



# Cloud migration opex step change

Revised Regulatory Proposal 2024-29

30 November 2023

PowerWater 

# Contents

---

<b>1. Background</b>	<b>1</b>
1.1 Our Initial Regulatory Proposal	1
1.2 AER’s draft determination	1
<b>2. Revised Regulatory Proposal</b>	<b>3</b>
2.1 Response to draft determination	3
2.2 Identification of business need	3
2.3 Selection of the efficient option	6
2.4 Basis of forecast opex	8
<b>3. Summary of proposed expenditure</b>	<b>11</b>
3.1 Basis of cost estimate	11
3.2 Additional supporting evidence	12
<b>Appendix A Response to AER questions</b>	<b>A-1</b>

## List of tables

Table 2.1: Cloud migration opex step change attributable to M2C, \$millions 2024	9
Table 3.1: Cloud migration - opex step change, \$million 2024	11
Table 3.2: Cloud migration opex step change, \$million 2024	11
[REDACTED]	12

## List of figures

[REDACTED]	4
[REDACTED]	5
Figure 2.3: Current versus future state for cloud services	6
[REDACTED]	7
[REDACTED]	8
Figure 2.6: Integration Platform Build Plan on a Page	10

# 1. Background

In this document, we propose that a prudent and efficient opex step change is required for cloud migration consistent with the objectives and criteria in the *National Electricity Rules (Northern Territory) (NT NER)*.

All dollar values in this attachment are in real 2024 terms unless otherwise stated.

## 1.1 Our Initial Regulatory Proposal

Our enterprise-wide ICT strategy does not include migration to cloud-based methodologies. This is because for an organisation of Power and Water's relatively modest scale, isolation, and HR practices it is likely to be less cost effective for Power and Water to adopt broad cloud-based solutions.

However, an increasing number of software application vendors only offer cloud-based services. While most of our ICT capabilities are hosted on-premises, there are some instances where a cloud service is the more prudent option (due to the need for ongoing vendor support), or is likely to become the only option in the near future. A step change is therefore necessary to establish a small cloud presence.

In our Initial Regulatory Proposal (IRP) we included a cloud based opex step change of \$4.0 million (real 2024) after allocation to SCS based on adopting the following approach:

- On-premise methodologies where available and cost-effective (e.g. replacing/upgrading existing on-premise infrastructure with on-premise infrastructure when the former is at end-of-life).
- Cloud methodologies only where an on-premise solution is not feasible.

Our preferred option was to only migrate to digital cloud where necessary and prudent to do so, thus only requiring a small cloud footprint. For the systems for which this cloud migration opex step change applied, the migration to a cloud solution was the only option offered by the vendor following market engagement. As such the small opex required to manage and maintain these systems was required in addition to the efficient level of opex in our base.

## 1.2 AER's draft determination

In its draft determination, the AER did not accept our proposed operating expenditure step change for cloud migration.

The AER did not include an amount for cloud migration as it did not have sufficient supporting information to assess our proposed forecast. The AER stated:

*We consider that PWC has not provided sufficient supporting information and documentation to enable us to reasonably establish the prudence and efficiency of the proposed cloud migration step change. In particular, while PWC outlined the replacement of its RMS, we do not have a clear understanding of which other IT systems, or components of systems, PWC believes are at 'end of life' or the appropriate documentation to establish the basis for these determinations. We also do not have sufficient information to assess the efficiency of the proposed cloud-related costs.<sup>1</sup>*

---

<sup>1</sup> AER, Attachment 5 Capital expenditure | Draft Decision - Power and Water Corporation Distribution determination 2024-29

The AER accepted the basis for replacing critical IT applications that are reaching end-of-life or needing upgrades with cloud-based services where there is an efficient capex-opex trade-off, as evidenced in recent decisions for other networks.

The AER provided guidance on the further information to be included in our revised proposal, and which we have included in this attachment. This included:

- a description mapping which current IT systems (or components of current systems) Power and Water is proposing to replace with the IT capabilities listed in its cloud migration step change.
- an explanation of why these existing systems need replacing, including evidence from current system suppliers that the systems are at end of life or no longer supported (i.e., vendor road maps or other advice, including forecast timeframes).
- evidence of the options Power and Water considered to replace these systems, including costings of options, net present value and benefit-cost analysis that clearly demonstrated the preferred option is efficient. This analysis should also clearly set out the capital expenditure that will be avoided as a result of the investment in the cloud solutions.
- details of how Power and Water developed the cost estimates for each component of the proposed step change, including whether it was based on a competitive tendering process, other external advice or internal estimates.

## 2. Revised Regulatory Proposal

Our revised regulatory proposal focusses on the additional information requested by the AER. Appendix A provides a table setting out our response to AER specific requests received for the cloud migration opex step change.

### 2.1 Response to draft determination

Our revised regulatory proposal is based on maintaining a minimum cloud footprint, consistent with adoption of contemporary systems that replaced existing on-premise solutions, namely the Retail Management System (RMS). The RMS is a legacy, obsolete and out of date system that did not meet our compliance obligations. The selection of the solutions formed the basis of our Meter to Cash (M2C) project.

Power and Water is not committed to a full cloud migration for all systems and will assess options as part its normal governance process.

This cloud migration proposal has been revised to reflect the actual nature of the investment. Power and Water is taking a pragmatic approach to assessing cloud investments. Hence the revised submission deals with the decision to move the RMS to the cloud and establish market services to reduce the system barrier of entry to other energy market participants. An impact of moving to the cloud is the additional investment required to ensure Power and Water hosted (non-cloud) systems are integrated to facilitate the required business process. As a result, additional cloud related cost have been forecast to ensure this occurs.

The selection of these systems followed a robust business case and market tested process. The cloud-based solution were the only options provided to Power and Water.

We have updated our proposed opex forecast based on new information provided from our procurement process for the M2C project. We will absorb the change in costs associated with our new call management system for the next regulatory period and have removed these costs from the proposed opex step change since our initial proposal. This has resulted in reducing the total cost to Power and Water from \$8.0 million to \$6.6 million (real 2024) over the next regulatory period.

### 2.2 Identification of business need

#### 2.2.1 Legacy systems were out of support and did not meet our compliance obligations

The RMS was originally implemented in 2004. At the time of the original assessment, it was on extended support, received no security or functionality updates. This resulted in customisation of the existing market gateway and other regulatory and business changes that no longer met the business requirements, nor was it aligned with contemporary practice.

Additionally, as RMS provided the outcomes of a Meter Asset and Meter Data Management System for billing and retail participant services, this system functionality was required to be uplifted to comply with Chapter 7A of the NT NER and provide a more efficient way of managing metering data and other metering related activities such as energisations/de-energisations, replacements and tariff conversions.

The RMS was required to be replaced.

The call centre management was historically managed from three separate systems and were obsolete and did not provide the telecommunication backbone to support the customer fault management process.

## 2.2.2 Power and Water has undertaken extensive assessment

Power and Water has undertaken a significant body of analysis prior to consideration of the business case, to inform a preferred solution. Due to the current version of RMS not being supported, any development continues to be bespoke to Power and Water and not in the main Velocity product. This will also add complexity and cost to managing the solution on an ongoing basis.

For example, the assessment led by KPMG and from which the capability uplift program (Operating Model) was formed concluded that for Meter to cash:<sup>2</sup>

- The absence of a formal Meter Data Management System (MDMS) means that a large number of metering processes are manual.
- No systematic process to support meter data validation, editing and estimation creating compliance issues in meeting Chapter 7A obligations.
- The billing system is at end of life with limited functionality and integration to associated systems.
- A significant amount of manual effort is required to support billing. Issues with billing accuracy / disputes have been identified as contributing to revenue leakage.

[Redacted]

[Redacted]

[Redacted]

- Lack of fit-for-purpose systems to support business functions, for example, Customer Relationship and Meter Data Management functionalities.

### 2.2.3 The Meter to Cash project has an approved business case

In 2021, a business case approved the capability uplift Meter to Cash project business case for delivery of the Meter to Cash project, being tranche 1 of the capability uplift program (operating Model). This followed project gating and approvals in accordance with the capital project government framework, commencing in 2019 with the business needs identified (BNI).

The business case states:

*PWC has delayed investment in core systems over an extended time. Systems have not kept pace with the evolving needs of the business, the customer base, or the broader Power and Utilities sector. Continued delays in investment will result in an unacceptable risk profile exposing PWC to regulatory penalties, increased cost to service, reputational damage, and lead to further degradation in the performance of systems and core business operations.*

The project was included in the capital allowance for the current regulatory period.

The results of the assessment were summarised listing the components that are changing and benefits to the services provided to the market.

Figure 2.3: Current versus future state for cloud services

PWC “As is”		PWC “To be”		General Comments
Gentrack Retail Management System (RMS)	<ul style="list-style-type: none"> <li>• <b>Non-compliant</b></li> <li>• Unsupported</li> <li>• Extreme failure risk</li> <li>• Error prone</li> </ul>	Gentrack Velocity cloud solution (new)	<ul style="list-style-type: none"> <li>• <b>Compliant</b></li> <li>• Managed service</li> <li>• Automated</li> <li>• Limits manual errors</li> </ul>	<ul style="list-style-type: none"> <li>• Existing RMS has an “extreme” corporate risk profile for failure with board level exposure</li> </ul>
Market Gateway PWC	<ul style="list-style-type: none"> <li>• Limited capability</li> <li>• Highly customized</li> <li>• Limited scalability</li> </ul>	Gentrack Velocity cloud solution (new)	<ul style="list-style-type: none"> <li>• AEMO supported</li> <li>• Automated</li> <li>• Scalable</li> </ul>	<ul style="list-style-type: none"> <li>• Existing market gateway is not fit-for-purpose and cannot handle the uplift in data from Smart Meter roll-out</li> </ul>
Integration “point-to-point” hosted on-premise	<ul style="list-style-type: none"> <li>• Vender dependent</li> <li>• High change cost</li> </ul>	Cloud middleware (new)	<ul style="list-style-type: none"> <li>• Integrates core &amp; non-core systems</li> <li>• Future proofed</li> </ul>	<ul style="list-style-type: none"> <li>• Enables PWC next projects: Physical to Financials / Asset Management / Service Delivery &amp; future ICT projects</li> </ul>
Business Intelligence environment – hosted on-premise	<ul style="list-style-type: none"> <li>• High maintenance cost</li> <li>• Error prone</li> </ul>	Cloud Data Lake (new)	<ul style="list-style-type: none"> <li>• Low change effort</li> <li>• Hi usability</li> <li>• Stable &amp; reliable</li> </ul>	<ul style="list-style-type: none"> <li>• Highly flexible</li> <li>• Business friendly</li> <li>• Low maintenance</li> </ul>

DCDD “As is”		DCDD “To be”		General Comments
Cloud Services	<ul style="list-style-type: none"> <li>• Limited support</li> <li>• Limited capability</li> </ul>	Cloud Services	<ul style="list-style-type: none"> <li>• Highly supported</li> <li>• High capability</li> </ul>	<ul style="list-style-type: none"> <li>• PWC is working closely with DCDD to uplift NTG capability</li> </ul>
Security	<ul style="list-style-type: none"> <li>• Internally managed</li> </ul>	Security	<ul style="list-style-type: none"> <li>• Globally supported</li> </ul>	<ul style="list-style-type: none"> <li>• PWC is working with DCDD to align on cloud security</li> </ul>

## 2.3 Selection of the efficient option

### 2.3.1 How was the solution selected

Power and Water assessed several system solutions to understand the complexity of implementation and the overall fit in relation to its and Northern Territory Government’s (NTG’s) hosted systems. This was done via the Operating Model program in which an architectural assessment was completed.

The Meter to Cash project undertook a full commercial tender process, including:

- Requirements Development – following an open market tender process in 2019, KPMG was engaged to develop key artefacts for the broader program and commercial tender.
- Tender Process – in mid-2020 released an EOI which received 20 responses. Of the responses four were invited to submit proposals of which 2 formally submitted. Based on the findings from the EOI and preliminary business case, Power and Water selected Gentrack as the replacement for the RMS. Both RFP responses (Accenture and a consortium of DXC and DB Results) proposed software as a service solutions leveraging “Gentrack Velocity” as the RMS replacement and MDMS, and MS Azure as the Integration middleware. Enterprise architecture confirmed the technology selection process which was aligned to the ICT Strategy and technology roadmap.
- Revised Delivery Model – In late 2020, Power and Water decided to adopt an “internal system integrator” delivery model and embarked on Proof of Concept to validate the Gentrack solution and Azure integration platform.
- Direct Negotiation with Gentrack – following the proof-of-concept activity with Gentrack in mid-2021, Power and Water- conducted a direct negotiation with Gentrack with a view to reaching agreement for Gentrack to implement its solution to replace the RMS.



- **Negotiation Outcome** – the original estimate for implementation of the Gentrack solution was calculated based on the pricing submitted by Gentrack in response to the December 2020 request for procurement (RFP) process with the cloud licensing, hosting and support costs for 5 years post go-live at \$6.2 million.
- **Final Business Case** – a final business case for delivery of the Capability Uplift Meter to Cash Project was approved by the PWC Board in November 2021. Delivery of the project commenced in January 2022. In this business case, estimates for support services for MS Azure and Integration Services were included.
- **Azure Managed Service** – in March 2022 options were considered which led to an open market tender process that commenced in November 2022 and concluded in December 2022.
- **Managed Service Negotiations** – negotiations are continuing with selected provider with completion expected October 2023. Final pricing is expected to represent an efficient cost for services resulting from the open market tender process.

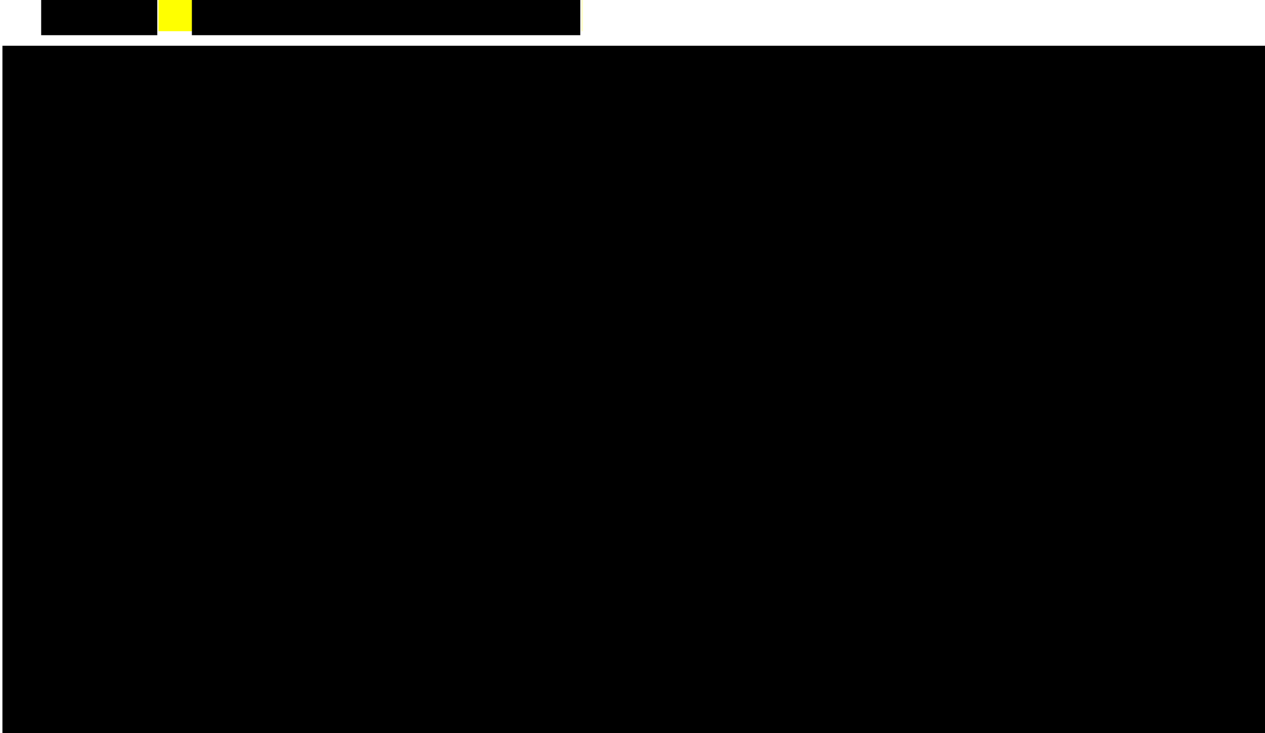
This subsequently resulted in the de-scoping of the Physical to Financial (P2F) component of the solution.

[Redacted]

[Redacted]

### 2.3.2 Implications of a cloud-based solution

The Gentrack product roadmaps lays out Velocity’s evolution to a SAAS offering from our current hosted capability. It was therefore critical that we maintained system security, support and compliance releases in line with other customers to maximise the benefit of the product.



A primary consideration in the selection of cloud-based technologies was to limit point-to-point integrations and futureproof for the broader Capability Uplift Project which replaces/renews aged technology and error prone systems and in particular, Financial Management, Asset Management, and Service Delivery systems/capabilities.

The selection of Gentrack cloud requires additional cloud-based solutions these being the Azure middleware integration platform and Azure landing and monitoring services. The Azure integration was an extension of the existing Microsoft and monitoring services were an extension of the existing NTG managed services contract under the Department of Corporate and Digital Development (DCDD). The cloud solution will also incur additional data transfers costs and this has been reflected in the proposal.

The MS Azure cloud-based middleware provides the capability for not only the Power and Water Operating Model Program, but also enables future broader business integration capabilities as more and more NT companies transition to cloud technologies.

A further key consideration is capability gaps in the Northern Territory, cloud-based technologies has enabled PWC to partner with providers that enable continuity of service to our customers.

## 2.4 Basis of forecast opex

### 2.4.1 Summary of included costs

The proposed opex step change is attributed exclusively to the cloud-based services to support the Meter to Cash project that were not included in the base year of FY22. As shown in Table 2.1, the costs have been updated to reflect updated estimates of the cloud-based charges.

Table 2.1: Cloud migration opex step change attributable to M2C, \$millions 2024

Item	Description	Estimate \$m (FY24)
Azure managed services	Managed Services Cost to support and maintain Azure Cloud Platform and Integration Services Application. Service includes management of PaaS platform, networking, security, application management, minor bug fixes etc.	█
Azure platform cost (Microsoft)	Microsoft Azure Bill to consume Azure Cloud services for M2C program. DCDD manages the EA with Microsoft and will charge back PWC on a monthly/quarterly basis	█
Azure data storage charges	Microsoft Azure Bill to store additional data for a long term retention for compliance and regulatory requirements. This data includes customers call recordings.	█
Do Forms save and synch services	Additional licence to support Works Management function as part of the M2C project. This additional licence will improve security posture while integrating Gentrack Velocity with PWC Field Services partners	█
DCDD managed Services	DCDD (Department of Corporate and Digital Development) provide Core ICT services to PWC and other government agencies. These services include Network, Security, Identity, Remote Access, Azure Landing Zone etc.	█
Addressify	Addressify API for address validation.	█
<b>Total</b>		█

### 2.4.2 Consideration of additional options

In 2021, Power and Water requested Gentrack provide a comparative analysis of Gentrack hosted model (within the AWS data centre in Sydney) and Power and Water taking the Gentrack’s Customer Billing application and hosting (on-premise) in its data centre (say NT Government Centre).

When considering the two options the SAAS option was deemed the appropriate fit as it reduced the complexity of future upgrades and system enhancements.

### 2.4.3 Assessment was based primarily on compliance

The Meter to Cash project was overall NPV negative as depicted in the Meter to Cash business case and noting the project main driver was external compliance obligations under Chapter 7A of the NT NER.

Cloud based Azure platform was the most fit for purpose as identified in the Tender process for the highly complex project. The MS Azure costings were not assessed separately as it formed part of the full integrated solution. The MS Azure middleware technology architecturally enabled the new Gentrack RMS, MDMS, and external facing integrations while also providing the architectural runway for the future Roadmap.

## 2.4.4 Current project status

The Meter to Cash project is well advanced with the progression of cloud capabilities both from our vendor RMS replacement to the Gentrack Velocity product and through our new MS Azure integration layer.

The Azure Platform is fully operational with finalisation of minor outstanding activities to complete by 30 September 2023. Integrations related to Meter to Cash functional capabilities will be progressively completed during November 2023 with System E2E testing running in parallel.

In addition, we expect to finalise our Azure managed service commercial engagement by December 2023.

Figure 2.6: Integration Platform Build Plan on a Page

ID	% Complete	Jira ID	Task Name	Duration	Start	Finish
1	65%		Capability Uplift Project	1052 days	14/07/20	28/10/24
7	65%		Project Investment Delivery Phase	859 days	12/04/21	28/10/24
326	65%		Execution Phase	837 days	12/05/21	28/10/24
327	65%		Meter to Cash	837 days	12/05/21	28/10/24
328	80%		Project Deliverables	787 days	30/07/21	28/10/24
335	100%		Cloud, Integration & Environment	39 days	9/05/22	1/07/22
336	100%		Deliverable: Environment Management Strategy	39 days	9/05/22	1/07/22
455	54%		Solution Design Document Development	548 days	25/01/22	29/04/24
456	100%		Deliverable: Cloud Platform Solution Design	74 days	25/01/22	13/05/22
457	100%		Deliverable: DevOps detailed design	21 days	11/04/22	13/05/22
964	68%		Cloud platform and Integration Build (Blocks C-G)	623 days	14/03/22	30/09/24
965	90%	M2C-65	Cloud Platform Build	383 days	14/03/22	29/09/23
966	100%	M2C-71	Azure Platform Design	28 days	14/03/22	22/04/22
967	100%	M2C-72	Devops Design	65 days	28/03/22	1/07/22
968	100%	M2C-939	Azure Platform Build	112 days	3/05/22	7/10/22
969	100%	M2C-5575	Azure Infra - DEV - Non Prod Subscription Dev Environment	15 days	20/06/22	8/07/22
970	100%	M2C-5576	Azure Infra - DEV - Integrate Azure DevOps with Non-Prod Subscription	15 days	20/06/22	8/07/22
971	100%	M2C-5577	Azure Infra - DEV - Build DEV Azure Infrastructure Resources	15 days	20/06/22	8/07/22
972	100%	M2C-5578	Azure Infra - DEV - Deliver and support DEV environment	49 days	18/07/22	23/09/22
973	100%	M2C-5584	Azure Infra - DEV - Build DEV Azure Integration Resources	29 days	18/07/22	26/08/22
974	100%	M2C-5579	Azure Infra - SIT - Non Prod Subscription SIT Environment	20 days	29/08/22	23/09/22
975	100%	M2C-5580	Azure Infra - SIT - Deliver and support SIT environment	20 days	29/08/22	23/09/22
976	100%	M2C-5581	Azure Infra - UAT - Non Prod Subscription UAT Environment	70 days	26/09/22	17/01/23
977	100%	M2C-5582	Azure Infra - UAT - Deliver and support UAT environment	79 days	26/09/22	31/01/23
978	100%	M2C-5583	Azure Infra - UAT - Provide non production environment support	79 days	26/09/22	31/01/23
979	100%	M2C-7610	Azure Operational Services Build	84 days	6/09/22	17/01/23
980	81%	M2C-7611	Azure Hybrid Connection	169 days	22/12/22	6/09/23
981	79%	M2C-8661	Azure Security Posture Assessment	238 days	11/10/22	29/09/23
982	85%	M2C-9608	Managed File Transfer	210 days	26/10/22	6/09/23
983	78%	M2C-18779	Azure Infra - Enhancements and Platform Maintenance	146 days	10/02/23	6/09/23

The Meter to Cash outcomes will be delivered in September of 2024 noting the regulatory compliance date for the NT NER Chapter 7A obligations is being reset to March of 2025.

No other internal Power and Water dependencies outside of Meter to Cash but external dependencies with NT retailer readiness is a primary factor for project go-live in September 2024. Power and Water is working closely with external stakeholders and supporting technical and business readiness activities.

Cloud technologies implemented in Power and Water represent a significant capability not only for the primary enabling project Meter to Cash, but also future enablers that will be implemented in the 2024-29 regulatory period. This step change is in the best interest of Power and Water and our Northern Territory customers. Through this step change, we have also uplifted the Northern Territory Government future cloud strategy through our direct engagement with Department of Corporate and Digital Development.

Impact to operation will see a significant uplift in capability, reductions in exception handling and accurate reporting and automation. In addition, future projects are not expected to require material opex for ongoing operations.

### 3. Summary of proposed expenditure

Table 3.1 below sets out the proposed operating expenditure step change for cloud migration. The basis for the cost estimate and evidence of the actual costs being incurred by Power and Water is described in sections 3.1 and 3.2.

Table 3.1: Cloud migration - opex step change, \$million 2024

	2024-25	2025-26	2026-27	2027-28	2028-29	Total
Cloud-based services to support Azure instance for M2C project	1.3	1.3	1.3	1.3	1.3	6.6
Allocation to SCS	0.7	0.7	0.7	0.7	0.7	3.3

#### 3.1 Basis of cost estimate

The costs for cloud migration are based on actual invoices and vendor information, where applicable, the estimated volume of services required over the period. The costs comprise management, data and application support fees plus licensing and subscription fees.

Table 3.2: Cloud migration opex step change, \$million 2024

Source of cost	Basis for estimate (including any assumptions and calculation methods applied)	Cost estimate
Azure Managed Services	A competitive tender process has been undertaken for these services. The updated estimate is based on vendor submission pricing of \$667,000 per annum. Contract expected to be finalised by November 2023	█
Azure Platform Cost (Microsoft)	Azure Platform cost is based on a Microsoft-provided cost calculator, at <a href="https://azure.microsoft.com/en-au/pricing/calculator">https://azure.microsoft.com/en-au/pricing/calculator</a> . Power and Water leverages the Enterprise Agreement between DCDD and Microsoft, and this \$480,000 per annum will be a chargeback from DCDD based on our monthly consumption of Microsoft Azure services. This cost may vary monthly based on the consumption of services, but based on the performance and compute requirement, we expect no significant variance each month.	█
Azure Data Storage Charges	Azure Platform cost is based on a Microsoft-provided cost calculator, at <a href="https://azure.microsoft.com/en-au/pricing/calculator">https://azure.microsoft.com/en-au/pricing/calculator</a> . Cost estimated at \$10,000 per annum for up to 25TB of storage.	█
Do Forms Save and Sync Services	Actual Cost based on Licence of \$1,495 USD per annum	█

Source of cost	Basis for estimate (including any assumptions and calculation methods applied)	Cost estimate
DCDD Managed Services	<p>DCDD Managed Services cost includes the monthly charge of Network Services (Express Route) between DCDD and Azure, and Managed Services charges to manage the components of Azure Management, which are in DCDD control, e.g., Azure Landing Zone, Identity, and Security.</p> <p>We have estimated this cost based on two components:</p> <ul style="list-style-type: none"> <li>- Express Route Infra (\$13,000 per annum)</li> <li>- DCDD resource cost (\$150,000 per annum)</li> </ul> <p>The DCDD resource cost reflects an estimate of the capability uplift required to manage the services, based on industry rates. The cost will be finalised with DCDD by the end of 2023 calendar year.</p>	
Addressify	Actual Cost based on Licence of \$4,400 per annum	
<b>Total</b>		

### 3.2 Additional supporting evidence

The following attachments provide evidence of the costs that have been relied on to determine the opex step change forecast for the next regulatory period.

[Redacted]

Document title	Description
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]

## Appendix A

# Response to AER questions

Table A.1: List of AER questions received during review of IRP

AER question	How we have responded
<p>Power and Water noted in IR018 that ‘the majority of the cloud hosting and data services included in the proposed cloud migration Opex step change relate to our Meter to Cash (M2C) project’. Please provide a description which clearly describes and maps which current IT systems or components of current systems are being replaced (i.e. the existing RMS system and some other system(s), and with which IT capabilities listed in the Cloud step change.</p>	<p>Refer to section 2, specifically section 2.3 business need.</p>
<p>Please provide a project plan and timeline for the cloud migration, which is the subject of the step change, including progress to date.</p>	<p>Refer to section 2, specifically section 2.5 basis for forecast opex.</p>
<p>Please confirm that references to the RMS are to a revenue management system and provide a description of the current system’s functionality and what if any additional functionality will be provided by the new system being implemented.</p>	<p>References to RMS are to the legacy Retail Management System. Refer to section 2, specifically section 2.3 business need for a description of the functionality required.</p>
<p>Please provide an updated business case for the proposed cloud migration step change. The business case should include:</p> <p>a. The problem and business need:</p> <ol style="list-style-type: none"> <li>i. why the existing systems (identified above) subject to the cloud migration step change need replacing</li> <li>ii. evidence from current system suppliers that the identified systems are end of life (i.e. vendor road maps or other advice stating why the existing RMS or other systems are at end of life, including forecast timeframes)</li> <li>iii. evidence from current system support suppliers that support for identified systems is no longer available (i.e. vendor road maps or other advice stating why support is no longer available to the existing RMS or other systems, including forecast timeframes)</li> <li>iv. consumer engagement on this replacement, if any</li> </ol> <p>b. Listing and analysis of options available to address the business need, including:</p> <ol style="list-style-type: none"> <li>i. any assumptions included in the analysis, including evidence where PWC states a specific capability can only be provided by cloud (i.e. a vendor road maps or other advice stating why this is the case)</li> <li>ii. benefits and risks of the options</li> <li>iii. costs, in Excel files with relevant calculations and sources all provided</li> <li>iv. cost benefit analysis – net present value (NPV) in Excel file</li> <li>v. timeline for delivery and assessment of PWC’s capability to deliver the projects outcomes</li> <li>vi. any dependencies with other capex and / or opex</li> </ol>	<p>Refer to section 2, specifically section 2.3 for business need, section 2.4 for options analysis and section 2.5 for basis for forecast opex.</p> <p>We have also included the Meter to Cash (M2C) business case which outlines the benefits and risks of options considered at that time for an integrated solution, including provision for the MS Azure integration platform.</p> <p>Whilst the forecast opex relates to the two systems described in this submission, the architecture provided by the MS Azure integration platform is a technology enabler for the series of projects articulated in the Capability Uplift (operating Model) RBC.</p>



AER question	How we have responded
<p>vii. impact of the replacement on operations</p> <p>c. Final recommendation - based on the information presented.</p> <p>IR011 response includes file PWC IR#011 - Q1.5 - Step changes Model.xlsx from which the table below was extracted from the Cloud migration sheet.</p> <p>a. For each IT capability in the table (rows 39 to 46 of the spreadsheet), please provide details of how PWC developed the costs estimates in columns K to R, including:</p> <ol style="list-style-type: none"> <li>i. Where a competitive tendering process was undertaken, please describe the tender process and provide documentation and supporting explanations that support the cost estimates from this process. Please provide supporting documentation which clearly sets out how the inputs from the competitive tendering process have been used.</li> <li>ii. Where a competitive process was not used, please describe how the estimate was constructed, including the basis for all calculations, sources of inputs and assumptions. Please provide supporting spreadsheets which clearly set out the basis for the estimate using these calculations, inputs and assumptions.</li> </ol>	<p>Refer to section 2, specifically section 2.5 for basis for forecast opex.</p> <p>Please also refer to the updated version of the step change model submitted with the RRP (Attachment 5.4).</p>
<p>File PWC IR#011 - Q1.5 - Step changes Model.xlsx, Cloud Migration tab K39:K46 indicates there was \$0.63 million (prior to CAM allocations) opex included in base year. Yet in the calculation of the step change amounts only \$0.5 million pa of this was removed.</p> <p>a. Please explain why the full \$0.63 million should not be removed in calculating the step change?</p> <p>b. Please provide evidence of the actual costs included in base opex, for example via copies of invoices for the services purchased.</p>	<p>Refer to section 2, specifically section 2.4 for basis for the revised forecast opex in the RRP, and which has included the decision to absorb changes in the cost of providing call management services.</p> <p>Please also refer to the updated version of the step changes model submitted with the RRP (Attachment 5.4).</p> <p>The historical information was based on estimates only and did not include all opex line items.</p> <p>We undertook adjustments at the time of the IRP at a line-item level where costs were to be incurred for <u>new</u> services. This is where we had most confidence in the data. We did this in the knowledge that there are also services where costs would increase and decrease over the period, and that any resulting increases would be absorbed by Power and Water.</p>

Table A.2: Information requested by the AER in the draft determination

Information requested by the AER	How we have responded
<p>A description mapping which current IT systems (or components of current systems) PWC is proposing to replace with the IT capabilities listed in its cloud migration step change.</p>	<p>Refer to section 2, specifically section 2.2 for discussion of the business need including discussion of the RMS.</p>
<p>An explanation of why these existing systems need replacing, including evidence from current system suppliers that the systems are end of life or no longer supported (i.e. vendor road maps or other advice, including forecast timeframes).</p>	<p>Refer to section 2, specifically section 2.2 for discussion of the business need and specifically why we considered the existing RMS was required to be replaced.</p>
<p>Evidence of the options PWC considered to replace these systems, including costings of options, net present value and benefit-cost analysis that clearly demonstrated the preferred option is efficient. This analysis should also clearly set out the capital expenditure that will be avoided as a result of the investment in the cloud solutions.</p>	<p>Refer to section 2, specifically section 2.3 for discussion of the options considered by Power and Water.</p>
<p>Details of how PWC developed the cost estimates for each component of the proposed step change, including whether based on a competitive tendering process, other external advice or internal estimates.</p>	<p>Refer to section 2, specifically section 2.4 for basis for the revised forecast opex in the RRP, and which has included the decision to absorb changes in the cost of providing call management services.</p> <p>Please also refer to the updated version of the step changes model submitted with the RRP (Attachment 5.4).</p>

## Contact

Australia: 1800 245 092

Overseas: +61 8 8923 4681

[powerwater.com.au](http://powerwater.com.au)

**PowerWater**