

Essential Energy
Cost pass through application
Licence Condition changes



September 2021



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Executive Summary

- > In February 2019, the New South Wales Government amended Essential Energy's Distributor's Licence Conditions as a result of our electricity network being classified as Critical Infrastructure by the Commonwealth Government, and therefore requiring a higher degree of physical and cyber security.
- > It was identified that immediate compliance was not possible, and a significant number of large changes to our business were required. To achieve these changes, we worked with the Independent Pricing and Regulatory Tribunal (IPART) to develop a plan to achieve full compliance by 30 June 2024. IPART formally approved this Plan in June 2019 and is responsible for monitoring our compliance.
- > These changes to our licence conditions have broad implications for Essential Energy in the way that the business procures, services and maintains our network and physical assets. This includes how the business stores and manages important data.
- > Essential Energy expects to spend an extra \$39.7M in this regulatory period to make changes that will ensure our business can comply with the amended licence conditions. These costs would not have occurred but for the licence condition changes. These costs are material for Essential Energy and were unforeseen - funding was not included in the revenue allowances for 2019-24, that the Australian Energy Regulator (AER) approved for us in April 2019.
- > Essential Energy is requesting an extra revenue allowance of \$33.2M to cover these unexpected costs.
- > We are requesting that the shortfall in allowance is recovered from customers over a two year period (from July 2022 to June 2024), as preferred by our consumer advocates. This is expected to cost a typical residential customer \$12 extra a year, or \$45 extra for each of these two years for a small business customer.

1. What changed in the licence conditions

The changes to our Distributor's Licence conditions (see Attachment B), approved by the Minister of Energy and Utilities on 5 February 2019, removed some obsolete conditions, and some new conditions were added:

- 1 – Operate within Distribution District. Obligations on expanding Essential Energy's network in the distribution districts of Ausgrid and Endeavour Energy
- 5A – Reliability provided to individual customers. Reliability standards for individual customers (HV customers) includes updated feeder definition
- **9, 10 & 11 Critical Infrastructure conditions. Must have a substantial presence in Australia, Data Security and Compliance**
- 12 - Maintenance of Certified Management Systems – Asset Management and Environmental Management certification required within 3 years
- 19A – Compliance with Public Lighting Code. Mandates compliance with the NSW Public Lighting code from 1 July 2019

This cost pass through application only includes recovery of costs associated with complying with items 9, 10, and 11. There were no reductions in costs from the removal of conditions that were obsolete or replaced with other legislation. The costs associated with other new obligations were either already included in our plans or the costs of the changes were not significant and are being absorbed by the business. Table 1 below summarises the key requirements for Essential Energy from the Critical Infrastructure licence condition changes.

Table 1: Changes required for Essential Energy

Area	Description
Distribution network components	The maintenance and servicing of network components must be undertaken in Australia, unless the only practical option is for this work to be completed offshore. This condition is aimed at ensuring that our distribution network cannot be operated, controlled or compromised from outside Australia.
Data security	Some types of protected data, including Operational Technology (OT) information, load and bulk personal data, must be stored on Information Technology (IT) infrastructure that is physically located in Australia. Except in limited circumstances, this data must only be accessible from within Australia by authorised personnel and must not be exported outside Australia.
Property security	We must ensure that adequate physical security is in place at all Essential Energy sites, to protect our network and supporting OT and IT assets.

We need to ensure that only authorised personnel have access to the OT and IT systems that are used to control the electricity network -this means that the cyber security and physical security measures protecting these systems need to be upgraded, to comply with the critical infrastructure conditions contained in our Distributor's Licence.

2. How the changes are being implemented

We were required to develop an implementation plan ("the Approved Plan") and have it approved by IPART by 1 July 2019. The Approved Plan outlined 31 steps necessary for Essential Energy to become compliant with the licence conditions, and the timing for doing so.

The Plan was prepared by Essential Energy with support from a specialist consultant, and also included discussions with the Commonwealth Government's Critical Infrastructure Centre (CIC). It was submitted, adjusted and then formally approved by IPART on 26 June 2019. Progress against the Plan is subject to an annual compliance audit and reported to IPART. Provided the business is compliant with the varied licence conditions by 30 June 2024, and in the interim is progressing against the Plan, we will be taken to be compliant with the Critical Infrastructure licence conditions. The costs of the Approved Plan preparation and the additional auditing is being absorbed by the business.

2.1 Cyber and data

The gap analysis prepared as part of the Plan, highlighted potential cyber security risks which could threaten our ability to provide an electricity distribution service and impact our communication systems and data. Our customers rely on a safe and dependable electricity service, and if that service was destroyed, degraded or rendered unavailable for an extended period it could significantly impact the security, social or economic wellbeing of New South Wales and other States and Territories. There is a growing risk of domestic and foreign cyber-attacks and increasingly sophisticated methods are being deployed, meaning that Essential Energy must improve, continually adapt and fortify its cyber security to prevent the unauthorised access and control of the electricity network. We also need to ensure that sensitive information is kept secure. While Essential Energy's cyber security practices and controls have proven effective until now, without the proposed investment moving forward, we will:

- Become non-compliant with the new conditions of our Distributor's licence; and
- Expose our network and the community to growing risk, given increasing threats posed through terrorism and by other malicious actors.

2.1.1 How our cyber and data security will become compliant

Using a risk-based approach, several options were considered to achieve compliance with our critical infrastructure licence conditions. Refer to the business case fact sheet in Attachment C for information on our approach and assessments (Attachment D is a detailed version of the business case which is confidential as it contains sensitive

security information). The option that provides the lowest cost compliance, involves progressively implementing cyber security improvements consistent with the Plan, this includes:

Network and Remote Access Controls

- Establish and implement controls and procedures to restrict distribution system access to authorised persons located within Australia, except in accordance with approved emergency access protocols agreed with the Australian Critical Infrastructure Centre. This also includes uplifting access security as well as a focus on eliminating potential for unauthorised remote access.

Vulnerability Management

- Upgrade processes and capability to mitigate the potential for exploitation of systems and network vulnerabilities. Suitable vulnerability scanning, assessment, patching and configuration management tools will be deployed as required within the OT and IT environments

Incident Detection and Management

- Implementing Security Information and Event Management processes and capability for detecting and responding to overseas threats and incidents. This will allow forensic analysis of events to continually improve identification and responses.

Change Management

- Improving controls and procedures to assess and manage the impact of changes to Operational Technology (OT) and Information Technology (IT) environments to prevent overseas access or control of the distribution system.

Device and Environment Hardening

- Implementing the use of cryptographic and key management standards for data network and device security to improve resilience.

Data Security

- Identification and repatriation of sensitive data potentially accessible outside of Australia. We need to ensure that we protect sensitive data and this may include repatriation or migration of information repositories back to Australia

2.2 Property

In 2020, we conducted a physical security audit and gap analysis at all of our sites. Refer to the business case fact sheet in Attachment E for information on our approach and assessments (Attachment F is a detailed version of the business case which is confidential as it contains sensitive security information). The outcome resulted in 369 physical security risks being identified, 281 of which related directly to the new licence conditions. The proposed investment and costs included in this application will address only these 281 risks, in a prudent and cost-efficient manner. .

It is evident from the findings that Essential Energy's current physical security measures must be improved as they do not meet the requirements of the varied licence conditions. Key risks include:

- access to many sites is currently via mechanical keys. 1,850 mechanical keys exist and currently we have no ability to remotely deactivate (or activate) the keys - this is important when they are lost or unaccounted for.
- there is no centralised access management and control system that allows Essential Energy to remotely monitor and control access to its sites.

- perimeter fencing and other physical barriers are, in some cases, non-existent or in poor condition resulting in the potential for unauthorised access of key sites.
- inconsistent tree and other vegetation management practices allow for unauthorised access and entry to key Essential Energy sites.

2.2.1 How our physical security will become compliant

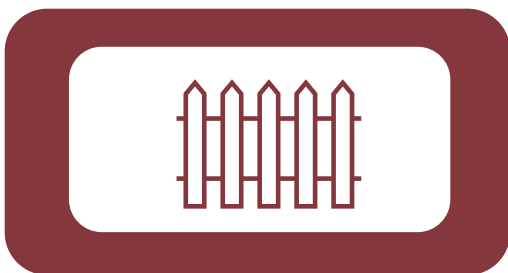
Using a risk-based approach, several options were considered to achieve compliance with the changed licence assessments. The alternative that provides the lowest cost compliance involves undertaking the following improvements to our physical security, consistent with the Plan, including:



the replacement of the mechanical keys with a modern Assa Abloy electronic keying system that will allow remote activation and deactivation of electronic keys



the installation of a new Tecom C4 electronic security surveillance and management control system. This will provide centralised intrusion detection, alarm, CCTV and access management control capabilities, and integration with the Assa Abloy electronic keying system



the upgrade or replacement of non-compliant perimeter fences at 18 high-risk sites



incremental tree trimming/removal and other vegetation management work necessary to prevent physical barriers being easily compromised. Previously this was conducted in an adhoc and inconsistent manner.

3. Value of the licence condition changes

The changes we are making in our business to comply with the critical infrastructure licence conditions, will provide the Government and the community, with assurance that Essential Energy is not only better positioned to protect itself from cyber-attacks and protect sensitive data, but is also able to recover rapidly in the event of a cyber or physical security incident. This includes the flow-on impact to other essential services such as health care, law enforcement, telecommunications, food services and logistics.

Digitisation and increased electronic connectivity will see advancements in the way customers interact and engage with Essential Energy, however, this does introduce additional cyber risks, and controls are required to ensure this

takes place in a safe and secure manner. The function of cyber security within a distribution network service provider is to support the safe and secure operation of our electrical network - to reduce the risk of damage or loss, to people, assets and services and isn't something we are in position to commercialise. Our investment in cyber security will ensure that Essential Energy can securely enable current and emerging technologies which our communities will increasingly rely on in the future, e.g. smart devices, electric vehicles and customer focused energy trading markets. This includes the protection of data supporting these current and emerging technologies.

As well as providing a more resilient network that will be more protected from physical and cyber-crime than was previously the case, the improvements we are making in our business from these licence condition changes, are enablers for future technologies, which of themselves will lead to greater efficiencies for our customers.

4. Costs of the licence condition changes for Essential Energy

The costs of changing our business operations and assets in order to comply with the changed licence conditions, to date and through to 30 June 2024, are detailed in Attachments C, D, E and F and summarised in the table below:

Table 2: Costs related to the licence condition changes

\$ million, \$FY21		2019-20	2020-21	2021-22	2022-23	2023-24	2019-24
Operating expenditure	Cyber security	\$0.4	\$1.6	\$3.8	\$10.9	\$4.0	\$20.7
	Property	\$0.0	\$0.6	\$0.7	\$1.1	\$0.1	\$2.5
Total Opex		\$0.4	\$2.2	\$4.5	\$12.0	\$4.1	\$23.2
Capital expenditure	Cyber security	\$1.8	\$1.7	\$3.4	\$2.8	\$0.4	\$10.0
	Property	\$0.0	\$6.2	\$0.4	-\$0.1	-\$0.1	\$6.5
Total Capex		\$1.8	\$7.8	\$3.8	\$2.7	\$0.4	\$16.5
Totals		\$2.2	\$10.1	\$8.3	\$14.7	\$4.5	\$39.7

Totals may not add due to rounding

4.1 Costs that are not included

Along with changes required to cyber, data and physical security, there were a number of other changes from the variation to the Licence Conditions, needed in our business. The list below provides examples of these extra costs which are being absorbed by Essential Energy; they include (but are not limited to):

- development of the Approved Plan
- project management costs to ensure delivery of the Approved Plan
- additional auditing against the Approved Plan
- updating systems and reporting for compliance with the NSW Public Lighting Code
- additional reliability data and reporting on individual customer reliability standards
- analysis of data repositories
- amendments to customer contracts
- compliance of our asset management system with ISO55001 as required under Licence Condition 12
- required training of staff in the new licence conditions.

Furthermore, the costs claimed do not include any corporate overheads.

4.2 Labour costs

The majority of internal labour costs of existing corporate employees carrying out the work on planning, reporting on, and implementing these changes have been absorbed by Essential Energy. The exception are the costs for dedicated personnel, where they have been contracted to manage implementation of cyber security uplift and physical security uplift to deliver the Approved Plan.

4.3 Surety around the costs

The costs of the licence conditions have been captured under separate project codes ensuring direct expenses are identifiable. Business cases have been produced to support the additional cyber security and property costs, and allow for a clear view of the incremental costs of the licence condition changes - refer Attachments D and F.

Deloitte were also engaged to undertake a quality assurance review to ensure the costs included were incremental, prudent and efficient and only related to the critical infrastructure licence condition changes.

4.4 Efficiency of costs

The cyber and property expenditure included in this application is the result of robust analysis of alternatives to address the gaps in security. Where goods or services have been procured as part of this project, we have followed our procurement policies and processes which ensure value for money, competitive tendering and strong governance. The business cases attached, outline the alternatives we considered and the reasons for the recommended course of action. It should also be noted that Essential Energy's cyber security spending during 2019-24 has increased significantly compared to our forecast (allowance) for the period. This increase reflects improvements consistent with the Plan, but as part of a broader strategy of cyber security redesign for long term sustainability and for uplift in cyber security practice maturity. Although the broader plan is more strategic, it exceeds the requirements of the licence conditions, and therefore that higher level of spending is not included in these costs.

4.5 Any offset of 2019-24 allowances?

We have looked closely at how some of our forecast costs could be offset by this extra spending on cyber and property. From a cyber point of view, there was only a small allowance of approximately \$5M included in our 2019-24 allowance for cyber security, and that has been fully utilised in cyber security changes and maintenance unrelated to these licence condition requirements. In relation to property, following discussion at the first customer roundtable about some indirect benefits of the increased security, we have made some assumptions around the reduced levels of break-ins and related property damage through to June 2024, and how overall property costs may end up lower than forecast. Assuming fewer reactive patrols (25 fewer security guard call-outs each month at \$250 each) and reduced fencing repairs (three fewer events per month at \$1500 each), we believe that savings of \$387k are feasible over the next three years. We have reflected this \$387k offset within the property costs for this application.

The timing of the introduction of the new licence conditions in February 2019, meant that we were unable to include them in our 2019-24 regulatory proposal (produced in April 2018) or revised regulatory proposal (December 2018), and the only opportunity to recover the shortfall in revenue allowance for this regulatory period, is via this cost pass through application.

4.6 Significance of the costs

Table 3 below shows that the impact of these costs is material (more than one percent of annual revenue), in at least one year during 2019-24. The costs of complying with the licence conditions in both 2020-21 and 2022-23, are more than one percent greater than the revenue allowed for that year.

Table 3: Licence condition costs compared to our allowed revenue (FY22 debt update)

\$ million, Nominal	2019-20	2020-21	2021-22	2022-23	2023-24	2019-24
Approved annual revenue unsmoothed	\$938.5	\$1,003.5	\$1,020.3	\$1,058.1	\$1,043.6	\$5,064.0
Total licence condition costs	\$2.2	\$10.3	\$8.8	\$15.8	\$4.9	\$41.9
Percentage shortfall - totex	0.2%	1.0%	0.9%	1.5%	0.5%	0.8%

5. Customer engagement

It is important that our customers have had a chance to understand and challenge this application for costs before it is submitted to the AER. To this end, two roundtables have been completed with consumer advocates and stakeholders:

The first roundtable outlined the cost pass through event and the impact on the business as well as the resulting costs (incurred and forecast cost to June 2024).

The second roundtable in July focussed on addressing the feedback from the first session and preferences to recover the additional costs - e.g. all recovery over two years or seven years, with possibly more recovery in the fixed portion of a bill. Further modelling was requested and undertaken to illustrate different options put forward by stakeholders; to reflect external impacts such as wholesale electricity prices or the NSW Electricity Infrastructure Roadmap. Following out of session feedback from consumer advocates specifying their preferences, we now propose cost recovery over two years, and that it only be recovered against the fixed portion of distribution charges.

We greatly valued the discussion with customers at these sessions – Attachment K outlines the progress of the engagement, through the presentations shared at the roundtables and the recaps. It outlines the issues raised that required further supporting information in our application, and our responses which show how our application was informed by this feedback. Further information on cost recovery was shared with attendees following the second roundtable, and feedback was subsequently received on cost recovery preferences - this is also included.

6. Cost recovery

6.1 Eligible event

Under the National Electricity Rules (NER), costs related to unexpected significant events that were not already provided for in a regulatory allowance, may be eligible for recovery from customers via a cost pass through. In the NER, a regulatory change event (such as changes to Licence Conditions) is set out in the list of potential pass-through events (as is tax changes, service standard changes and retailer insolvency events). While this event most clearly falls under the regulatory change event category, it may also meet the criteria for a service standard change event.

6.2 Timing

In May 2019, Essential Energy requested, and the AER approved an extension to submit any cost pass through application, related to the licence condition changes, to January 2020. Two further extensions were approved; to January 2021 and subsequently, to 14 January 2022. The extensions were required as the complexity and extent of the changes were unveiled, as progress was made toward implementation plans. We needed to ensure that the

extra costs we were claiming would be as firm and realistic as possible. The delays also reflected competing priorities for resources within our business due to significant external events including the 2019-20 bushfires and the COVID-19 pandemic.

The AER has also allowed us to align our other cost pass through application, for the 2019-20 bushfire costs, with this January 2022 due date. Given that the cost recovery impact for both events is relevant to our customers, we undertook customer consultation for both of these applications in parallel.

6.3 Customer preferences

As discussed in section 5, consumer advocates who attended the roundtable in July 2021, were asked for their preference on cost recovery - they told us that they preferred to have us recover these additional costs in network charges over two years. Despite having a larger pricing impact than if recovery was done over a longer recovery period, it will be slightly cheaper in the long run, and more importantly gets this out of the way. There were concerns of uncertainty surrounding the 2024-29 price path, as well as potential external impacts affecting customers' bills; from wholesale electricity prices, the NSW Electricity Infrastructure Roadmap, or increased costs/frequencies of natural disasters from climate change.

6.4 Amount we are looking to recover

We are asking the AER to approve increasing our allowed revenue by \$33.2M to cover the shortfall in revenue that should have covered these extra costs – this revenue reflects what we would have received if these costs could have been forecast in our 2019-24 regulatory proposal.

Table 4 below shows the planned recovery of this shortfall – based on an even apportionment over the two years, adjusted for the time value of money. Refer to Attachment J for the calculations.

Table 4: Proposed change in smoothed revenue (FY22 debt update)

\$ million, Nominal	2019-20	2020-21	2021-22	2022-23	2023-24	2019-24
Approved annual revenue smoothed	\$1,001.7	\$1,006.8	\$1,007.6	\$1,014.6	\$1,021.7	\$5,052.4
PLUS Licence condition pass through	-	-	-	\$16.1	\$17.1	\$33.2
Updated annual revenue smoothed	\$1,001.7	\$1,006.8	\$1,007.6	\$1,030.7	\$1,038.8	\$5,085.6

The recovery pattern above results in a typical residential customer paying an estimated average of \$12 extra in their retail bill for each of the next two years, and a small business customer paying an average \$45 extra each year.

In addition to preferring a shorter recovery period because of more uncertainty about the longer term, consumer advocates showed a strong preference for the increase to be added to the fixed portion of the distribution charge only. This means that customers on the same tariff will have the same increase applied, irrespective of how much electricity they use. This preference will be discussed with the AER as part of our annual pricing proposal early next year.

7. Compliance Check

This table below provides a checklist showing that this application complies with the National Electricity Rules (NER) pass through provisions, set out in clause 6.6.1 and cross-references the location of the relevant information in the application.

Table 5: Check against NER cost pass through requirements

NER clause	Description	Information provided	Section/s
6.6.1(a1)	Identification as a pass through event	This application confirms that the change in licence conditions is a regulatory event	1 6.1
6.6.1(a)	A DNSP may seek AER approval for the pass through for a positive change event To qualify as a positive change event the DNSP must have incurred materially higher costs (NER defined) in providing direct control services	The application confirms that Essential Energy incurred materially higher costs in providing direct control services, and accordingly the event qualifies as a positive pass through event	4.6
6.6.1(c)	A DNSP must submit a statement within 90 business days of the relevant positive change event occurring	The application submitted is equivalent to a written statement and provides evidence on the date of the licence condition change, and the date agreed with the AER to extend the submission for the purposes of the pass through application. The final date to submit the application is 14 January 2022 – refer 6.6.1(k)	6.2
6.6.1(c)(1)	The statement must specify: <ul style="list-style-type: none"> The details of the <i>positive change event</i> 	The details of the positive change event (regulatory change event), being the variation to the licence conditions, are set out in the application.	1 2
6.6.1(c)(2)	<ul style="list-style-type: none"> The date on which the <i>positive change event</i> occurred 	As referenced above in 6.6.1(c), this date and rationale is provided	1 6.2
6.6.1(c)(3)	<ul style="list-style-type: none"> The <i>eligible pass through amount</i> in respect of that <i>positive change event</i> 	The application provides details and justification for the additional costs Table of proposed cost increases over the regulatory period	4 6.4
6.6.1(c)(4)	<ul style="list-style-type: none"> The <i>positive pass through amount</i> the <i>Distribution Network Service Provider</i> proposes in relation to the <i>positive change event</i> 	The application proposes a positive pass through amount	4 6.4
6.6.1(c)(5)	<ul style="list-style-type: none"> The amount of the <i>positive pass through amount</i> that the <i>Distribution Network Service Provider</i> proposes should be passed through to <i>Distribution Network Users</i> in the <i>regulatory year</i> in which, and each <i>regulatory year</i> after that in which, the 	Table of the proposed recovery over the last two years of the 2019-24 regulatory period	6.4

NER clause	Description	Information provided	Section/s
	positive change event occurred		
6.6.1(c)(6) i	Evidence of the actual and likely increase in costs	The application provides business cases for the major areas of spend (cyber and property). Quality Assurance report from Deloitte	4 Attachment C Attachment D Attachment E Attachment F Attachment L
6.6.1(c)(6) ii	Evidence that the costs occur solely as a consequence of the positive change event	We describe the data sources and processes so we could determine the costs were solely due to the positive change event Independent confirmation of this methodology is provided	4 Attachment L
6.6.1(c)(6) iii	Evidence that it relates to the circumstances where the cause of costs is a retailer insolvency event	Not applicable	N/A
6.6.1(c)(7)	Such other information as may be required under any relevant <i>regulatory information instrument</i>	Not applicable	N/A
6.6.1(c1)	Any expenditure that may be for a restricted asset	Not applicable	N/A

8. Attachments list

- A. Confidentiality Claim
- B. Copy of licence condition variation February 2019
- C. Business case for Cyber – fact sheet
- D. Business case for Cyber – long form - confidential
- E. Business case for Property – fact sheet
- F. Business case for Property – long form - confidential
- G. Cyber Costs – confidential
- H. Property Costs – confidential
- I. Combined Costs
- J. Post Tax Revenue Model
- K. Customer Engagement - confidential
- L. Independent Verification and Assessment report - confidential