PAL - proposed opex step change for Option 3 - $m 2026 (with labour escalation)

Project	Step change category	Jun 2027	Jun 2028	Jun 2029	Jun 2030	Jun 2031	Total
Non-recurrent	Cloud services - capex / opex trade off	2.90	8.55	4.97	5.05	1.84	**23.32**
Recurrent	ICT modernisation and new capability - major external factor and capex/opex trade off	- 0.92	-0.08	0.96	0.97	0.98	**1.90**
	Total step-change	**1.98**	**8.47**	**5.93**	**6.02**	**2.82**	**25.22**

Source: PAL MOD 9.03 - Opex step changes - Jan2025 - Public

292. Information provided by CP and PAL shows that SAP licenses (future) have been offset by a base year adjustment (-$3.3million, $2024). CPU provided more detail regarding the incremental and base year assumptions in a further response to an information request.[94]

293. In its IR response, CitiPower and Powercor provided the table which we reproduce as Figure 3.17. The table shows the basis for the proposed step change, with deductions of existing licence payment streams, which are from the base year. The breakdown aligns directionally to the expenditure in Table 3.8 which shows that the majority of the opex is non-recurrent 'propex' or project implementation opex. For the recurrent component, the information in Figure 3.17 reasonably demonstrates that the proposed step change is net of base year expenditure.

[94] Powercor – IR008 – ICT and cybersecurity – 2250318 – public, question 5

294. We note from this that:

- SAP licenses base and future are materially different going forward with the former building quickly to a recurrent [redacted] pa which is significantly higher than the [redacted] base year – this is attributed to the future SAP licences covering the ERP, billing and gateway functions
- The base year 'credit' arises from ceasing the base billing systems CIS OV and ECC licences and the base year market gateway licences, and
- The base year costs should be known, but we note the approximate nature of the FY28 onward SAP future licence cost of [redacted].

295. While we are satisfied that CPU has taken account of its base year opex in developing its step change proposal, we consider there is potential for an offset to the incurred additional opex from the efficiencies assessed by CPU to be generated from its preferred option.

Opex efficiency offsets apply differently to recurrent and non-recurrent opex

296. CitiPower's, Powercor, and United Energy's CBAs indicate that they expect opex productivity savings approximately equal to the increased ongoing recurrent opex.

297. In Table 3.9 we show the opex step changes for each business disaggregated between recurrent (ongoing) and non-recurrent (project implementation opex).

Table 3.9: Recurrent and non-recurrent components of ICT opex step changes for ERP and billing systems, CPU - $m, FY2026

	CP	PAL	UE
Recurrent opex	0.82	23.32	2.72
Non-recurrent opex	9.99	1.90	20.44
Total proposed opex step change	**10.81**	**25.22**	**23.16**

Source: EMCa, from PAL MOD 9.03, CP MOD 8.03, UE MOD 9.03

298. We observe that the CPU CBAs also include forecast substantial capex savings, for example in the CP/PAL CBA model, these savings are of the order of $4.0m per year from FY32. The future capital expenditure avoided is a hard-coded amount in the model, but we infer that it relates to avoided future ICT capex from having consolidated the systems to the SAP S/4Hana platform.[95]

CPU has provided a reasonable cost-benefit analysis

299. Table 3.10 reproduces a summary of Option 3 versus Option 1 risk monetisation, which shows the annual benefit from Option 3 as a risk reduction of $61.9 million p.a. and other annual benefits of $6.3 million p.a. There is no difference between the annual risk reduction afforded by Options 3 and 4 in CPU's analysis. Option 4's 'other benefits' are slightly higher than Option 3's because of a contribution from benefit 'O2'.

[95] PAL BUS 7.01 - ERP & billing system upgrade - Jan2025 – Confidential, page 24, noting that Option 4 is credited with a $5.5m p.a. avoided capex benefit from FY32 onwards

Table 3.10: CPU's risk monetisation analysis - $m, 2026

Risk	Description	Option 0 - no upgrade	Option 3 - technical convergence*
Reliability	Supply restoration time impacted by system failure (BR5)	29.3	1.0
Compliance	Delays in publishing key data to the market due to system failure (BC1)	3.0	0.3
IT outage	SAP system failure impacting productivity and requiring IT rectification (IT01-a)	23.5	0.3
IT outage	Billing system failure impacting productivity and requiring IT rectification (IT01-b)	8.0	0.2
	Annual risk level	63.7	1.8
	Annual risk reduction (benefit)		**61.9**
Other benefits			
	Improved consistency of billing function (O1)		1.3
	Improved productivity and efficiencies for Enterprise Asset Management (O2)		0.0
	Avoided future capex (O3)		5.0
	Annual other benefits		**6.3**
Total annual benefits Option 3			**68.2**

Source: EMCa onsite workshops - ICT – final, slide 27
** based on likely case scenario*

300. We focus on the reasonableness of the two largest contributors of NPV – BR5 and IT01-a. CPU's provided risk analysis model[96] provides transparency of the input values and the assumptions/sources behind them for each of the benefits. Our observations are:

- Supply restoration time from system failure (BR5) – the key assumptions are that upgrading and converging will:
  - reduce the frequency of software or hardware from once per year to one in ten years[97]
  - reduce the likely system down-time by two-thirds (33.6 hours to 11.8 hrs),[98] consequently reducing the number of customers impacted by 65%, and
- System failure risk (IT01-a) – the key assumptions are that upgrading and converging will:
  - reduce the likelihood of a SAP failure as for BR5, and
  - reduce the duration the system is offline from 120 hrs to 11.8 hrs[99] – the Option 1 assumption here is significantly higher than what appears to be the same scenario that BR5 is concerned with, but without explanation from CPU; we reduced the outage duration for Option 1 to 33.6 hrs and this reduced the annual IT01-a risk from $19.6 million to $5.8 million, in turn reducing the NPV of the preferred Option 3 to $263 million from $525 million; this is still strongly positive.

96 PAL MOD 7.02 - ERP and billing system risk - Jan2025 - Confidential

97 Based on SAP data

98 *If the SAP system becomes unsupported, the likely system downtime is projected to worsen. Therefore, it is estimated that the downtime will double in an unsupported scenario*

99 *Without vendor support, SAP would not be required to assist. Based on past experience, a system failure without vendor support is likely to last 3 weeks or 15 working days for employees*

301. Whilst not shown in Table 3.10, improvements in the key metrics described above are also achieved from Option 2, but to a lesser extent, as is to be expected. The sources are simply quoted as '*based on incident data*', which we infer is information secured from SAP.

302. The 'likely case' assumptions in CPU's risk analysis appear to be reasonable, with the exception of the matter raised for risk IT01-a. CPU would logically need to rely upon advice from SAP and we have not sought to verify the advice, but we do note that CPU included worst-case, likely case, and best-case scenarios for BR5.[100] The biggest difference between the best and likely scenarios is the number of customers impacted; such a small number of customers are assumed to be impacted under the best case scenario, that we assume the incremental risk reduction would be much smaller.

303. Overall, we consider that:

- The CBA assumptions are, with one possible exception, reasonably derived and applied
- CPU's cost-benefit analysis is sufficiently robust to underpin the positive NPV for Options 2 and 3, and
- Option 3 is likely to have a positive NPV margin over Option 4 under various credible scenarios.
- Base year expenditure has been accounted for by offsetting proposed recurrent opex (licencing fees) with a reduction in Base year licensing fees.

The opex step change should be offset by the realisable efficiency and capex benefits

304. As denoted in Table 3.10, CPU has identified two realisable benefit streams from implementing Option 3, one of which is relevant to the proposed opex step-change:

- Improved consistency of billing function, freeing up 20 hours per year per staff member, in aggregate $1.3 million p.a, which we assume ramps up from FY29 into FY30
- In their CBAs, CPU businesses propose significant capex savings arising from the proposed investment.[101]

305. We consider this to be a conservative estimate based on the narrative in the business case. Whilst this benefit has been taken into account in the NPV analysis, it does not appear to have been accounted for in the proposed step change.

Findings

306. We consider that CPU has reached a point in the product lifecycles for its billing and ERP systems such that upgrades due to technical obsolescence will be necessary by the end of the next RCP.

307. CPU's proposed capital cost is reasonably derived considering the stage at which the project is developed (with detailed planning and preparation scheduled to commence in Mid-2025).

308. CPU's estimated opex costs are reasonably derived, however CPU has not recognised an offset for the identified billing system efficiency dividend in its proposed step-change.

309. The NPV analysis includes transparent presentation of assumptions underpinning its derived benefits. The benefit streams are logical and whilst we have several concerns, overall, we are satisfied that the proposed Option 3 NPV will be strongly positive and higher than the other credible options.

310. We note that CPU has not identified the sunk cost to be incurred in the final year of the current RCP on planning/preparation for the project. However, its omission from the comparative CBA analysis would likely not materially affect the outcome in favour of the preferred Option 3 – technical convergence. Moreover, since this expenditure is shown as commencing from July 2025, it was not included in CPU's base year (for which it forecast as the 2024-25 year).

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100 No scenario analysis is provided for risk IT01-a

101 For example, in PAL MOD 7.02, CPU shows annual capex benefits of $4.0m for PAL and CP combined

311. Overall, we consider that the capital cost is reasonable.

312. We consider that however the opex step change is overstated.

3.3.3 Market Interface Technology Enhancements

What CPU proposes

Project objectives

313. Each DNSP in the NEM is being required to undertake a series of initiatives aimed at enhancing their market interface. Market interfaces include interfaces to metering data, NMI information, market settlement and transfers and various B2B arrangements.

314. The reform has three core components including identity and access management (IDAM), industry data exchange (IDX), and portal consolidation (PC). The enhancements represent a new regulatory obligation associated with CPU's role in the NEM.

315. The enhanced interfaces will help to facilitate increased and more secure customer interactions that will be required to enable flexible demand services and increased DER.

Proposed capex

316. CPU's Business Cases present a total capex estimate of $70.4m, in real $2026 as shown in Table 3.11. CPU is forecasting all costs to be incurred in the next RCP and proposes a step change for ongoing opex.

Table 3.11: CPU's estimate of total cost for Market Interface Technology Enhancement (MITE) project - $m, real 2026 (without labour escalation).

DNSP		FY27	FY28	FY29	FY30	FY31	TOTAL
CitiPower	**Capex**	0.1	6.6	1.9	1.1	0.0	**9.7**
	Opex	0.0	0.0	0.3	0.3	0.3	**0.9**
Sub-total		**0.1**	**6.6**	**2.2**	**1.4**	**0.3**	**10.6**
Powercor	Capex	0.3	15.3	4.4	2.5	0.0	**22.6**
	Opex	0.0	0.0	0.6	0.7	0.7	**2.0**
Sub-total		**0.3**	**15.3**	**5.0**	**3.2**	**0.7**	**24.6**
United Energy	Capex	0.5	21.9	6.4	3.6	0.0	**32.3**
	Opex	0.0	0.0	0.9	1.0	1.0	**2.9**
Sub-total		**0.5**	**21.9**	**7.3**	**4.6**	**1.0**	**35.2**
Totals	**Capex**	**0.5**	**43.8**	**12.7**	**7.2**	**0.0**	**64.2**
	Opex	**0.0**	**0.0**	**1.8**	**2.0**	**2.0**	**5.8**
	Totex	**0.9**	**43.8**	**14.5**	**9.2**	**2.0**	**70.4**

Source: CP BUS 6.03 – AEMO NEM reforms – Jan2025 – Public; PAL BUS 7.03 – AEMO NEM reforms – Jan2025 – Public; UE BUS 7.03 – AEMO NEM reforms – Jan2025 – Public_1

Progress update

317. At our onsite meeting CPU presented an indicative project implementation timeline as shown in Figure 3.18.

Figure 3.18: CPU's assumed MITE project implementation timeline

Source: CPU onsite workshop – ICT – Final, slide 42

318. CPU further advised that it had recently been informed that AEMO's MITE procedural changes that had been due in March 2025 would now be provided in November/December 2025 and that a revised timetable for IDAM will be provided in June 2025. While these delays can now be essentially taken as given, CPU confirmed that the capex that it has proposed for the next regulatory period is based on the Figure 3.18 timetable.

Assessment

This project is required to comply with market reform requirements

319. Whilst CPU considered three options, compliance through process and technical change is the only option that will comply with AEMO's requirements. The project external dependency on CPU (and other DNSPs') receives specifications for the necessary changes from AEMO.

CPU's cost estimates for CitiPower and Powercor are reasonable, but its estimate for United Energy benchmarks poorly

320. CPU states that:

> *Our current cost and impact assessments are based on the best available information. These may evolve once the remaining regulatory guidance documents (including updated AEMO procedures) have been finalised and published.*[102]

321. We have separately compared CP, PAL and UE's cost estimates with cost estimates for the equivalent projects that are proposed by the other two Victorian DNSPs in their regulatory submissions. For comparative purposes, we have normalised the proposed costs by customer numbers, as we show in Table 3.12.

322. When normalised on this basis, CP and PAL's costs are slightly below the average across the five Victorian DNSPs, and similar to AusNet's. However, UE's capex is considerably higher than the average and compares poorly with the two other DNSPs that are of broadly similar size (i.e. PAL and ASD).

323. Such benchmarking is not definitive; however we consider it to be a strong indicator that UE's costs are overstated and we do not see information in UE's submission that would explain or justify this.

324. Regardless, all five Victorian businesses will need to revise their costs when AEMO's requirements are definitive. We would expect CPU to submit refreshed cost estimates in their respective Revised Proposals.

[102] PAL BUS 7.03 – AEMO NEM reforms – Jan2025 – Public, page 7

Table 3.12: Victorian DNSPs proposed capex for next regulatory period for MITE projects - $m, real 2026

Project	CP	PAL	UE	JEN	ASD	TOTAL / AVERAGE
Market interface technology enhancements (MITE)	10.3	24.0	35.8	17.5	20.2	107.9
Customer number (000)	351	937	718	384	823	3,213
$/customer	**29.3**	**25.6**	**49.9**	**45.7**	**24.6**	**33.6**

Source: EMCa table

Findings

325. We consider that CitiPower and Powercor's proposed capex for MITE is reasonable but that United Energy's proposed capex is overstated.

3.3.4 Flexible Trading Arrangements (FTA)

What CPU proposes

Project objective[103]

326. In August 2024, the AEMC released its final determination on unlocking CER benefits through FTA. The objective of the rule change is to better enable energy service providers to offer products and services to households, businesses, and the public sector, to unlock the value of CER. The AEMC also proposes that the new in-built metering arrangements will make it easier for market participants to deploy public EV chargers and smart streetlights. The rule change enables three key arrangements across the following categories:

- Large business customers (type 8A meters)
- Small to medium customers (type 8B meters), and
- Unmetered supply (type 9 meters).

327. The AEMC cites that the rule change could deliver up to $100m of benefits over 20 years.

Background and project status

328. Figure 3.19 shows CPU's proposed project timeline, with completion (go-live) for the type 8 meters by November 2026. The first of the new provisions is to take effect from 31 May 2026, and the second and third from 1 November 2026. CPU has therefore commenced work on this project.

Figure 3.19: CPU FTA implementation timeline

Source: CPU onsite workshop – ICT – Final, slide 42

Proposed expenditure

329. CPU's respective business cases propose capex in the next RCP only in FY27 as shown in Table 3.13.

103 CPU onsite workshop – ICT – Final, slide 40

330. In $2026 terms, CPU proposes the forecast capex and opex shown in Table 3.13.

Table 3.13: CPU's proposed for a Market Reform Flexible Trading Arrangements ICT project - $m, real 2026

DNSP	FY27	FY28	FY29	FY30	FY31	TOTAL
CitiPower	2.3	-	-	-	-	**2.3**
Powercor	5.4	-	-	-	-	**5.4**
United Energy	9.6	-	-	-	-	**9.6**
TOTAL	**17.3**	**-**	**-**	**-**	**-**	**17.3**

Source: CP BUS 6.03 – AEMO NEM reforms – Jan2025 – Public; PAL BUS 7.03 – AEMO NEM reforms – Jan2025 – Public, UE BUS 7.03 – AEMO NEM reforms – Jan2025 – Public_1

Assessment

This project is required and CPU's selected option is reasonable

331. As with the Market Reform MITE project, CPU is required to undertake this project.

332. While CPU in the respective business cases refers to consideration of not complying with the change this is not a realistic option. CPU also dismisses an option of undertaking tactical workarounds on the basis that this too would result in non-compliance.

333. We consider that the option of proactively undertaking the required work (CPU's option 3) is the only realistic option, noting the project external dependency on CPU (and other DNSPs') receiving specifications for the necessary changes from AEMO.

CPU's basis for estimating the cost of this project is reasonable though uncertain pending specification advice

334. While the FTA rule change has been finalised, the AEMO procedures have yet to be finalised and CPU advises that guidelines are still being updated, which will bring further clarity to the rule change requirements once completed. The cost estimates shown in Table 3.13 must therefore be considered provisional. CPU has indicated that it will update its completion (FY27) costs in its revised proposals if required.

335. FTA expenditure in the next RCP is intended to provide for testing and support activities being conducted in 2026–31. CPU intends submitting a pass-through application for FTA costs incurred during the current RCP.[104] Given the project is underway, with the known scope we consider CPU has a reasonable basis for estimating the costs to complete the FTA projects.

Allocation of this cost to SCS is questionable

336. As we introduced for this project, its objective is to address the need to be able to manage data from new meter types and new metering arrangements. This does not appear to fall within the realm of SCS but rather has the appearance of being largely related to Jemena's provision of a metering ACS. We also observe that one of CPU's peers, AusNet, has classified its project of this type as ACS, and has not sought to recover it through its SCS regulatory proposal and that the business cases provided by CitiPower, Powercor and United Energy for their projects of this type indicate significant functionality relating to meter data management, and only part in the 'network' domain.[105]

337. Given that we understand that in any case CP, PAL and UE intend to revert to AER with updated information in their Revised Regulatory Proposals, we consider that there is a need

[104] PAL BUS 7.03 – AEMO NEM reforms – Jan2025 – Public, page 2

[105] For example, in the UE business case (UE BUS 7.06) the functionality is described under the heading 'AEMO retail and metering procedures' (page 24) and the applications listed in Table 2 of this document are largely those that support these functions

to either reconsider or, otherwise justify, their proposed inclusion of this expenditure their SCS proposals

Our finding

338. We consider that CPU businesses are required to undertake this project, that they have selected an appropriate option and that their proposed aggregate capex of $17.4m is a reasonable estimate at this stage. CPU should be able to refine these estimates once further specification information is available from AEMO.

339. However, from the information that CPU has provided, we consider that the majority of the proposed expenditure for this project is better suited to ACS and that regulatory consideration could be given to including only a portion of this in its SCS allowance.

3.4 Deliverability assessment

340. As mentioned in section 2.2.1, CPU did not provide an ICT strategy nor a stand-alone document that shows how it assured itself that it will have access to sufficient resources to implement the proposed portfolio of ICT work. We note that in one of its responses to an information request, CPU advised that:[106]

- Its project delivery governance models are mature and robust and remain similar to the previous RCP, but without evidence to support the claim, and
- It challenged the deliverability of its program, but without presenting any supporting evidence of how it did so and whether or not this resulted in a change to the portfolio – from the information presented, it would appear this was not the case.

341. We do note, however, a case study presented in Powercor's Governance, forecasting and deliverability overview (RIN 30), which we reproduce in Figure 3.20.

Figure 3.20: ICT Resource Planning Case Study

In developing our ICT program of works for the 2026–31 regulatory period we have:

- aligned our investments with externally driven timeframes, including compliance dates (e.g. AEMO NEM reforms) and vendor support roadmaps (e.g. ERP and billing system replacement)
- commenced preparatory activities in the current regulatory period (e.g. ERP and billing system replacement and our flexible trading arrangements) to avoid excessive peaks in workload during the 2026–31 regulatory period
- sequenced our other non-recurrent and recurrent programs around the time-bound projects to efficiently manage interdependencies and levels of complexity.

Our proposed ICT project delivery timeline is set out in figure 5.1. We have separated our ERP and billing system replacement project into three distinct workstreams to demonstrate the timing of each component.

Source: PAL RIN 30

342. Reference to figure 5.1 is to a complementary Gannt chart in the same document, however this is at such a high level that it diminishes confidence in the deliverability program rather than build it because:

- It shows no interdependencies or dependencies
- No link to resources
- No apparent provision of hypercare for each program, and
- Two programs scheduled to run to the end of the next RCP (i.e. June 2031).

106 PAL – IR008 – ICT and cyber, pages 1,2

343. These are the only references in the document and provide inadequate evidence that the proposed scope of work is likely to be delivered on schedule and efficiently. This is particularly important for Powercor given Powercor proposes a $109 million (52%) uplift in its ICT expenditure from the current RCP, which implies significant delivery risk given the shortages of skilled resources we see reported in the industry.

344. We asked for greater detail from CPU in two IRs. With respect to evidence of program delivery performance, CPU advised that from 2022-2024 it averaged 85% on time, on budget delivery for '*a broader set of projects'*.[107] Information about the balance was not provided in the response. As part of its response to our second request, CPU provided a summary of its labour analysis, which we summarise as follows:[108]

- The average annual increase in annual labour hours is equivalent to around 60–70 FTE
- The majority of the uplift required is due the ERP and billing system replacement project, and
- It has taken steps to address the requirements of the ERP and Billing system project, including by using largely '*fixed term contractors and vendor system integrators who have strong experience in delivering S/4HANA upgrades.'*

345. This analysis is helpful in understanding steps CPU has or will undertake to help deliver the program. However, we remain concerned by the relative volume and complexity of work and the opaqueness to us of the provisions in the programs for project interdependencies, hypercare, and contingency time (or schedule 'float' - to cope with such issues as labour shortages, vendor non-performance, and inevitable scope changes)

346. In summary, we consider that there is material risk that CPU will not deliver its proposed ICT program of work on schedule, to scope, and efficiently.

3.5 Our findings and implications

3.5.1 Summary of our findings

Recurrent ICT projects

347. We assessed nine recurrent projects noting that for each of CitiPower and Powercor a significant uplift in recurrent expenditure is proposed over the next RCP.

348. We found that the proposed expenditure for three of the projects is reasonable (Customer Enablement, Infrastructure Refresh, and Market Systems). However, for the other six projects we found insufficient justification for the level of expenditure. The key issues with the information provided by CPU are:

- Inadequate information about the historical expenditure
- Inadequate justification of variances between historical and proposed expenditure, and
- Inadequate benefits analysis (relevant to Telephony only).

Non-recurrent ICT projects

349. We reviewed three non-recurrent projects: ERP & Billing systems, Flexible Trading Arrangements (FTA) , and Market Interface Technology Enhancements (MITE), the latter two of which are compliance-driven projects.

350. We are satisfied that CPU has selected the appropriate option to replace and converge the ERP & Billing systems across CPU. We consider that the proposed capex for the next RCP is reasonable. The opex costs are reasonably derived, however no offset for the identified

107 CPU response per Powercor – IR015 – ICT, CER and cyber security – 20250428, Table 8, page 12

108 CPU response per Powercor – IR015 – ICT, CER and cyber security – 20250428, Table 2, page 4

billing system efficiency dividend appears to have been recognised in the proposed step-change.

351. Based on benchmarking we consider that CPU's proposed capex allowance for MITE implementation is overstated, however we note that the specification and therefore the obligation is not final and that it is CPU's intention to revisit the cost estimate when advised.

352. We consider that CPU's proposed capex and ongoing opex allowances for the FTA project is in each case reasonable.

Deliverability

353. We consider that there is material risk that CPU will not deliver its proposed ICT program of work on schedule, to scope, and efficiently. Our proposed adjustment, described in the following section mitigate this concern at a portfolio level.

3.5.2 Implications for proposed capex and opex step change allowances

ICT Capex adjustments

For ICT recurrent capex, a reasonable alternative forecast is 12% less than CP/PAL has proposed and 9% less than United Energy has proposed

354. In Table 3.14, Table 3.15, and Table 3.16, we show the proposed and adjusted ICT recurrent capex for CitiPower, Powercor, and United Energy.

Table 3.14: CitiPower recurrent ICT capex adjustment - $m, real 2026

ICT - recurrent	Adjustment	FY27	FY28	FY29	FY30	FY31	Total
Proposed forecast		19.5	13.4	16.1	13.5	13.4	76.0
Alternative forecast		17.7	11.3	14.2	11.6	11.8	66.7
Adjustment	**-12%**	**-1.8**	**-2.1**	**-1.8**	**-1.9**	**-1.6**	**-9.3**

Source: EMCa analysis

Table 3.15: Powercor recurrent ICT capex adjustment - $m, real 2026

ICT - recurrent	Adjustment	FY27	FY28	FY29	FY30	FY31	Total
Proposal forecast		**45.4**	**31.2**	**37.3**	**31.3**	**31.1**	**176.3**
Alternative forecast		41.1	26.3	33.0	26.7	27.3	154.4
Adjustment	**-12%**	**-4.3**	**-4.9**	**-4.3**	**-4.6**	**-3.8**	**-21.9**

Source: EMCa analysis

Table 3.16: United Energy recurrent ICT capex adjustment - $m, real 2026

ICT	Adjustment	FY27	FY28	FY29	FY30	FY31	TOTAL
Proposed forecast		44.6	42.2	28.8	26.6	28.6	170.8
Alternative forecast		41.5	38.7	25.7	23.7	26.0	155.6
Adjustment	**-9%**	**-3.2**	**-3.5**	**-3.0**	**-2.9**	**-2.6**	**-15.2**

Source: EMCa analysis

For ICT non-recurrent capex, a reasonable alternative forecast is 4% less than CP/PAL has proposed and 16% less than United Energy has proposed

355. In Table 3.17, Table 3.18, and Table 3.19, we show the proposed and adjusted ICT non-recurrent capex for CitiPower, Powercor, and United Energy.

Table 3.17: CitiPower non-recurrent ICT capex adjustment - $m, real 2026

ICT – non-recurrent	Adjustment	FY27	FY28	FY29	FY30	FY31	TOTAL
Proposed forecast		7.4	17.0	8.8	7.6	2.7	43.5
Alternative forecast		5.6	17.0	8.8	7.6	2.7	41.8
Adjustment	**-4%**	**-1.7**	**0.0**	**0.0**	**0.0**	**0.0**	**-1.7**

Source: EMCa analysis

Table 3.18: Powercor non-recurrent ICT capex adjustment - $m, real 2026

ICT – non-recurrent	Adjustment	FY27	FY28	FY29	FY30	FY31	TOTAL
Proposed forecast		17.3	39.8	20.4	17.8	6.2	101.5
Alternative forecast		13.2	39.8	20.4	17.8	6.2	97.4
Adjustment	**-4%**	**-4.1**	**0.0**	**0.0**	**0.0**	**0.0**	**-4.1**

Source: EMCa analysis

Table 3.19: United Energy non-recurrent ICT capex adjustment - $m, real 2026

ICT – non-recurrent	Adjustment	FY27	FY28	FY29	FY30	FY31	TOTAL
Proposed forecast		16.5	29.5	30.5	30.9	9.2	116.6
Alternative forecast		9.1	21.6	28.2	29.6	9.2	97.7
Adjustment	**-16%**	**-7.4**	**-7.9**	**-2.3**	**-1.3**	**0.0**	**-18.9**

Source: EMCa analysis

ICT opex - Alternative forecast of additional opex (excluding CER and cyber security)

CitiPower's proposed incremental ICT opex (excluding CER and cyber security) is $1.2m more than a reasonable forecast

356. As shown in Table 3.20, based on our assessment, we consider that CitiPower's proposed opex is overstated by 7%.

Table 3.20: CitiPower proposed and alternative ICT step-change - $m, FY2026

Opex step changes	FY27	FY28	FY29	FY30	FY31	TOTAL
Proposed forecast (within EMCa scope)						
Cloud services	1.24	3.67	2.13	2.17	0.79	9.99
ICT modernisation and new capability	-0.30	0.29	2.08	2.50	2.58	7.15
Total proposed	**0.94**	**3.95**	**4.22**	**4.67**	**3.36**	**17.14**
Alternative forecast (within EMCa scope)						
Cloud services	1.24	3.67	2.13	2.17	0.79	9.99
ICT modernisation and new capability	-0.29	0.29	1.67	2.09	2.16	5.92
Total alternative forecast	**0.96**	**3.96**	**3.80**	**4.25**	**2.95**	**15.92**

Source: EMCa analysis

Powercor's proposed incremental ICT opex (excluding CER and cyber security) is $2.9m more than a reasonable forecast

357. As shown in Table 3.21, based on our assessment, we consider that Powercor's proposed opex is overstated by 8%.

Table 3.21: Powercor proposed and alternative ICT step-change - $m, FY2026

Proposed forecast	FY27	FY28	FY29	FY30	FY31	TOTAL
Proposed forecast (within EMCa scope)						
Cloud services	2.90	8.55	4.97	5.05	1.84	23.32
ICT modernisation and new capability	-0.70	0.67	3.26	4.14	4.21	11.59
Total proposed	**2.20**	**9.23**	**8.24**	**9.20**	**6.05**	**34.91**
Alternative forecast (within EMCa scope)						
Cloud services	2.90	8.55	4.97	5.05	1.84	23.32
ICT modernisation and new capability	-0.67	0.68	2.30	3.18	3.23	8.72
Total alternative forecast	**2.23**	**9.23**	**7.28**	**8.23**	**5.07**	**32.04**

Source: EMCa analysis

United Energy's proposed incremental ICT opex (excluding CER and cyber security) is $4.1m more than a reasonable forecast

358. As shown in Table 3.22, based on our assessment, we consider that United Energy's proposed opex is overstated by 11%.

Table 3.22: United Energy ICT step-change alternative forecast and adjustments - $m, 2026

Proposed forecast	FY27	FY28	FY29	FY30	FY31	Total
Proposed forecast (within EMCa scope)						
Cloud services	0.19	0.61	7.78	9.22	2.63	20.44
ICT modernisation and new capability	0.13	2.42	5.07	4.32	4.76	16.71
Total proposed	**0.33**	**3.03**	**12.86**	**13.54**	**7.39**	**37.14**
Alternative forecast (within EMCa scope)						
Cloud services	0.19	0.61	7.78	9.22	2.63	20.44
ICT modernisation and new capability	0.18	2.43	3.70	2.94	3.37	12.61
Total alternative forecast	**0.38**	**3.03**	**11.49**	**12.16**	**5.99**	**33.05**

4 REVIEW OF PROPOSED CER AND ELECTRIFICATION EXPENDITURE

In combination, CitiPower, Powercor and United Energy ('CPU') propose $328.5 million expenditure on CER and electrification. The majority of this ($211.8m) is for an 'LV electrification' program, while the remainder is to implement ICT projects comprising $56.7m capex and $60.0m opex.

We have provided business-specific assessments of the proposed customer driven electrification augex in our accompanying technical reports. CPU's proposed expenditure is largely based on its economic assessment. However, we find that this is based on a considerable overestimate of the value of such augmentations and, consequently, the proposed programs represent a considerable overstatement of what is justified.

We find that CPU has a well-constructed plan to introduce Flexible Services and has demonstrated that its proposed investment to do so is economic. For this project, we consider that the aggregate $47m capex for Flexible Services ICT capex is justified, and that the proposed $44.9m opex is a reasonable estimate of the additional opex that will be required to implement this program.

We consider that CPU has not demonstrated that its proposed ICT projects to develop and operate a customer data portal and a non-network marketplace, are justified.

4.1 Introduction

4.1.1 Scope

359. In this section, we review the projects and associated expenditures that the three entities have proposed for their Electrification and CER programs.

360. The three entities have adopted a common strategy for addressing CER and electrification, and common projects. For the CER ICT projects, our understanding is that these are also enterprise-wide investments for which expenditure is being allocated between the three entities. Due to their commonality, we describe and assess the CPU strategy and programs together in the current document.

361. We tend to refer to information in the business case for only one entity as a proxy for the others, however we have assessed business cases for all three entities in order to satisfy ourselves that conclusions that we draw for one entity are valid for the other two. We identify the proposed expenditures and present the implications of our findings for each business.

4.1.2 Structure of this section

362. In section 4.2 we provide a summary of the CPU strategy for CER and electrification and introduce what the business entities have proposed.

363. We assess each of the three ICT projects in 4.3.

364. Our assessment of the customer electrification projects for each DNSP are contained in our separate reports as proposed augex projects, however for completeness we also summarise in section 4.4 our findings from those assessments.

4.2 Overview of CPU's CER and electrification strategy and proposed projects and expenditure

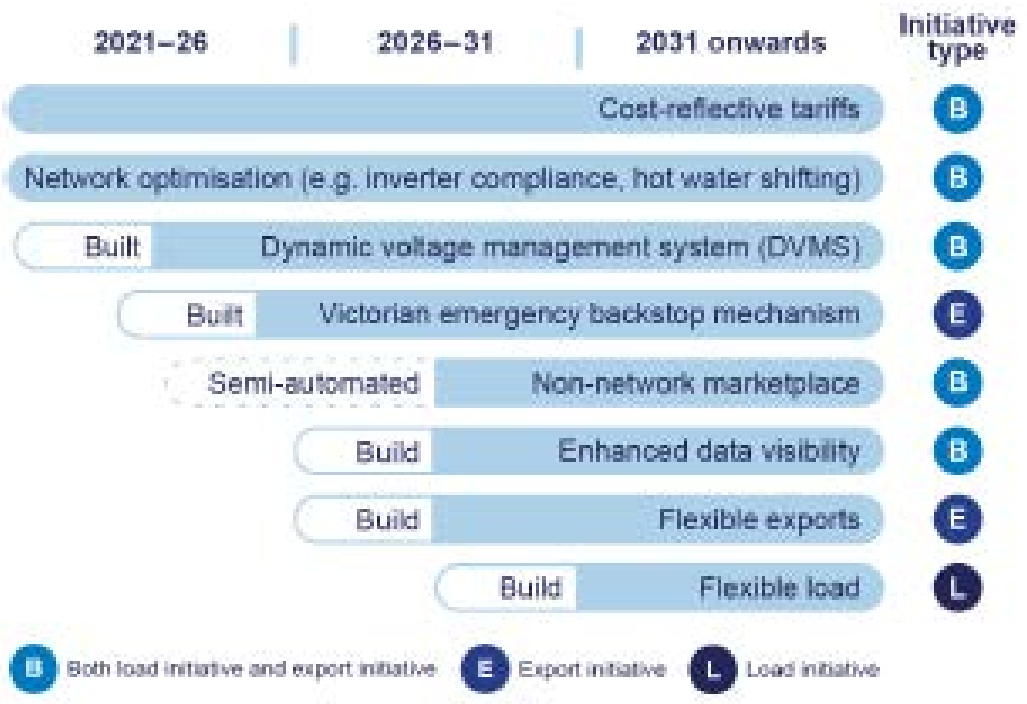
4.2.1 CPU's electrification and CER strategy

Strategy builds strongly on non-network solutions, but proposes significant augex for 'electrification'

365. CPU prominently devotes section 2 of its Regulatory Proposal documents to its electrification and CER strategy.[109] CPU states that its strategy is based on '*maximising utilisation and exhausting all low-cost solutions*'.[110] It illustrates the 'low-cost' solutions in the diagram that we reproduce in Figure 4.1. CPU has already deployed a DVMS and the VEBM. Its next steps are represented by flexible exports and flexible loads, enabled by enhanced data visibility and also to leverage off the VEBM, and a proposed 'non-network marketplace'.

366. Beyond these low-cost solutions, CPU states that it optimises augmentation, focusing on HV solutions where possible, balancing proactive and reactive investments and assessing future replacement needs in its augmentation planning to future-proof for augmentation.[111]

Figure 4.1: Timeline of CPU 'low cost' electrification and CER initiatives



Source: CitiPower Regulatory Proposal, Part B (page 15)

Customer engagement input informs aspects of CPU's proposal

367. From its customer engagement, CPU has gleaned input to its strategy such as:

- Input on solar exports that it has interpreted as supportive of self-consumption but also with export flexibility

109 CitiPower Regulatory proposal 2026-31, Part B: explanatory statement

110 As above, page 15

111 As above, page 15

- Concerns regarding the impact of electrification of gas
- An EV preference for in-home charging that can be 'managed' by the network, provided there is a manual override, and
- From commercial and industrial customers, increasing concerns regarding power quality.

368. For the most part, we see evidence that CPU has considered customer preferences in developing its CER and electrification strategy.[112] An exception is that the three network businesses propose a CER export charge, though they report that customers were strongly against these. We also note that, while customers supported CPU's stated principle of exhausting low-cost solutions before investing in higher-cost network solutions, the extent to which the LV electrification augex that CPU proposes is consistent with customer expectations depends on CPU's demonstration that low cost non-network solutions have in in fact been exhausted.[113]

No requirement for CER exports augex

369. Significantly, we observe that CPU intends to rely on flexible exports to accommodate PV export, with the following statement:

> *'We are proposing no export-driven augmentation across our 2026-31 regulatory period. After accounting for the benefits of flexible exports, no efficient augmentation sites were identified using the AER's customer export curtailment value and value of emissions reduction.'*[114]

370. We consider this further in our assessment below but on the face of it, CPU's statement that it does not require any CER integration augmentation suggests a significant vindication of its adoption of this component of its non network-based strategy. As we refer to above, however, it does propose significant network augex for the electrification component of its strategy, and which we refer back to in section 4.4.

4.2.2 Proposed CER projects and expenditure

371. The three DNSPs have in aggregate proposed expenditure of $328.5m for their CER and electrification programs. The largest portion of this, at $211.8m, is for a proposed augex program to respond to customer-driven electrification. The remainder is for three ICT projects, as shown in Table 4.1:

- Flexible services
- Data visibility and analytics, and
- Non-network procurement platform.

112 CitiPower Regulatory proposal 2026-31, Part B: explanatory statement, pages 15-20

113 For example, we compare the statement on page 25 of the CitiPower Regulatory Proposal (Part B) that '*we are proposing an opt-in two-way CER tariff that includes an export charge from 11am to 4pm and an export rebate from 4pm to 9pm*.' With the statement on page 17 that '*…customers strongly oppose export tariffs as they see them as an additional cost*'.

114 CitiPower Regulatory Proposal, Part B, page 28

Table 4.1: Proposed CER expenditure for CitiPower, Powercor and United Energy - $m, 2026

	CP	PAL	UE	TOTAL
CER - Augex:				
Customer-driven electrification	40.9	100.6	70.4	**211.8**
CER integration	-	-	-	**-**
Subtotal - Augex	**40.9**	**100.6**	**70.4**	**211.8**
CER - ICT Capex:				
Flexible services	9.8	22.8	14.6	**47.1**
Network data visibility	0.7	1.7	1.1	**3.5**
Non-network procurement platform	1.3	3.0	1.9	**6.1**
Subtotal - ICT	**11.8**	**27.4**	**17.6**	**56.7**
TOTAL CER Capex	**52.6**	**128.0**	**87.9**	**268.6**
CER - ICT Opex:				
Flexible services	9.4	22.0	13.5	**44.9**
Network data visibility	1.3	3.0	1.8	**6.2**
Non-network procurement platform	1.6	3.7	3.6	**8.9**
TOTAL CER Opex	**12.3**	**28.7**	**18.9**	**60.0**
CER TOTEX	**64.9**	**156.7**	**106.9**	**328.5**

Source: EMCa, consolidated from CP, PAL and UE SCS capex models and opex step change information in respective opex models

372. In section 4.3 we provide our assessment of CPU's proposed ICT initiatives, while in section 4.4, we summarise our review of each DNSP's proposed capex for the 'LV electrification' component of its strategy.

4.3 Assessment of proposed CER ICT initiatives

4.3.1 Flexible services

What CPU has proposed

CPU proposes to introduce flexible services for exports and imports

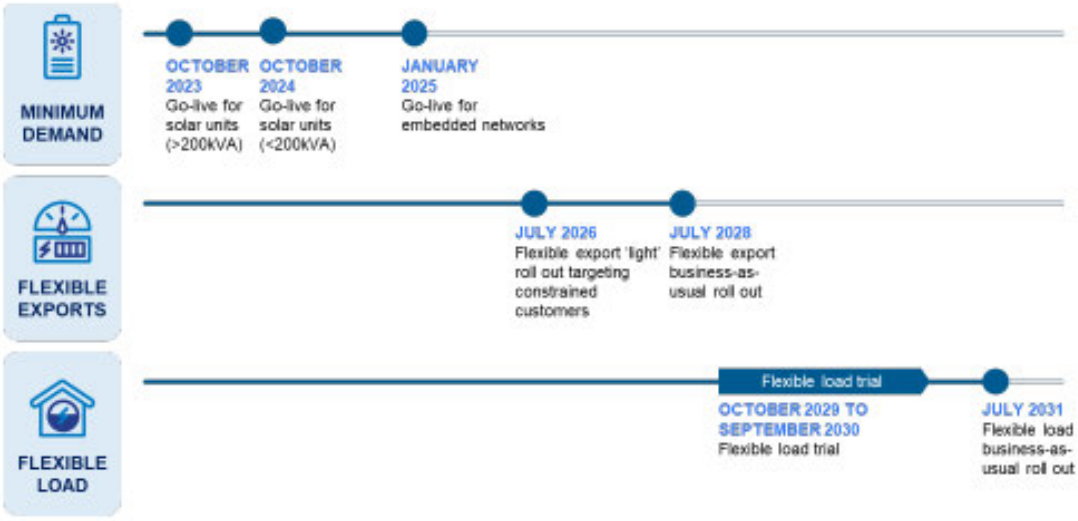
373. CPU proposes to deploy flexible service offerings in order to address increasing curtailment of exports (driven by CER) and, arising over the period, potentially constrained import capacity (driven by electrification). As shown in Table 4.1, in aggregate the CPU entities propose $47.1m capex and $44.9m opex step change over the period.

374. CPU presents this as its preferred option, after comparing it with the alternatives of:

- Continuing to impose static export limits on PV customers, where it has limited export hosting capacity, or
- Augmenting the network to provide 'anytime' hosting capacity sufficient to meet customer exports as and when they occur.

375. CPU presents the timeline shown in Figure 4.2, with flexible exports offered to 'constrained' customers from 2026, full deployment from July 2028 and flexible imports from July 2031 (following a trial commencing in late 2029). While indicative, CPU has based its regulatory proposals on this timeline.

Figure 4.2: Flexible services – Indicative timeline



Source: CitiPower CP BUS 2.01, page 20

CPU's proposal is based on an assumed flexible services 'product', supported by a costed plan and an economic analysis

376. CPU summarises its proposed flexible tariff products in the graphic which we reproduce in Figure 4.3.

Figure 4.3: Residential flexible product[115]

Source: CP BUS 2.01, Figure 11 (page 21)

377. CPU presents a costed plan for the development, deployment and ongoing operations of its proposed flexible services and an economic analysis of its proposed and alternative options for each entity. We consider both in our assessment below.

Assessment

CPU has considered appropriate options

378. The business case describes options for managing solar exports as either:

- Option 1: Maintaining existing (static) controls

115 CitiPower qualifies this diagram with the following statement: '*This analysis is based on current (FY25) feed-in tariffs. On 10 January 2025, the ESC published their minimum feed-in tariff review 2025–26 draft decision paper, due to take effect 1 July 2025.*'

- Option 2: Offer flexible export services
- Option 3: Offer flexible export services (per option 2) and also flexible load services, and
- Option 4: Augment the network as a means of providing sufficient export and import capacity for CER and electrification.

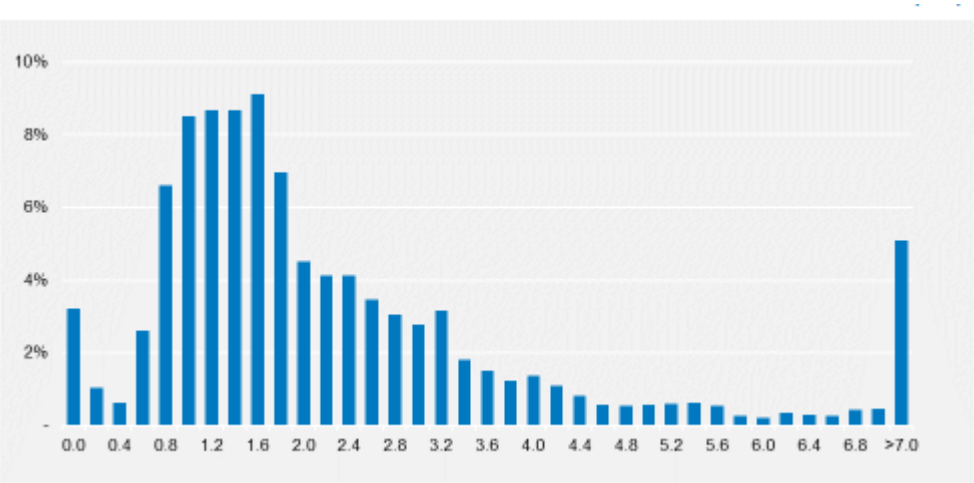
379. We consider that this provides a reasonable representation of the options available to CPU.

Under a 'non-intervention' option (i.e. Option 1) CPU would need to impose increasingly onerous export limits, resulting in curtailed exports and limitations on imports

380. In presenting its assessment of the option of maintaining static controls, the diagram shown in Figure 4.4 is included in CitiPower's business case showing the distribution of intrinsic hosting capacity. For CitiPower, the business case states that its analysis shows it to have a median intrinsic hosting capacity of 1.6kW; the equivalent figures are 1.4kW for Powercor and 1.5kW for United Energy.[116]

381. CitiPower states that it currently has 460MW of available hosting capacity on its network, and United Energy 1,060 MW but that they expect this to become more utilised over the next regulatory period. Powercor states that it has 1,350 MW of hosting capacity, but that this is already 96% utilised.[117]

Figure 4.4: CitiPower percentage of customers with intrinsic hosting capacity (kW)



Source: CP BUS 2.01, page 5

382. The current approach to new and upgraded CER connections is described as follows:

- New and upgrading solar customers are offered the 5kW static export limit if there is capacity available, and
- If there is not sufficient export capacity, then customers are offered a lower static export limit or, if necessary, a zero export limit.

383. The information above gives an indication of the extent to which exports would need to be curtailed under an option in which the businesses continue their current approach of imposing static export limits. In CPU's CBA models, which we discuss below, CPU assesses the cost of such curtailed exports (and similarly limited imports) as a benefit to reducing the level of curtailment and constraint under the proposed intervention options.

116 CP BUS 2.01 page 8, UE BUS 2.01, page 8, PAL BUS 2.01, page 9

117 As above

Under an 'augmentation' option (Option 4), the businesses estimate that they would need to invest in significant augex

384. In its CBA models for flexible services, CPU has modelled an 'augex' solution as a potential alternative to the non-network solution that it proposes.

385. In Table 4.2 we summarise CPU's estimates of the level of augex that would be required to achieve this outcome and which would amount to $916m over the next RCP. Under CPU's analysis, this augex is avoided by its flexible service solution.

Table 4.2: Summary of augex that CPU estimates would be required if it was to adopt an 'augex' solution to absorb PV exports - $m, real 2026

	FY27	FY28	FY29	FY30	FY31	TOTAL
CP	36.0	28.2	4.9	5.4	2.9	**77.3**
PAL	198.1	110.6	47.9	43.6	18.8	**419.1**
UE	149.2	138.2	13.1	15.1	7.6	**496.4**
TOTAL	**383.3**	**277.0**	**65.9**	**64.1**	**29.4**	**915.6**

Source: EMCa, from Flexible Services models for each business (e.g. CP MOD 2.01). (Option 4, augmentation expenditure)

386. CPU's estimates of the level of augex that it would require in FY27 and FY28 under this option appear questionable, as does the logic as to why this augex is needed for this option but not for the flexible exports option even though flexible exports will not have been deployed by this time. Nevertheless, even without more in-depth consideration of its CBA, it is evident that the augex under 'Option 4' would be a substantial expenditure, well in excess of what CPU proposes and effectively rules out this option in favour of the non-network flexible services solutions.

CPU is justified in concluding that its preferred Option 3 has a positive (and highest) NPV

387. The CPU business cases present CBA modelling over the period to 2040. We summarise the results of its modelling in Table 4.3, in which CPU finds that Option 3 (flexible exports and import) provides the highest NPV, and that this NPV is both positive and substantial.

388. Costs and benefits for options 2 to 4 are defined relative to Option 1, which is therefore presented as the zero cost / zero benefit counterfactual. As can be seen, CPU calculates a substantial negative NPV for Option 4.

Table 4.3: Summary of CPU Cost Benefit Analysis for Flexible Services business case - $m, real 2024

	CP	PAL	UE	TOTAL
Option 1: Base case (maintain existing policy)				
PV Benefits	0	0	0	**0**
PV Cost	0	0	0	**0**
NPV	**0**	**0**	**0**	**0**
Option 2: Flexible exports				
PV Benefits	37	184	70	**290**
PV Cost	-15	-35	-22	**-72**
NPV	**21**	**149**	**48**	**218**
Option 3: Flexible exports and imports (CPU preferred)				
PV Benefits	41	204	83	**328**
PV Cost	-16	-38	-23	**-77**
NPV	**25**	**166**	**59**	**251**
Option 4: Augex only				
PV Benefits	34	152	53	**239**
PV Cost	-73	-392	-305	**-769**
NPV	**-39**	**-240**	**-251**	**-530**

Source: EMCa, summarised from models CP MOD 2.01, PAL MOD 2.01, UE MOD 2.01 (Data is also in each of four tables in the three business case documents)

389. We further consider CPU's cost and benefit assumptions below. While we have some concerns with CPU's CBA methodology, which we describe below, we nevertheless consider that its choice of Option 3 is justified and that it is valid to conclude that it has a positive economic value.

There are issues with the CBA, but the preferred option still would have a positive NPV

390. In reviewing the CBA models that the CPU business have put forward, we consider that there are two significant modelling flaws:

- Firstly, in calculating the Net Benefits, the formula does not include all costs. Instead, we find that (for costs) it includes only opex and does not pick up the capex investment. We see no reason why this should be the case. However, we also find that this does not invalidate CPU's NPV calculations, because these have been calculated by separately calculating the PV of all benefits and the PV of all costs and deriving the NPV from this.
- Secondly, while benefits extend to 2040, the models include no costs beyond the end of the regulatory period, whereas benefits are assumed to continue to 2040. This mismatch between the benefit and cost assessment periods results in a significantly higher NPV that we consider is not valid.

391. We consider that realistically:

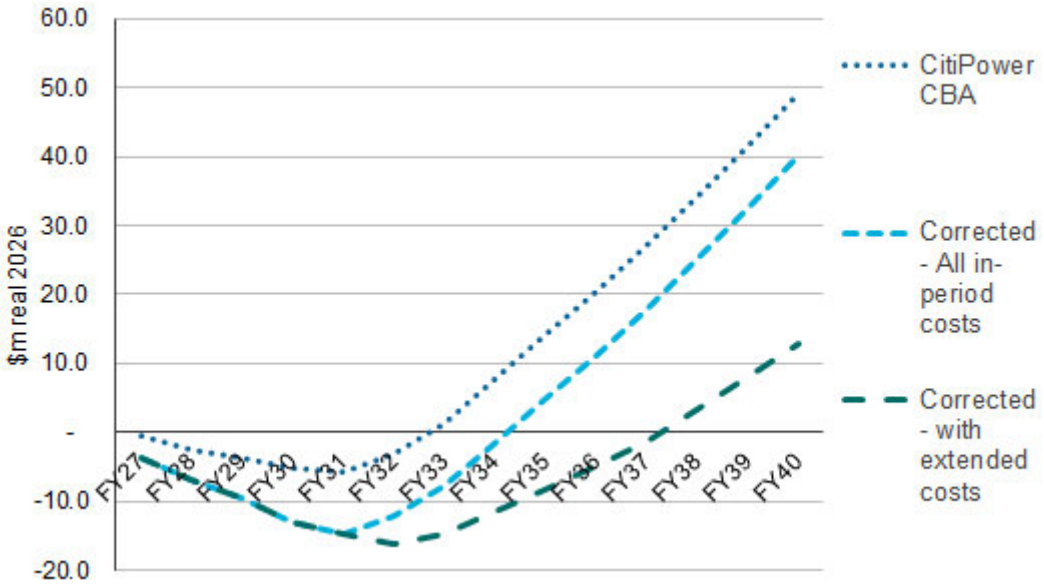
- The opex, which CPU builds up in assuming a team to manage an ongoing flexible service program, cannot cease after 2031 and will be required to continue to manage the program, and
- ICT capex investment is likely to need some form of refresh over an analysis period that ultimately extends to 13 years after the primary investments have been made (i.e. from 2027 to 2040).

392. In the graph below, we show (for CitiPower) the cumulative benefits of the program as represented in CitiPower's CBA. We then show alternative modelling in which:

- Firstly, we have included all 'in period' costs, and
- Secondly, we have also included an estimate of costs extending to 2040. For this purpose, we have assumed that:
  - CitiPower's opex in 2031 continues at the same level, and
  - CitiPower's capex is extended by including 'refresh' costs starting in 2032 that are 50% of the original costs 5 years prior.

393. With these corrections, CitiPower's proposal still breaks even within the analysis period, but with a considerably lower cumulative net benefit than is shown in its model at $5m, rather than the $25m claimed in its business case.

Figure 4.5: Cumulative net benefits for CitiPower's proposed flexible services program, including with EMCa indicative modelling corrections - $m, real 2026



Source: EMCa, with original source information from CitiPower CP MOD 2.01, including with modifications to the 'Options analysis' sheet.

CPU's assessment of benefits is reasonable

394. CPU has valued the benefits of flexible exports by reference to the avoidance of export curtailment and import limitation. For export curtailment benefits, CPU assesses:

- CECV and CO2 benefits, both of which are calculated from detailed analysis of the volumes of avoided export curtailment, and
- A system security benefit.

395. CPU states that:

- Solar curtailment benefit is quantified based on AER's CECV
- Emissions reduction is quantified based on AER's Value of Emissions Reduction (VER)
- System security risk is quantified using AER's VCR, and
- EV load orchestration is quantified through an assessment of avoided augmentation.

396. While reasonable in principle, the methodology for calculating the system security benefit is not transparent. However, it represents only a small component of aggregate benefit. The values used for other parameters are reasonable.

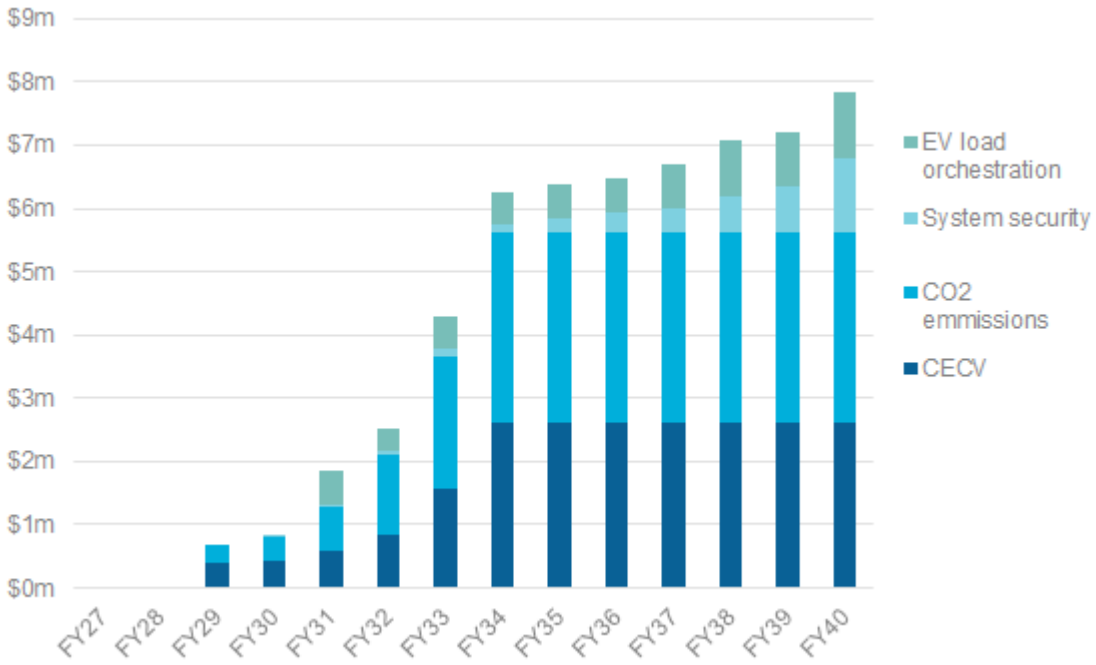
397. CPU refers to 'willingness to pay' research leading to a higher benefit value than the AER's published CECV value and we see that in its modelling. CPU has calculated an additional Customer Value of Solar Exports (CVSE) based on a value of 9 c/kWh. We consider this to

be a relatively ambitious value, given current much lower financial returns to customers from exports, however we also note that CPU has considered this only in its sensitivity analysis.[118]

398. In Figure 4.6 we show CitiPower's assessment of the benefits of its flexible services program. In aggregate, we consider that this is a reasonable forecast based on reasonable assumptions and the methodology that is described in the business case.

399. We also consider that the analysis period to 2040 is reasonable. By that time, flexible exports will have been in place for 13 years and flexible imports 9 years. This analysis period provides sufficient time for the benefits of these programs to be evident, but not so much time as to render them unreasonable on the basis of future uncertainty.

Figure 4.6: CitiPower forecast of flexible services benefits (option 3) - $m, real 2026

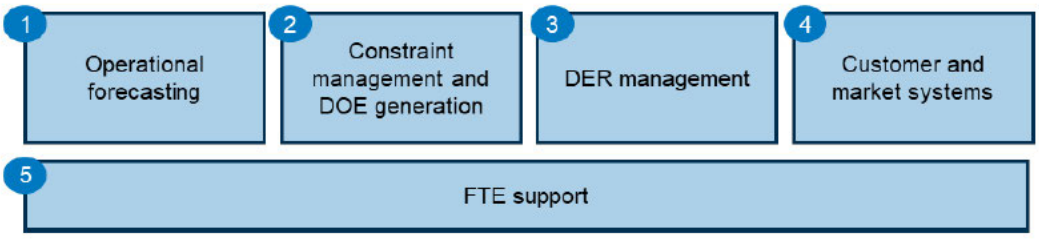


Source: EMCa graph from information in CP MOD 2.01

Proposed expenditure is derived from a reasonable assessment

400. CPU has developed an assessment of the cost of providing flexible services, with key cost components as shown in Figure 4.7.

Figure 4.7: Key cost components for flexible services



Source: CitiPower CP BUS 2.01, figure 9 (page 16)

118 E.g. see reference in CP BUS 2.01, figure 5 (page 12). Application as 'sensitivity only' is also evident in the models (e.g. as the 'Additional Benefit' referred to in the 'summary' sheets.

401. The CPU expenditure proposal is built up from its consideration of the functionality that it requires. We summarise the CPU business case description of these requirements in Figure 4.8, since these descriptions are relevant to our consideration of its proposed expenditure.

Figure 4.8: Summary description of CPU's defined cost components for flexible services

Operational forecasting

CPU business cases describe a need to be able to forecast in 5-minute increments up to 6 months ahead, down to the LV and individual customer level. This will be utilised in designing flexible export and flexible load products and to inform DoE forecasts facilitating optimal management of DER and will provide foundational data for the proposed Data Visibility portals.

Constraint management and DoE generation

This functionality is to provide functionality at scale to calculate capacity or constraints, to generate real-time, granular DOEs.

DER management system

This system is required to manage the DER fleet, including creating, storing and communicating the flexible export (or load) limit schedules. CPU will develop this as an enhancement to its current DER management system, which was developed for compliance with the VEBM.

Customer and market systems

These systems will provide storage of customer information relevant to flexible services, provide notifications to customers and allow for configuration of certain parameters by solar installers, and will provide customers with enhanced insights through the customer portal.

Additional FTEs required to support ongoing VEBM and new functionality

CitiPower states that 'our network' receives 20,000 new or upgraded solar connection requests per year.[119] The business case lists key FTE activities against the functions of:

- Customer management
- Connections support
- Operational forecasting
- Constraint management and DOE generation, and
- DER management.

Source: EMCa summary from CP BUS 2.01, sections 5.1.1 to 5.1.5

402. CPU's build-up of its proposed capex and opex step change requirements is set out in its business case models. In Table 4.4 we provide this cost build-up for CitiPower.

403. Noting that this is in $2024, it is nevertheless consistent with the capex and opex step change requirements that CitiPower proposes for flexible services, as shown in Table 4.1 (and year by year in CitiPower's business case[120]).

[119] The same figure occurs in the PAL and UE business cases. We assume that 'our network' in this case refers to the combined CitiPower/Powercor/United Energy network.

[120] CP BUS 2.01, table 7, page 16

Table 4.4: CitiPower build-up of costs for flexible services - $m, real 2024

	Capex/ Opex	FY27	FY28	FY29	FY30	FY31	TOTAL
Operational Forecasting							
Technology and systems	Opex	-	-	-	0.03	0.03	**0.05**
Technology and systems	Capex	-	0.06	0.26	-	0.18	**0.51**
Project implementation	Capex	-	0.22	0.13	-	0.02	**0.37**
Constraint Management and DOE Generation-							
Technology and systems	Opex	0.11	0.11	0.11	0.11	0.11	**0.53**
Technology and systems	Capex	-	-	-	-	-	**-**
Project implementation	Capex	0.57	0.15	-	-	-	**0.72**
DER Management							
Technology and systems	Opex	-	0.16	0.16	0.37	0.47	**1.16**
Technology and systems	Capex	0.36	-	-	0.46	-	**0.82**
Project implementation	Capex	0.50	-	-	0.72	-	**1.22**
Customer and Market Systems							
Technology and systems	Opex	0.29	0.29	0.29	0.29	0.29	**1.47**
Technology and systems	Capex	-	-	-	-	-	**-**
Project implementation	Capex	1.38	0.70	0.46	0.46	0.46	**3.46**
Flexible Load	Capex	-	-	0.37	0.37	0.37	**1.10**
CER operation centre (including IT support)	Opex	0.12	1.15	1.16	1.17	1.17	**4.78**
Total capex		**2.80**	**1.13**	**1.22**	**2.01**	**1.03**	**8.19**
Total opex		**0.52**	**1.71**	**1.72**	**1.96**	**2.07**	**7.98**

Source: EMCa, from sheet 'Costs – flexible services' in CP MOD 2.01

404. We sought information from CPU on the basis for ICT cost estimates. In its response, CPU described the process by which it had engaged with vendors and provided two quotes from vendors to evidence this.[121]

405. We consider that CPU's identification and description of the functions required to develop, deploy and operate a flexible services solution is realistic and is evidence of a relatively mature implementation plan. We consider that the proposed capex and opex for each of the businesses is a reasonable estimate of their respective requirements.

The incremental cost of providing flexible load services is small

406. As an observation, we note the relatively modest incremental cost of $1.1m for CitiPower ($2.5m for Powercor and $1.6m for United Energy)[122] that CPU estimates to roll out flexible imports (after having first deployed flexible exports). As its states in describing the difference between Option 2 and Option 3 in its business case documents:

> *'Given both export and load products utilise the same key foundational investment, the incremental amount of capital expenditure is small.'*[123]

[121] CPU response to IR016, Q15. Quotes were provided from Gridqube and Itron. Both are marked confidential.

[122] $2024

[123] CP BUS 2.01, page 13

407. This low incremental cost makes it intuitive to accept that Option 3 (which includes flexible imports) is preferrable to Option 2 (which covers only flexible exports), and this is confirmed by the higher NPV.

Finding

CPU's proposed flexible service program is justified, and its forecast expenditures are reasonable

408. We consider that CPU provides adequate justification for its proposed development and deployment of flexible services during the period, and for applying these first to flexible exports and subsequently offering orchestration with flexible loads. CPU adequately justifies this initiative on economic grounds, with reductions in the CECV-based value of avoidance of curtailed exports and associated CO2 reductions, both of which are allowable benefits consistent with the NER. CPU also demonstrates that, as a result of deploying flexible services, it will no longer require augex to address increasing DER exports from further increases in PV uptake and size.

409. We consider that CPU provides a reasonable forecast of its capex and opex step change requirements for providing this service. Noting that this is to be a new service, we are satisfied that CPU's opex forecast does not duplicate expenditure that was already in its base year, and therefore that it is reasonable for its forecast opex to be considered as a step change.

410. These findings apply equally to CitiPower, Powercor and United Energy's proposals.

4.3.2 Network data visibility

What CPU has proposed

411. CPU proposes to develop a customer portal that will provide customers *'…contextualised information regarding constraints and spare capacity.'*[124] As is shown in Table 4.1, the proposed aggregate expenditure for the three entities is for $3.5m capex and $6.2m opex over the next period.

412. CPU presents the need as arising from the increasing number of data requests it receives, including from customers, councils, community groups and universities including for capacity and constraint information.[125]

413. CPU states that the proposed portal will be designed to provide ease of accessibility with data presented in a variety of formats including geospatial views, dashboards and narratives, the ability to extract and download data and an ability to provide 'one-way feedback' from users. It proposes that the data will be updated weekly.[126]

414. CPU identifies three options in its business case:[127]

- Option 1: Maintain status quo ($0.8m)
- Option 2: Customer portal (proposed) ($9.0m), and
- Option 3: Advanced customer portal ($12.7m).

124 CP BUS 2.03, page 6

125 As above, page 3

126 As above, page 7

127 From CP MOD 2.03, Project Summary sheet. Costs are in $2024 and are the total project costs (i.e. across the three businesses)

Assessment

CPU provided information on the number of enquiries and the types of data requests and indicative use cases

415. Information in the business case refers to a range of stakeholders seeking information. We sought to better understand the prevalent types of requests, request volumes and who they were made by.

416. In response to our Information request[128] CPU advised that, across the three entities, it had received 451 requests for data since July 2023, with requests pertaining to:

- Consumption / generation
- Asset information
- Solar data
- Faults and emergencies
- High voltage earthing, and
- Network data.

417. CPU advised of two 'use cases:'

- A local council seeking to install a community battery, and
- A commercial customer seeking to install a large volume of EV chargers at their premises.

418. CPU advised that the information that it would provide on its proposed portal would:

- Provide geographic granularity to the distribution transformer level (except where this would breach customer confidentiality, in which case it would be at feeder level), and
- Be for 30-minute intervals as a starting point, moving towards 5-minute intervals.

CPU's business case and additional information do not suggest a justified need for a portal such as it proposes

419. While it is reasonable to expect that there will be an increasing call for LV information to be made available to customers and other stakeholders, we consider that the information that CPU has provided, both in its business case and in its response to our information request, does not present a convincing case for a portal such as it proposes, to be established and maintained. We observe that:

- The volume of requests (451 over a period of, it appears, around 18 to 20 months) does not appear to be an overly onerous burden. In broad terms, we estimate that if the proposed cost of close to $10m was to be amortised it would imply a cost for the portal of the order of $7,000 per request
- It is not at all clear that the information that was sought (as listed in CPU's response) would all necessarily be available on the portal, meaning that bespoke queries would continue
- We consider that the use cases that CPU provided would be particularly unlikely to be resolved through 'self-service' by the relevant stakeholder, using the proposed portal. These appear to be relatively large potential uses which we expect would inevitably require a bespoke consideration and response within CPU, and
- While the business case refers to the portal having the 'ability for questions', and refers to 'interacting', it also states that this would simply involve one-way feedback to allow CPU to '*better understand how our data is being used*'.[129] In other words, the user would obtain nothing from the portal except the data that has been preloaded into it.

128 CPU response to EMCa IR016, Q19

129 As above

CPU does not provide a CBA or any assessment of benefits

420. The model provided with this business case does not provide any assessment of benefits. If CPU was to develop a portal such as it proposes, we would expect there to be a cost saving arising from a reduced need for manual responses, such as it currently provides. There may also be time savings to customers and, potentially, some form of 'effectiveness' improvement to the extent that customers and other stakeholders may be better able to install energy transition-related facilities (including batteries and LV chargers) when and where they are economically beneficial. However, CPU's business cases provide no evidence of such benefits or whether it would justify the proposed level of investment.

421. Absent an economic assessment, it is not possible to endorse this project on economic grounds.

CPU already has LV data visibility for internal purposes

422. For clarity, we note from CPU's other CER business cases that it already has a good level of LV data visibility and analytical capability and that it will be extending this under the Flexible Services initiative that we describe above. This means that not only will CPU have such data for internal purposes, but it has the means to cost-effectively assemble such data at the geographical and time-based granularity that is needed, on a bespoke basis for specific stakeholder requests. We suggest that such 'manual intervention' will also assist in ensuring that data will be that which is most relevant to the requestor's need, and which may not always be the case under a self-service 'portal' model.

The option of an advanced customer portal is not justified

423. Extending from our view that CPU has not justified the proposed customer portal, there is less justification for an advanced customer portal, which CPU presents as providing real-time synchronisation with its internal data and providing AI enablement to assist with extracting data and retrieving information. The additional cost of this option (across the three entities) would be $3.7m.

A lower cost option may be justified, but CPU has not proposed one other than 'maintaining the status quo'

424. We consider that there could be merit in CPU expanding the information that it currently offers, to include LV data. This is CPU's 'Option 1. At the same, time, we would expect that CPU may well be able to make modest enhancements that would pragmatically address current state deficiencies referred to in its business case. For example,

- Whether data could be updated more than annually (but not necessarily weekly, as proposed under the portal option)
- Whether the same 'one-way feedback' proposed for the portal could be provided at minimal cost through a feedback email link, and
- Similarly, whether requests for data downloads could be addressed with a lower cost solution.

425. From information in CPU's model, we observe that the total cost for Option 1 across the three entities would be under $1m, nearly all of which is opex (of the order of $170,000 per year over four years). The operating cost aspects of providing data to stakeholders might be more effectively built into functionality related to the services for which such data would be used, most notably for the provision of flexible services (associated with PV and LV charger connection), and for which CPU has proposed a significant expenditure uplift.

Finding

426. We consider that CPU has not provided sufficient justification for the capex and an opex step change for its proposed customer data portal to be included in its regulatory allowance.

4.3.3 Non-network marketplace

What CPU has proposed

Proposed establishment and operation of a non-network marketplace

427. CPU proposes to develop a non-network marketplace that '*…will better allow customers and the market to actively participate and be rewarded for their contribution to the management of the distribution network.*'[130] CPU refers to UK experience, and states that *'…it took over a decade of proactive investment, planned, and staged legislative change, and targeted industry engagement to slowly grow their market for non-network services.*'[131]

428. CPU proposes to develop a non-network marketplace platform in FY27 and operate it over the period. As shown in Table 4.1, CPU proposes a project cost of $6.1m (capex) followed by opex of $8.9m for the remaining four years ($2.2m per year), for totex of $15.0m in the next RCP.

CPU background information in support of need

429. CPU refers to stakeholder engagement and their support for low-cost solutions to avoid network augmentation. However, CPU states that over the past five years it has *'… not received any economically viable non-network alternatives from the market to date that (it) has been able to implement*'.[132]

430. CPU states that in 2023 it ran a trial with a non-network solution platform. However, its main conclusion from this trial is that *'…while there are non-network providers keen to participate, the market is currently not mature enough to consistently meet network constraints (in most cases) at a cost lower than network augmentation.*'[133] CPU states that no bids were ultimately submitted through the trial process.

CPU presents economic analysis that claims positive NPVs for each business

431. CPU presents a CBA that shows positive NPVs for each business, though these are somewhat marginal for CitiPower and United Energy as shown in Table 4.5.

Table 4.5: Summary of CPP's CBA results - $m, real 2026

	CP	PAL	UE
PV costs	2.5	5.9	4.7
PV benefits	2.7	12.0	5.5
NPV	**0.2**	**6.1**	**0.8**

Source: CP BUS 2.02 table 3, PAL BUS 2.02 table 3, UE BUS 2.02, table 3

Assessment

The circumstantial information that CPU offers does not provide a compelling case for a non-network marketplace

432. While we can accept that it will take time to establish a non-network marketplace, there are points that can be made in response to CPU's key propositions claiming that it is needed and needed now. Some observations on the circumstantial information presented in its business case are:

130 CP BUS 2.02, page 2
131 CP BUS 2.02
132 CP BUS 2.02
133 CP BUS 2.02

- Non-network solutions are already being deployed, though they are not necessarily being 'purchased' by network businesses such as CPU. At the grid level, grid batteries are an example. There are fewer examples at the LV level, although up to a point the growth of DER itself is by definition a non-network 'solution' and (from 1 July 2025) LV batteries are being incentivised by the federal government to enhance the viability of these too as non-network solutions. CPU itself has proposed a significant non-network solution in introducing flexible services
- As CPU notes in referring to the UK experience, there are many factors that influence the extent to which non-network solutions are deployed; a marketplace for a network business to purchase such solutions may be one such factor, though it is not clear whether it is significant relative to other factors, and
- While it would be unrealistic to judge the potential success of a marketplace based on what was presumably a limited trial, nevertheless CPU's trial did not seem to provide a strong indicator for such success.

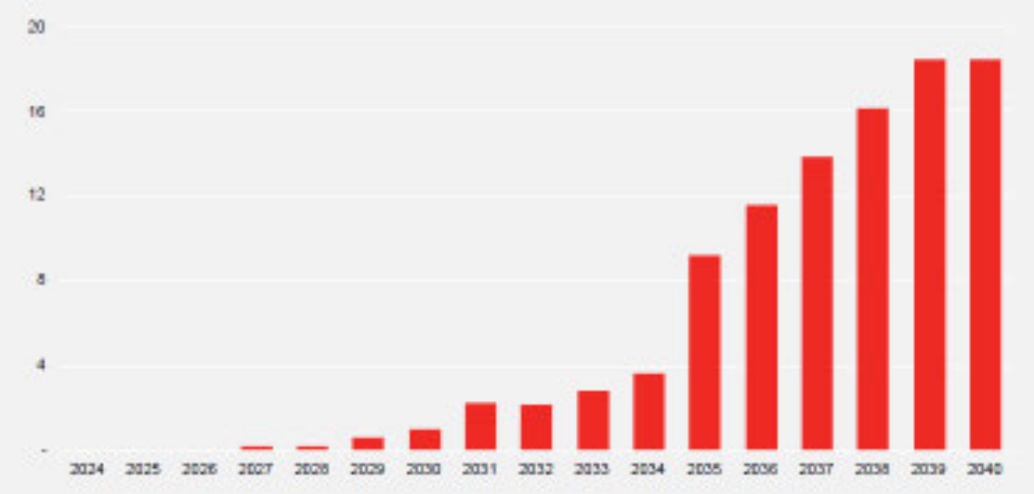
433. Taken as a whole, we consider that the information that CPU provides in its business cases does not present a compelling case that a non-network marketplace is a viable enabler of non-market solutions.

The benefits that CPU proposes would, assuming they are realistic, arise long after CPU proposes to invest in establishing such a marketplace and operating it at a considerable ongoing cost

434. CPU's business case is realistic at least insofar as it assumes that benefits will likely not be realised in the medium term. However, this also raises a significant question as to whether it is necessary to invest in such a marketplace now, given the inevitability of significant changes in the 'energy transition' landscape, including technology change and other changes in the regulatory and government policy framework that will occur over this period. There is an option value to delay.

435. In Figure 4.9, we reproduce Powercor's graph showing its estimate of benefits from the proposed non-network marketplace.[134] As can be seen here, Powercor's forecast is that the benefits will only start to ramp up from around 2035. Benefits will be negligible within the next RCP.

Figure 4.9: Powercor – Forecast annual augmentation deferred (from assumed Non-network marketplace) - $m



Source: Powercor PAL BUS 2.02, figure 5 (page 12)

134 We use Powercor information in this instance, as the largest of the three entities.

Issues with CPU CBA render the project uneconomic

436. We reviewed the CBA models that CPU provided. For the purpose of this assessment, we refer to the Powercor model, though we find that the issues pertain to the models for each business.

437. In its business case, Powercor claims its assessment that the non-network marketplace project has an NPV of +$6.1m.

438. In reviewing Powercor's model, we find two issues that we consider significant:

- Firstly, we consider that there is a formula flaw, in that while the model calculates the PV of the cost series using an appropriate Excel formula, the PV of the benefit series has been incorrectly specified to calculate the PV of the sum of the benefits, not the benefit series itself. This considerably overstates the PV of the benefits.
- Secondly, the NPV is based on an analysis of benefits to 2041, while the costs are assessed only to 2031. This significantly underestimates the costs associated with achieving the forecast benefits.

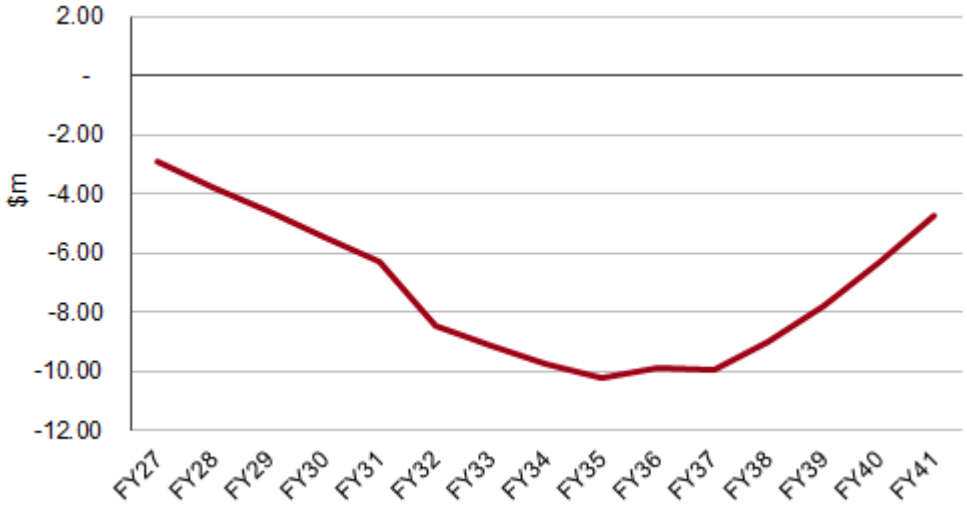
439. In a CBA, the period for the costs and benefits should match. We observe that the majority of the proposed costs are annual opex and it seems reasonable to assume that these will not cease after 2031. It is also likely that the ICT platform to be developed in 2027 will require some form of refresh.

440. As working assumptions, we have recalculated the NPV assuming that opex continues to 2041 at the same level as 2031 (in real terms) and we assume refresh costs of 50% of the cost five years previously. We also correct the benefits PV formula. When we recalculate the NPV with these changes, we calculate an NPV for Powercor of negative $5.5m.

441. In Figure 4.10 we show our corrected forecast of the cumulative net benefit of this project for Powercor. As can be seen, it remains negative throughout the analysis period to 2041 and is at a maximum negative position of -$10m until 2037.

442. From the information provided, we consider that the proposed project is uneconomic.

Figure 4.10: Powercor – Cumulative net benefit of proposed non-network marketplace - $m, real 2026



Source: EMCa analysis

Finding

The proposed non-network marketplace project is not justified

443. We consider that the proposed non-network marketplace project is not justified. We therefore consider that the proposed capex and opex for this project, for each business (as shown in Table 4.1) is not required.

4.4 Customer-driven electrification

4.4.1 Overview

444. As shown in Table 4.1, in aggregate the CPU entities propose expenditure of $211.8m to undertake what they consider to be economic investments to augment the networks to manage the LV impacts of customer-driven electrification.

4.4.2 Assessment

445. Our assessments of the LV customer driven electrification programs proposed by each business, are contained in our separate technical assessment reports for CitiPower, Powercor and United Energy.[135]

4.4.3 Summary of our findings

446. Consistent with our assessments in the three technical reports referred to above, we consider that the proposed customer-driven electrification augex, which totals $211.8m over the period, is significantly overstated.

4.5 Our findings and implications

4.5.1 Summary of our findings

447. In aggregate, the CPU businesses have proposed $328.5m combined capex and opex, for CER and electrification initiatives, comprising a combination of augex and ICT expenditure.

448. We consider that:

- The proposed Flexible Services project is justified. CPU's proposed capex for this project is reasonable and its proposed opex step change is a reasonable estimate of the additional opex that would be required to operationalise flexible services.
- CPU's proposed ICT projects for a Network data visibility portal and for a non-network marketplace, are not justified.
- Consistent with our assessments in each of the technical reports for CitiPower, Powercor and United Energy, the LV electrification augex that is proposed for each business is considerably overstated, as considerably fewer of the proposed augmentations are economic than CPU has proposed.

4.5.2 Implications for proposed capex and opex step change allowances

449. In Table 4.6 we present our summary alternative forecast for CER and electrification for the CitiPower, Powercor and United Energy businesses.[136] In aggregate across the three businesses, we consider that:

450. summary we consider that

135 Refer to the augex sections of each report

136 Refer to Table 4.1 for the aggregate amounts proposed

Table 4.6: Alternative forecast for CitiPower, Powercor and United Energy CER - $m, real 2026

	CP	PAL	UE	TOTAL	Assessment
CER - ICT Capex:					
Flexible services	9.8	22.8	14.6	**47.1**	*Justified*
Network data visibility	~~0.7~~	~~1.7~~	~~1.1~~	~~**3.5**~~	*Not justified*
Non-network procurement platform	~~1.3~~	~~3.0~~	~~1.9~~	~~**6.1**~~	*Not justified*
Subtotal - ICT (Alternative forecast)	**9.8**	**22.8**	**14.6**	**47.1**	*-17%*
CER - Augex:					
Customer-driven electrification	~~40.9~~	~~100.6~~	~~70.4~~	~~**211.8**~~	*Overstated*
Subtotal - Augex (Alternative forecast) (from separate 'technical' reports)	***4.8***	***11.9***	***8.3***	***25.0***	*-88%*
TOTAL CER Capex (Alt forecast)	***14.6***	***34.7***	***22.9***	***72.2***	*-73%*
CER - ICT Opex:					
Flexible services	9.4	22.0	13.5	**44.9**	*Reasonable estimate*
Network data visibility	~~1.3~~	~~3.0~~	~~1.8~~	~~**6.2**~~	*Not justified*
Non-network procurement platform	~~1.6~~	~~3.7~~	~~3.6~~	~~**8.9**~~	*Not justified*
TOTAL CER Opex (Alternative forecast)	**9.4**	**22.0**	**13.5**	**44.9**	*-25%*
CER Capex plus additional Opex	***24.0***	***56.7***	***36.4***	***117.1***	-64%

Source: EMCa

APPENDIX A RELEVANT AER GUIDELINES FOR ASSESSMENT OF ICT EXPENDITURE

A.1 AER Guidelines for non-network ICT assessment

A.1.1 Assessment of non-network ICT capex

451. The scope of our assessment includes ex ante assessment of non-network ICT.

452. The AER's 2019 non-network ICT capex assessment approach guideline ('ICT assessment guideline') is relevant to CP, PAL and UE's expenditure proposal.

453. The AER requires DNSPs to allocate their non-recurrent ICT expenditures into the three subcategories for which it applies different assessment approaches, as described below:[137]

Maintaining existing services, functionalities, capability and/or market benefits

454. The AER states that:

> *Given that these expenditures are related to maintaining existing service, we note that it will not always be the case that the investment will have a positive NPV. As such, it is reasonable to choose the least negative NPV option from a range of feasible options including the counterfactual.'* [138] *We consider that such investments should be justified on the basis of a business case, where the business case considers possible multiple timing and scope options of the investments (to demonstrate prudency) and options for alternative systems and service providers (to demonstrate efficiency). The assessment methodology would also give regard to the past expenditure in this subcategory.*[139]

Complying with new / altered regulatory obligations / requirements

455. The AER states that:

> *It is likely that for such investments, the costs will exceed the measurable benefits and as such, the least cost option will likely be reasonably acceptable in regard to the NER expenditure criteria. Therefore the assessment of these expenditures is similar to subcategory one. Should there be options to achieve compliance through the use of external service provides [sic], the costs and merits of these should be compared.'*[140]

New or expanded ICT capability, functions and services

456. The AER states that:

> *We consider that these expenditures require justification through demonstrating benefits exceed costs (positive NPV). We will make our assessment therefore through assessing the cost-benefit analysis. Where benefits exceed costs consideration should also be given to self-funding of the investment.*
>
> *For each subcategory of non-recurrent expenditure, we note that there may be cases where the highest NPV option is not chosen. In these cases, where either the chosen option achieves benefits that are qualitative or intangible, we would expect evidence to*

137 In cases where programs/projects cover multiple categories of expenditure, the distributor is expected to apportion costs from individual components across multiple categories to reflect the nature of the work undertaken.

138 The only exception will be where the business can demonstrate that any unquantified/intangible benefits of an option can support the decision to not choose the highest NPV option.

139 AER, Non-network ICT capex assessment approach, November 2019. Page 11.

140 AER, Non-network ICT capex assessment approach, November 2019. Page 11.

support the qualitative assumptions. We consider the evidence provided must be commensurate with the cost difference between the chosen and highest NPV option.

We also note that where non-recurrent projects either lead to or become recurrent expenditures in the future, this needs to be identified in the supporting business case and accounted for in any financial analysis undertaken to support the investment.[141]

A.1.2 Assessment of opex step changes

457. Our scope includes assessment of Jemena's proposed cyber security opex step changes. Section 2.2 of the AER's Expenditure Forecast Assessment Guideline for Electricity Distribution outlines its general approach for assessing opex step changes and which we have followed. In summary:

- The AER separately assesses the prudency and efficiency of forecast cost increases or decreases from new regulatory obligations and capex/opex trade-offs;
- For capex/opex trade-off step changes, the emphasis is on establishing whether it is prudent and efficient to substitute opex for capex; and
- For step changes arising from new regulatory obligations, the emphasis is on:
  - whether there is a binding change in regulatory obligations that affects the efficient forecast opex and when the change occurred, and
  - what options were considered and whether the selected option is an efficient option.[142]

141 AER, Non-network ICT capex assessment approach, November 2019. Page 12.

142 AER, Expenditure Forecast Assessment Guideline for Electricity Distribution. Page 11.