

# ICT investment program

## 10.07.07 Post-implementation reviews summary (Top 10)

### 1. Background

This paper summarises the post-implementation review (PIR) outcomes for the following completed ICT projects:

- Power of Choice (Phase 1)
- ERP Data Readiness
- MuleSoft Migration
- Cyber Security Phase 1
- AEMO Rule Change 5 Minute Settlements
- Provisioning and Rationalisation Program
- Network Uplift (SD-WAN and Wi-Fi)
- PowerOn Mobile
- Enterprise Resource Planning
- eWorks.

See Section 2 (page 2) for a tabular breakdown of the initiative details for each project, including budget, schedule, and benefits enablement performance.

## 2. Project PIR summaries

### Power of Choice (Phase 1) project

#### Project details

<b>Project description</b>	<p>Substantial reforms to the National Electricity Market (NEM) were initiated following recommendations from the Australian Energy Market Commission (AEMC) Power of Choice review for state and federal governments. On 26 November 2015, the AEMC published its final determination on expanding competition in metering and related services. The determination made significant changes to the National Electricity Rules (NER) and National Energy Retail Rules (NERR) relating to the provision of metering services. The reform's key elements related to:</p> <ul style="list-style-type: none"> <li>• distribution – network pricing, demand management, embedded generation and embedded networks</li> <li>• metering – competition in metering, communication standards, shared market protocol, new and amended business-to-business (B2B) transactions, and multiple trading relationships</li> <li>• consumer information – customer access to energy consumption, embedded network customer switching, and improved demand-side participation information.</li> </ul> <p>Essential Energy's Power of Choice program identified and implemented process, system and organisational changes required to meet the mandated implementation timeframe. Essential Energy established a two-phase approach.</p> <ul style="list-style-type: none"> <li>• Phase 1 – Achieve minimal viable regulatory compliance to meet the critical go-live deadline set for 1/12/2017.</li> <li>• Phase 2 – Performance improvements and stabilisation. Scope was subsequently limited to stabilisation as it was found that strategic decisions on the future of existing systems needed to be made.</li> </ul>
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#### Project budget

Budget dimension	Capex	Opex	Totex
Project budget (baseline)	\$14,061,000	\$563,000	\$14,624,000
Project budget (last approved)	\$10,653,000	\$1,030,000	\$11,684,000
Project actuals (including commitments)	\$10,558,000	\$966,000	\$11,523,000

#### Project schedule

Start date	Planned go-live	Actual go-live	Planned finish date	Actual finish date	Variance in business days (go-live)	Number of schedule variations
2/2/2017	1/12/2017	4/12/2017	22/01/2018	22/01/2018	3	1

## Project benefits

Summary of key benefits	Benefit Achieved?	Benefit type	Last realisation date
Regulatory compliance	Yes	Regulatory compliance	1/12/2017
Automation of processes	No, removed from scope	Enabling	N/A
System stabilisation	Yes	Enabling	20/07/2018
New capability to improve network utilisation and monitor supply status	No, due to unavailability of required meter capability	Enabling	N/A
Improved cash flow	No, due to unavailability of required meter capability	Financial	N/A

# ERP Data Readiness project

## Project details

<b>Project description</b>	<p>The ERP Data Readiness project mobilised in December 2019 to improve data management, with a focus on data quality, data landscape analysis and preparing data to be migrated to a new enterprise resource planning (ERP) system.</p> <p>The focus on these three key areas led the project to target multiple systems for data cleansing. This delivered additional value for both business-as-usual activity and future data migrations and system integrations (for example, with enterprise asset management systems).</p> <p>In addition, Essential Energy completed system retirement plans to consolidate its digital landscape. This provides a clear path to decommissioning legacy platforms (such as PeopleSoft) and to capture benefits from reduced support costs. The project re-platformed the data migration toolset Foundry to the Azure cloud so it can be used in future projects. This activity will facilitate the decommissioning of the Microsoft SQL platform.</p>
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## Project budget

Budget dimension	Capex	Opex	Totex
Project budget (baseline)	\$0	\$10,600,000	\$10,600,000
Project budget (last approved)	\$0	\$10,400,000	\$10,400,000
Project actuals (including commitments)	\$0	\$9,200,000	\$9,200,000

## Project schedule

Start date	Planned go-live	Actual go-live	Planned finish date	Actual finish date	Variance in business days (go-live)	Number of schedule variations
1/12/2019	28/05/2021	16/08/2021	31/12/2021	31/10/2021	56	2

## Project benefits

Summary of key benefits	Benefits achieved?	Benefit type	Last realisation date
Improved data accessibility	Yes	Enabling	20/11/2021
Improved data quality	Yes	Enabling	20/11/2021
Improved data processes	Yes	Enabling	20/11/2021
Culture and maturity uplift for data	Partially achieved	Qualitative	20/11/2021

# MuleSoft Migration project

## Project details

<b>Project description</b>	<p>The MuleSoft Migration project delivered several results:</p> <ul style="list-style-type: none"><li>• Essential Energy deployed MuleSoft, a modern, agile, dynamic, scalable enterprise integration system that provides software as a service, integration platform as a service (SaaS), on-premises and hybrid platform models that can support continuous connectivity to newer SaaS applications and quick adoption of digital technologies</li><li>• All legacy integration adapters were migrated to the new platform and the more than 20-years-old TIBCO integration platform was replaced</li><li>• Middleware was provided that is scalable, cost-effective and consistent with Essential Energy's Best Practice Systems, Technology and Processes initiative</li><li>• Additional integration services were developed to support the eWorks rollout</li><li>• The integration platform was re-architected to create more efficient business processes</li><li>• The eTech Integration team's capabilities were increased.</li></ul>
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## Project budget

<b>Budget dimension</b>	<b>Capex</b>	<b>Opex</b>	<b>Totex</b>
Project budget (baseline)	\$3,666,000	\$80,000	\$3,746,000
Project budget (last approved)	\$5,254,636	\$175	\$5,254,811
Project actuals (including commitments)	\$4,827,132	\$175	\$4,827,307

## Project schedule

<b>Start date</b>	<b>Planned go-live</b>	<b>Actual go-live</b>	<b>Planned finish date</b>	<b>Actual finish date</b>	<b>Variance in business days (go-live)</b>	<b>Number of schedule variations</b>
2/2/2017	08/06/2018	14/09/2018	31/08/2020	27/11/2020	69	3

## Project benefits

Summary of key benefits	Benefits achieved?	Benefit type	Last realisation date
Improved development environment increasing productivity	Yes	Enabling/Economic	18/09/2020
Automatic disaster recovery failover	Yes	Qualitative/Enabling	15/03/2019
Implementation of a more efficient integration platform and services and rationalisation/retirement of legacy systems	Yes	Qualitative/Economic	18/09/2019
Software license cost reduction (ESKER fax, TIBCO and Mulesoft)	Partially achieved, due to contractual requirements	Financial	30/06/2020
Enabling field workforce automation applications	Yes	Enabling	14/09/2018

# Cyber Phase 1 project

## Project details

<b>Project description</b>	<p>Essential Energy commenced an uplift of cybersecurity practices and maturity by launching a cyber program in 2019, Cyber Program Tranche 1.</p> <p>We undertook a reform program in early 2020 to reset the Tranche 1 scope, schedule and budget. This followed the variation of our distributor licence conditions (which are governed by the Independent Pricing and Regulatory Tribunal (IPART) in mid-2019, and program leadership and resource challenges throughout 2019. The reform program was approved by the Board, and had the following results:</p> <ul style="list-style-type: none"> <li>• The Tools and Technology stream has delivered a tangible uplift in cybersecurity capabilities, specifically by implementing security tools and technology that allow for better detection and remediation of, and response to, cyber incidents.</li> <li>• The company has achieved the compliance actions related to the conditions of the initial IPART licence – meeting deliverables on 20 cybersecurity-related licence condition variations.</li> <li>• Consistent and frequent cyber-safety messaging, tailored cyber training and online learning modules helped increase cybersecurity awareness and practice across the company.</li> </ul>
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## Project budget

Budget dimension	Capex	Opex	Totex
Project budget (baseline)	\$3,450,000	\$3,040,000	\$6,490,000
Project budget (last approved)	\$4,830,000	\$3,770,000	\$8,600,000
Project actuals (including commitments)	\$6,180,000	\$2,320,000	\$8,500,000

## Project schedule

Start date	Planned go-live	Actual go-live	Planned finish date	Actual finish date	Variance in business days (go-live)	Number of schedule variations
01/10/2019	22/03/2021	31/05/2021	31/05/2021	31/05/2021	47	3

## Project benefits

Summary of key benefits/dis-benefits	Benefits achieved?	Benefit type	Last realisation date
Regulatory compliance	Yes	Enabling	31/05/2021
Cybersecurity awareness	Partially achieved	Enabling	31/05/2021
Improved cyber resilience	Partially achieved	Enabling	31/05/2021
Decommissioning of legacy tools	Yes	Financial	31/05/2021
Additional operating costs for newly implemented capability (dis-benefit)	Yes	Financial	31/05/2021

# AEMO Rule Change 5 Minute Settlements project

## Project details

<b>Project description</b>	<p>The 5 Minute Settlement, Global Settlement and Customer Switching project was established to ensure Essential Energy met the regulatory obligations of a Distribution Network Service Provider. The specific obligations were:</p> <ul style="list-style-type: none"> <li>• Five-minute settlement – Aligning dispatch and settlement prices by moving from a 30-minute to a 5-minute settlement period, resulting in incentives for fast-response technologies that serve peaks and lower prices overall, with customers only paying high prices during peaks.</li> <li>• Global settlements – In preparation for May 2022, the non-contestable unmetered loads national meter identifier for smart utility management systems and Night Watch are now reported to the market and the consumption is being reported to AEMO.</li> <li>• Customer switching – The current transfer process for customer’s changing retailers can be lengthy and can depend on whether customers have a smart meter that enables remote final reads. A fast-churn processes will now be enforced and in some circumstances final reads may be estimated.</li> </ul>
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## Project budget

Budget dimension	Capex	Opex	Totex
Project budget (baseline)	\$5,590,000	\$0	\$5,590,000
Project budget (last approved)*	\$0	\$5,590,000	\$5,590,000
Project actuals (including commitments)	\$390,000	\$4,830,000	\$5,220,000

\* The change of classification from capex to opex was due to the mid-regulatory period change to International Finance Reporting Standards for the treatment of cloud computing expenditure. The above actual project values are now subject to the recast regulatory information notice that is submitted to the Australian Energy Regulator – reclassifying the expenditure from opex back to capex to align with the classifications contained in the 2019–24 Regulatory Determination.

## Project schedule

Start date	Planned go-live	Actual go-live	Planned finish date	Actual finish date	Variance in business days (go-live)	Number of schedule variations
09/03/2021	30/09/2021	30/09/2021	31/01/2021	31/01/2022	0	1

## Project benefits

Summary of key benefits	Benefits achieved?	Benefit type	Last realisation date
Regulatory compliance	Yes	Compliance	30/09/2021



# ICT Provisioning and Rationalisation Program

## Project details

<b>Project description</b>	<p>The ICT Provisioning and Rationalisation Program reduced ICT risk and lowered operating costs through the following:</p> <ul style="list-style-type: none"><li>• the rationalisation and remediation of ICT servers that were end of life or on extended support</li><li>• an upgrade of server-based applications running on end-of-life hardware to supported platforms (both on premises and in cloud platforms)</li><li>• the migration of all users, devices and other infrastructure objects from the legacy Active Directory to the new, removing the legacy Country Energy brand from the digital environment</li><li>• the establishment of Active Directory–integrated certificate services that meet security and mobility requirements</li><li>• the enablement of Azure Cloud and implementation of Microsoft System Centre to manage virtual server environment, replacing VMWare.</li></ul>
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## Project budget

<b>Budget dimension</b>	<b>Capex</b>	<b>Opex</b>	<b>Totex</b>
Project budget (baseline)	\$4,310,500	\$757,067	\$5,067,567
Project budget (last approved)	\$4,335,779	\$731,788	\$5,067,567
Project actuals (including commitments)	\$4,210,256	\$522,989	\$4,733,245

## Project schedule

<b>Start date</b>	<b>Planned go-live</b>	<b>Actual go-live</b>	<b>Planned finish date</b>	<b>Actual finish date</b>	<b>Variance in business days (go-live)</b>	<b>Number of schedule variations</b>
2/2/2017	30/4/2018	20/07/2018	30/05/2018	30/07/2018	59	3

## Project benefits

Summary of key benefits	Benefits achieved?	Benefit type	Last realisation date
Reduction in legacy hardware, software and associated support and maintenance costs	Yes	Financial/Economic	1/12/2017
Rationalisation of operating systems and hosting environments to improve operational efficiency and compliance	Yes	Qualitative/Compliance	1/11/2017
Transition to a more cost effective 'pay per usage' model for non-production environments	Yes	Economic	1/11/2017
Increased efficiency to deliver virtual environments and consolidation of management tools	Yes	Qualitative/Economic	1/11/2017

## Network Uplift (SD-WAN and Wi-Fi)

### Project details

<b>Project description</b>	<p>The Network Uplift (SD-WAN and Wi-Fi) project redesigned Essential Energy's Wide Area Network (WAN) to significantly increase network bandwidth and deliver a Wi-Fi upgrade to every Essential Energy office and depot.</p> <p>The project successfully resulted in:</p> <ul style="list-style-type: none"> <li>• 105 sites receiving a Wi-Fi upgrade</li> <li>• 49 sites being cutover to SD-WAN</li> <li>• 38 national ethernet connections being completed</li> <li>• 22 TransGrid connection services being completed (out of 28 sites)</li> <li>• penetration testing of Wi-Fi and SD-WAN.</li> </ul>
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### Project budget

Budget dimension	Capex	Opex	Totex
Project budget (baseline)	\$3,472,625	\$0	\$3,472,625
Project budget (last approved)	\$3,157,625	\$0	\$3,157,625
Project actuals (including commitments)	\$3,150,598	\$0	\$3,150,598

### Project schedule

Start date	Planned go-live	Actual go-live	Planned finish date	Actual finish date	Variance in business days (go-live)	Number of schedule variations
27/08/2018	31/10/2019	14/11/2019	31/03/2020	16/04/2020	10	2

### Project benefits

Summary of key benefits	Benefits achieved?	Benefit type	Last realisation date
Increase in network connectivity, bandwidth and performance	Yes	Enabling	30/09/2019
Reduce telecommunication carrier costs	Yes	Financial	30/09/2019
Enable Smart Quality of Service (QoS) capability	No, removed from scope as uplift in bandwidth delivered significant application performance benefits	Enabling	30/09/2019
Simplify device level configuration and improve consistency	Partially achieved	Qualitative	30/09/2019
Gain deep insights to application performance and user experience	Not delivered due to change in solution architecture	Qualitative	30/09/2019

# PowerOn Mobile

## Project details

<b>Project description</b>	<p>Industry analysis confirmed that more than 5 per cent of a switching job's duration is spent on waiting in queues or for voice communications. The PowerOn Mobile project introduced a digital field-based switching management tool that replaces paper-based processes and voice communications.</p> <p>In addition to the increased efficiency of switching work, the project planned to deliver the following organisational benefits:</p> <ul style="list-style-type: none"><li>• reduced workload on control rooms at peak times</li><li>• decreased communication delays between the field and control room</li><li>• increased operational efficiency including improvements related to the Service Target Performance Incentive Scheme</li><li>• more accurate switching time logging</li><li>• reduced Customer Minutes Lost by decreasing wait times with faster switching</li><li>• fewer switching incidents by removing switching sheet differences and miscommunications between the control room and the field</li><li>• less paperwork with the elimination of paper switching sheets</li><li>• greater visibility of the current network diagram for field staff</li><li>• improved customer service and business reputation.</li></ul> <p>The PowerOn Mobile switching application is a fully integrated module of the PowerOn Fusion Distribution Management System already in use. Authorised switching personnel can receive and confirm the completion of instructed steps using a mobile device, with minimal verbal interactions with System Control. Switching updates from the field staff alert the operator and automatically update the PowerOn diagram and switching schedule.</p>
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## Project budget

Budget dimension	Capex	Opex	Totex
Project budget (baseline)	\$2,969,858	\$204,265	\$3,174,123
Project budget (last approved)	\$3,195,279	\$53,663	\$3,248,942
Project actuals (including commitments)	\$3,102,587	\$46,163	\$3,148,750

## Project schedule

Start date	Planned go-live	Actual go-live	Planned finish date	Actual finish date	Variance in business days (go-live)	Number of schedule variations
06/12/2016	16/06/2017	9/10/2017	31/10/2017	28/09/2018	81	3

## Project benefits

Summary of key benefits	Benefits achieved?	Benefit type	Last realisation date
Improved safety outcomes	Not yet quantified due to external impacts	Qualitative	23/07/2019
Improved STPIS outcomes	Not yet quantified due to external impacts	Financial	23/07/2019
Improved operational efficiency	Partially achieved, but not fully quantified yet due to external impacts	Qualitative	23/07/2019
50% reduction in voice communications	Partially achieved, but not fully quantified yet due to external impacts	Enabling	23/07/2019
Reduced operational costs	Partially achieved, but not fully quantified yet due to external impacts	Financial	23/10/2019
Improved customer outcomes	Partially achieved, but not fully quantified yet due to external impacts	Qualitative	23/07/2019
Improved audit trail of switching activities	Yes	Qualitative	09/10/2017

## ERP project

### Project details

<b>Project description</b>	<p>The ERP project implemented an Oracle Cloud enterprise resource planning (ERP) solution to replace PeopleSoft. This improved capabilities in technology, process, data and people across the finance, procurement, human resources and supply chain management functions.</p> <p>The ERP also delivered an interim solution for asset management functionality within Oracle ERP, better positioning it for the forthcoming enterprise asset management (EAM) implementation. This reduced the technical debt associated with the investment in the ERP project, while minimising the changes required for a future EAM system.</p>
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### Project budget

<b>Budget dimension</b>	<b>Capex</b>	<b>Opex</b>	<b>Totex</b>
Project budget (baseline)	\$35,600,000	\$100,000	\$35,700,000
Project budget (last approved)	\$42,900,000	\$300,000	\$43,200,000
Project actuals (including commitments) *	\$3,300,000	\$36,100,000	\$39,400,000

\* The change of classification from capex to opex was due to the mid-regulatory period change to International Finance Reporting Standards for the treatment of cloud computing expenditure. The above actual project values are now subject to the recast regulatory information notice that is submitted to the Australian Energy Regulator – reclassifying the expenditure from opex back to capex to align with the classifications contained in the 2019–24 Regulatory Determination.

### Project schedule

<b>Start date</b>	<b>Planned go-live</b>	<b>Actual go-live</b>	<b>Planned finish date</b>	<b>Actual finish date</b>	<b>Variance in business days (go-live)</b>	<b>Number of schedule variations</b>
31/01/2020	28/05/2021	13/08/2021	17/09/2021	15/12/2021	55	1

## Project benefits

Summary of key benefits/dis-benefits	Benefits achieved?	Benefit type	Last realisation date
Increased operating costs (dis-benefit)	Yes	Financial	30/6/2025
Cost avoidance	Partially achieved	Financial	30/06/2023
Increased scale speed, accuracy and governance of corporate functions	Yes	Qualitative	Ongoing
Automated and self-service processes to eliminate manual tasks, reduce effort and enhance user experience	Yes	Qualitative	Ongoing
Easy access to real-time, accurate data across the corporate functions for better informed decision making	Yes	Qualitative	Ongoing

## eWorks

### Project Details

<b>Project Description</b>	<p>eWorks was a project initiated in 2015 to source, design and deploy an out of the box Mobile Workforce Management Solution (MWM) to plan, schedule and dispatch works to our field resources. A market scan was undertaken to source a suitable solution to meet business needs in November 2016, and Click FSC was identified as the nominated solution of choice.</p> <p>The product was configured and deployed as a pilot to six operational depots, however due to many issues at the pilot depots and poor system performance, the deployment did not progress any further and Click was decommissioned in June 2020. The key objectives and benefits of the project were subsequently delivered using an internally developed solution, as well as investing in consistent ways of working for our field teams to drive productivity safety and efficiency.</p>
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### Project Budget

Budget dimension	Capex	Opex	Totex
Project budget (baseline)	\$0	\$11,365,972	\$11,365,972
Project budget (last approved)	\$0	\$12,203,872	\$12,203,872
Project actuals (including commitments)	\$0	\$12,125,300	\$12,125,300

### Project Schedule

Start Date	Planned Go Live	Actual Go Live	Planned Finish Date	Actual Finish Date	Variance in business days (go live)	Number of schedule variations
29/08/2016	17/7/2017	25/10/2017 (Pilot phase)	30/4/2018	June 2020	71	N/A



## Project benefits

Summary of key benefits	Benefits achieved?	Benefit type	Last realisation date
Increased field productivity with workforce scheduling improvements	Partially achieved via alternative solutions	Economic/Qualitative	01/6/2020
Improvements in reporting, analysis and business intelligence resulting from the creation of a single source of truth	Partially achieved via alternative solutions	Qualitative	01/06/2020
Best practice business processes that allow improved productivity	Partially achieved via alternative solutions	Qualitative	01/6/2020
Improved risk control resulting from an improved maintenance program and workforce management	Partially achieved via alternative solutions	Qualitative	01/6/2020
Improved alignment with Essential Energy's ICT architecture strategy	Partially achieved via alternative solutions	Qualitative	01/6/2020
Demonstration of Essential Energy's investment in people	Partially achieved via alternative solutions	Qualitative	01/06/2020