# Energex Limited

## February-March 2022 Flood Event Cost Pass Through Application

December 2022

energex
Part of Energy Queensland

# ABOUT ENERGEX

Energex Limited (Energex) is part of Energy Queensland Limited (Energy Queensland) and manages an electricity distribution network delivering world-class energy products and services to one of Australia's fastest growing communities – the South East Queensland region.

Energex services more than 1.4 million domestic and business customers, delivering electricity to a population base of around 3.4 million people via 53,000 kilometres of overhead and underground network. Our network covers around 25,000 square kilometres from the New South Wales border in the south to Gympie in the north.

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# CONTENTS


1 Introduction ..... 4

2 February-March Flood Event in South East Queensland ..... 7

3 Legislative and regulatory provisions ..... 12

3.1 Legislative framework ..... 12

3.2 Regulatory framework ..... 14

3.3 NER cost pass through provisions ..... 14

3.4 February-March 2022 Flood Event is a positive change event ..... 17

3.4.1 Characteristics of February-March 2022 Flood Event ..... 17

3.4.2 Insurance arrangements ..... 19

4 Governance arrangements ..... 20

4.1 Natural Hazards Management Plan ..... 20

4.1.1 Prevention, Preparedness, Response and Recovery ..... 22

5 Response to February-March 2022 Flood Event ..... 24

5.1 Operational response to February-March Flood Event ..... 24

5.2 Actions to protect life and property ..... 25

5.3 Communications and safety messaging ..... 25

5.4 Restoration of supply and support for local disaster management groups ..... 26

6 Incremental costs incurred ..... 27

6.1 Material change in the costs of providing direct control services ..... 27

6.2 Network Repair and Restoration Services ..... 28

6.2.1 Expenditure by Element ..... 31

6.2.2 Expenditure by Function ..... 32

6.3 Guaranteed Service Level Payments ..... 35

6.4 Emergency Capital Works ..... 36

6.4.1 Emergency Capital Works - Replace 11 kV cable supports Victoria Park Substation ..... 36

6.4.2 Emergency Capital Works – Replace 110kV Cable Terminations Victoria Park Substation ..... 37

6.4.3 Emergency Capital Works – Replace Archerfield Generator Kiosk ..... 38

6.4.4 Emergency Capital Works – McLachlan Street Substation - Install Ventilation ..... 40

6.4.5 Emergency Capital Works – Repair Concrete Pole at Moggill ....41
6.4.6 Emergency Capital Works – Central Business District Substation ....42
6.4.7 Emergency Capital Works – Landslide Kirra Substation ....42

7 Eligible and proposed cost through amounts .... 44
7.1 Eligible pass through amount....44
7.2 Costs included in eligible pass through amount are solely as a consequence of the positive change event....45
7.3 Efficiency of eligible pass through amount ....46
7.4 Positive pass through amount....46
7.5 Pass through amount in each regulatory year ....47



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# EXECUTIVE SUMMARY

This application seeks approval from the Australian Energy Regulator (AER) to pass through to customers the additional costs Energex incurred in responding to and rectifying the damage caused to its distribution network following the extended period of very severe weather in late February and early March 2022 which led to major flooding in South East Queensland.

Over a 14 day period, South East Queensland experienced an unprecedented severe weather event which delivered prolonged intense rainfall throughout the region and resulted in significant flooding, amounting to a natural disaster on a scale in some areas which has never been seen before. This event caused major damage to and / or destruction of a large number of network assets, including substations, transformers, powerlines and pillars across Energex's distribution network, and resulted in over 246,000 customers losing electricity supply. A significant field response was required to restore supply to customers as quickly and as safely as possible in difficult operating conditions.

The severe weather affected a significant geographic area from the towns of Gympie and Rainbow Beach north of Brisbane, to the Queensland-New South Wales border to the south, and west to the base of the Great Dividing Range. The effects of this weather and the resulting flooding impacted Energex's ability to provide direct control services.

The severity of the flooding in South East Queensland is demonstrated in the figure below which shows the summation of the average duration of minutes of interrupted supply experienced by customers, including major event day and other exclusions, relative to previous large events.

***Figure 1: Average duration of minutes of outages, major event day and other exclusions (2013 to 2022)***

**Source: Category Analysis RIN, Rosetta Analytics**

## Additional costs incurred

In responding to the flood event, $20.2 million ($2022) in incremental costs that were not allowed for in Energex's Distribution Determination for the 2020-2025 regulatory control period (2020-2025 distribution determination) were incurred. This additional expenditure is material and has impacted the cost of providing direct control services. Therefore, Energex seeks recovery of these additional costs via the cost pass through provisions of the National Electricity Rules (NER).[1]

Energex requests that the AER approves the positive pass through amount of $17.03 million on the basis that:

- The February-March 2022 Flood Event meets the requirements to qualify as a natural disaster pass through event approved by the AER as a nominated pass through event in Energex's 2020-2025 distribution determination;
- The costs incurred as a result of the February-March 2022 Flood Event satisfy the one per cent materiality threshold in the NER for the pass through event to be a positive change event;[2]
- This application addresses each of the relevant requirements outlined in clause 6.6.1(c) of the NER; and
- This application is submitted prior to 31 December 2022, being the date of the extension granted by the AER on 29 July 2022 in accordance with clause 6.6.1(k).

## Recovery period

Energex proposes that the full pass through amount will be recovered in regulatory year 2024-25 rather than spreading the cost recovery over the final two years of the current regulatory control period. The proposal for a one year recovery period is on the basis that there will be insufficient time to include a pass through amount in proposed network prices for the period 1 July 2023 to 30 June 2024 given the requirement under clause 6.18.2(a)(2) of the NER for Energex to submit its Annual Pricing Proposal to the AER at least three months prior to the commencement of the regulatory year (i.e. by 31 March 2023).

[1] See clause 6.6.1.

[2] NER Chapter 10, definition of "materiality".

It is expected that recovery of the pass through amount of $17.03 million in network charges for the 2024-25 regulatory year will not significantly impact customers' electricity bills, with the increase to an average residential customer's network charges estimated to be $8.13.

# 1 INTRODUCTION

During the period 22 February 2022 to 7 March 2022,[3] South East Queensland experienced unprecedented severe weather which caused significant and widespread flooding throughout the entire region. This flooding severely impacted Energex's electricity distribution network and resulted in significant expenditure beyond that budgeted for in the 2020-2025 distribution determination.

An example of the flooding that impacted Brisbane is shown below.

***Figure 2: Flooding in Waterloo Street, Newstead***

[3] The Queensland Government activated Disaster Recovery Funding Arrangements for South East Queensland communities affected by heavy rainfall and flooding between 22 February and 7 March 2022.

The February-March 2022 Flood Event had three consequential effects for the Energex electricity network, including:

- A devastation of network assets, including water inundation to more than 600 underground pillars, more than 150 padmount transformers and approximately 50 high voltage ring / switching main units;
- Interruption of supply to approximately 246,000 customers throughout South East Queensland, including Brisbane, Ipswich, Gympie, the Gold Coast, and the Sunshine Coast; and
- The requirement to remediate and restore power to nearly 6,500 homes and businesses in South East Queensland that were directly affected by the flood waters in a physical way (i.e. premises that suffered at least some inundation by water).

This is an application made pursuant to clause 6.6.1(a) of the NER and seeks to pass through the costs associated with the February-March 2022 Flood Event, which Energex submits qualifies as a positive change event.

The February-March 2022 Flood Event has materially increased the cost to Energex of providing direct control services, as the total incremental cost of this event is $20.2 million, comprising operational and capital expenditure of $15.6 million and $4.6 million respectively.

The remainder of this pass through application is structured as follows:

- Section 2 provides an overview of the February-March 2022 Flood Event and the key events that directly adversely affected Energex's network;
- Section 3 summarises the relevant provisions of the NER, the legislative basis for the application and demonstrates how the February-March 2022 Flood Event meets the cost pass through provisions;
- Section 4 provides an overview of Energex's governance arrangements for its planning and management of emergency situations;
- Section 5 outlines the key elements of Energex's response to the February-March 2022 Flood Event;
- Section 6 provides details of the incremental cost associated with the response to the February-March 2022 Flood Event; and
- Section 7 provides details of the eligible and proposed cost pass through amount.

Further included, are the following supporting documents:

- Attachment 1 - Energy Queensland's Natural Hazards Management Plan 2021-22
- Attachment 2 - Emergency Management Plan Distribution Network 2021-22 (which is confidential)
- Attachment 3 - Build-up of Costs
- Attachment 4 - Energex Cost Pass Through Post Tax Revenue Model
- Attachment 5 - Compliance Checklist
- Attachment 6 – Energex Cost Pass Through Confidentiality Claim, December 2022.

# 2 FEBRUARY-MARCH FLOOD EVENT IN SOUTH EAST QUEENSLAND

Following two consecutive years of La Niña conditions and above average rainfall in southern Queensland, including the wettest November on record, catchments in South East Queensland were already wet. Long-range forecasts for summer 2021-22 had predicted wetter than average conditions along the east coast of Australia with higher risk of heavy rainfall and widespread flooding for this area.

On 22 February 2022, a low pressure trough had developed along Australia's east coast and a series of low pressure systems fed a large volume of moist, tropical air over eastern Australia. These systems produced intense thunderstorms and very intense, sustained, heavy rainfall along the South East Queensland coast which caused significant, widespread and devastating flooding throughout the entire region. The presence of the blocking high pressure system near New Zealand caused this trough to stall over South East Queensland and these severe weather conditions persisted for a week until around 28 February 2022. At the same time, an upper-level low pressure system which had moved across from Western Australia intensified the surface trough and brought even more heavy rain and thunderstorms to South East Queensland.

From 2 March 2022 a low pressure system then developed into an east coast low and moved south towards the New South Wales coast. This low dissipated on 5 March 2022 and rain temporarily eased, before a second low deepened from 6 March 2022. This second low combined with the trough moving southward onto the New South Wales coast.

Described as a "rain bomb" by authorities, these persistent weather systems delivered record breaking rainfall across South East Queensland, with the broader region receiving more than 60 per cent of the average annual rainfall total in just a week. Many areas received more than half their average annual rainfall total and some received more than 70 per cent. Thirty locations across South East Queensland recorded in excess of 1,000 millimetres and some areas received rainfall totals of between two and a half to five times more than the monthly average.[4]

[4] BOM, Special Climate Statement 76 – Extreme rainfall and flooding in south-eastern Queensland and eastern New South Wales 25 May 2022 page 3 http://www.bom.gov.au/climate/current/statements/scs76.pdf?20220525.

The intense and continued heavy rainfall throughout the region caused flash flooding of creeks and recurring overland flow leading to the following rivers reaching major flood levels:

- Brisbane River (Brisbane);
- Bremer River (Ipswich);
- Mary River (Gympie); and
- Logan and Albert Rivers (Beaudesert, Beenleigh, Boonah, Jimboomba).

Flooding of these river systems has occurred before but heavy rainfall over upstream catchment areas combined with rainfall concentrated over the greater Brisbane area caused sustained flows into already flooded catchments.

The Brisbane River peaked at 3.85 metres on 28 February 2022, leading to inundation of many areas. While below the 4.46 metre peak experienced in January 2011, the impact of the flooding was different due to intense rainfall across Brisbane, with some areas flooding for the first time on record. The Bremer River at Ipswich peaked at 15 metres which, although below the 2011 peak of 19.4 metres, caused inundation to many areas, including the central business district. In Gympie, the Mary River reached 22.96 metres on 28 February 2022, the second highest recorded flood peak since February 1893, with inundation causing widespread devastation throughout the town and surrounding areas. In the southern areas of Brisbane (Logan Local Government Area) the lower Logan River experienced the worst flooding since January 1974. Although river levels along the lower Brisbane River and Bremer River peaked at levels below the major floods of January 2011 and January 1974, the sustained intensity of the rainfall caused flash flooding of creeks and recurring overland flow flooding leading to further inundation of land and property.

The flows down the upper Brisbane River were mitigated by Wivenhoe Dam which, through the use of its flood compartment, peaked at 183.9 per cent capacity on 28 February 2022, despite the outflow gates being partially open. As an indicator of the sheer volume of rainfall in the catchment over the course of the week, Wivenhoe Dam received inflows of 2.2 million megalitres, described as equivalent to over four times the volume of Sydney Harbour. Following strategic releases of around 150,000 megalitres, Wivenhoe Dam effectively held back 2.05 million megalitres from flowing down the Brisbane River and causing further inundation and devastation to communities in Brisbane.

In total, more than 246,000 customers lost power during the period. The highest number of customers without electricity supply at any one time was 57,000 customers (at 1.00 pm on 28 February 2022).

As a direct result of this severe weather event and resulting flooding, Energex sustained the following damage to its network:

- 633 powerlines reported down;
- 419 high voltage feeder lock outs;
- 364 low voltage incidents;
- Water inundation to more than 600 underground pillars;
- Water inundation to more than 150 padmount transformers that supply the low voltage distribution system;
- Water inundation of approximately 50 high voltage ring / switching main units that supply the high voltage underground network;
- Serious damage to two key substations at Victoria Park and Sandgate;[5]
- Moderate impacts to substations at Milton, Mango Hill, Archerfield, Gympie South, Karrabin and Kenilworth; and
- Significant network impacts to the following areas due to flood inundation: Gympie, Herston, Victoria Park, Nudgee, Brisbane Central Business District, Milton, Toowong, Auchenflower, St Lucia, West End, South Brisbane, Yeerongpilly, Yeronga, Chelmer, Graceville, Sherwood, Corinda, Oxley, Archerfield, Rocklea, Tennyson, Fairfield, Redbank Plains, Carole Park, Goodna, Bundamba, Ipswich CBD, Booval, Laidley, Glenmore Grove, Loganlea, Logan, Beenleigh, and Jimboomba.

[5] Two million litres of water were pumped from the Victoria Park substation and contingency planning was enacted to ensure the 9,239 connected customers, including three of Brisbane's largest hospitals, remained on-supply. This included the successful delivery of Energex's 's largest mobile substation to site.

*Figure 3: Crew isolating an 11kV feeder at Ipswich*

In response, Energex field crews and operational teams were mobilised and worked around the clock to safely restore electricity supply to all customers who could safely reconnect. Figure 3 is an example of crews isolating a feeder in Ipswich. Field crews and other staff from Ergon Energy Corporation Limited (Ergon Energy Network) were also mobilised to assist. For example:

- Due to significant storm damage to the Landsborough network on the morning of 3 March 2022, including over 40 spans of fallen powerlines, along with several damaged and fallen poles, crews rebuilt the network within a 24 hour period; and

- Due to reduced network capacity at the Archerfield substation, on 28 February 2022, Energex conducted rotational load shedding which impacted parts of Acacia Ridge, Durack, Rocklea, Willawong, Coopers Plains and Salisbury and asked customers to conserve power in these areas on that day to help manage electricity demand. Energex managed to quickly complete alternative network solutions and ceased rotational load shedding within hours.

Although flooding has occurred in South East Queensland before, there were some substantial differences with the flooding arising from the February-March 2022 Flood Event which led to significant network impacts not previously experienced. In previous major floods, including the 2011 floods, much of the impact on the electricity network was caused by flood waters from the rising Mary, Brisbane and Bremer Rivers, and the waterways that flow into them further upstream. While these river systems again reached major flood levels, the speed with which these catchments filled due to the unprecedented continuous torrential rain which lasted for several days, created unique conditions not previously experienced. Further, other rivers like the Logan and the Albert Rivers also peaked at major flood levels and many homes and businesses across South East Queensland which were inundated had not experienced this level of sustained flooding before, again due to the unprecedented nature of the persistent rainfall.

As expected, the impacts to property and the electricity network were extensive. However, due to the sheer intensity of the rainfall, the basements of many buildings flooded, despite being located above local council designated flood levels. In numerous cases, these basements contained network electrical assets such as transformers and high voltage switching units, along with customer owned infrastructure such as switchboards. As a further demonstration of the uniqueness of the conditions of this severe weather event and the resulting flooding, two substations (Victoria Park and Sandgate) were impacted by flooding for the first time.

# 3 LEGISLATIVE AND REGULATORY PROVISIONS

## 3.1 Legislative framework

Energex is a distribution authority holder under the Queensland *Electricity Act* 1994, and is responsible for customer connections to the electricity supply network and the safe and reliable delivery of electricity to customers in South East Queensland (as seen in Figure 4 below). Energex's electricity distribution area runs from the New South Wales border north to Gympie and Rainbow Beach and west to the base of the Great Dividing Range, and includes the major urban areas of Brisbane, Gold Coast, Sunshine Coast, Logan, Ipswich, Redlands and Moreton Bay, and the rural and semi-rural areas of Lockyer Valley, Scenic Rim and Somerset.

***Figure 4: Energex Area of Supply***

Energex is required by law to provide connection services.[6] However, this obligation does not apply in certain circumstances:

- In an emergency (or to prevent an emergency happening);
- Where the connection, reconnection or supply to the premises would breach technical requirements; or
- Where the connection, reconnection or supply to the premises would unreasonably interfere with the connection, reconnection or supply of electricity to the premises of another customer.

Energex's obligations in terms of its management of the distribution network, performance requirements and the services provided to retailers are contained in a number of legislative instruments, including:

- *Electricity Act* 1994 (Qld);
- *Electrical Safety Act* 2002 (Qld);
- National Electricity Law and NER;
- National Energy Retail Law and National Energy Retail Rules; and
- Queensland Electricity Distribution Network Code (EDNC).

The Standard Connection Contract (SCC), the deemed contract between the electricity distributor and customer for ongoing supply regarding the delivery of electricity, defines the terms under which a premises is connected to the electricity distribution network. For example, in accordance with clause 12.1 of the SCC, Energex may disconnect a customer under the following circumstances:

- There is an emergency or for health and safety reasons; or
- It is required to do so at the direction of a relevant authority; or
- It is otherwise permitted by the energy laws to disconnect the premises.

[6] Section 66 National Energy Retail Law (Queensland).

All customer connection services provided by Energex are performed in accordance with electrical safety legislation and applicable industry standards.

All actions taken by Energex during the February-March 2022 Flood Event were undertaken in accordance with electricity legislative provisions.

## 3.2 Regulatory framework

The AER is responsible for setting the revenue that Energex can recover from customers for the management of the electricity supply network and the provision of safe and reliable electricity to customers in South East Queensland. Every five years the AER assesses Energex's expenditure plans to determine whether they reflect prudent and efficient spending, in accordance with the NER.

The AER employs a "building block" approach to setting Energex's revenue allowance which is intended to provide enough revenue to cover its capital, operating, finance and other costs. In June 2020, the AER set Energex's revenues for the five-year regulatory control period from 1 July 2020 to 30 June 2025.

## 3.3 NER cost pass through provisions

Clause 6.6.1(c) of the NER sets out the mechanism for a distribution network service provider (DNSP) to seek approval from the AER to pass through to Distribution Network Users materially higher costs in providing direct control services resulting from a positive pass through event.

Clause 6.6.1(a1) provides that a pass through event may include any one of the following defined events:

- A regulatory change event;
- A service standard event;
- A tax change event;
- A retailer insolvency event; or
- Any other event specified in a distribution determination as a pass through event for the determination.

Clause 6.6.1(a) provides that if a positive change event occurs, a DNSP may seek approval from the AER to pass through to Distribution Network Users a positive pass through amount.

A "positive change event" for a DNSP is defined as:

"(a) a *pass through event*, other than a *retailer insolvency event*, which entails the *Distribution Network Service Provider* incurring *materially* higher costs in providing direct control services than it would have incurred but for that event, but does not include a contingent project or an associated trigger event; or

(b) a *retailer insolvency event*",[7]

where "materially" is defined as:

> "For the purposes of the application of clause 6.6.1, an event results in a *Distribution Network Service Provider* incurring materially higher or materially lower costs if the change in costs (as opposed to the revenue impact) that the *Distribution Network Service Provider* has incurred and is likely to incur in any *regulatory year* of a *regulatory control period*, as a result of that event, exceeds 1% of the *annual revenue requirement* for the *Distribution Network Service Provider* for that *regulatory year*." [8]

In the 2020-2025 distribution determination, the AER approved the following nominated pass through events for the regulatory control period pursuant to clause 6.12.1(14) of the NER:

- Natural disaster event;
- Terrorism event;
- Insurance coverage event; and
- Insurer credit risk event.[9]

[7] NER Chapter 10. A retailer insolvency event is not applicable for the February-March 2022 Flood Event.

[8] NER Chapter 10.

[9] AER Final Decision, *Energex Distribution Determination 2020 to 2025*, Attachment 14 Pass through events, June 2020, p. 14-4.

In its final decision, the AER defined "natural disaster" to mean:

> "any natural disaster including but not limited to cyclone, fire, flood or earthquake that occurs during the 2020–25 regulatory control period that increases the costs to Energex in providing direct control services, provided the fire, flood or other event was:
>
> - a consequence of an act or omission that was necessary for the service provider to comply with a regulatory obligation or requirement or with an applicable regulatory instrument; or
> - not a consequence of any other act or omission of the service provider.
>
> *Note: In assessing a natural disaster event pass through application, the AER will have regard to, amongst other things:*
>
> - whether Energex has insurance against the event,
> - the level of insurance that an efficient and prudent NSP would obtain in respect of the event." [10]

In assessing a cost pass through application for a positive change event, the AER is to take account of the matters listed in clause 6.6.1(j)(1)-(8) of the NER. These include:

- The increase in costs in the provision of direct control services that Energex has incurred and is likely to incur until the end of the regulatory control period as a result of the event;
- The efficiency of Energex's decisions and actions in relation to the risk of the event occurring, including whether it has failed to take any action that could reasonably have reduced the magnitude of the pass through amount or has taken or omitted to take any action where such action or omission has increased the magnitude of the amount;
- The time cost of money based on the allowed rate of return for Energex for the regulatory control period in which the event occurred;
- The need to ensure that Energex only recovers any actual or likely increment in costs to the extent that such an increment is solely as a consequence of a pass through event; and

[10] Ibid., p. 14-6.

- Whether the costs of the pass through event have already been factored into the calculation of Energex's annual revenue requirement for the regulatory control period in which the pass through event occurred.

## 3.4 February-March 2022 Flood Event is a positive change event

Under the NER,[11] the pass through of incremental costs not included in a regulatory determination requires the occurrence to be classified as a "positive change event", which is:

> "… a pass through event…. which entails the Distribution Network Service Provider incurring materially higher costs in providing direct control services than it would have incurred but for the event but does not include a contingent project or an associated trigger event."

The positive change event that is the subject of this application is the February-March 2022 Flood Event in South East Queensland, which severely impacted the network and our customers. The Queensland Government activated the Disaster Recovery Funding Arrangements (DRFA) in South East Queensland from 22 February 2022 to 7 March 2022 for communities affected by heavy rainfall and flooding. Energex refers to 22 February 2022 as the commencement date of the event, being the date the DRFA was activated.

### 3.4.1 Characteristics of February-March 2022 Flood Event

The severe weather and resulting flooding throughout South East Queensland between 22 February and 7 March 2022 were an uncontrollable and unexpected natural disaster event, the occurrence of which could not have been prevented or mitigated by Energex.

In addition, in terms of rainfall, the unique and persistent weather conditions, particularly the prolonged intensity of rainfall across the entire region, set new records in many areas which led to riverine and overland flash flooding in areas which have not previously experienced flooding.

Due to the scale and duration of the weather event, measured in terms of rainfall, flood levels and their broad geographic scope, the consequential network costs associated with this event could not reasonably have been factored into the approved capital and operational expenditure forecasts included in the 2020-2025 distribution determination.

[11] NER Chapter 10, Definition of 'positive change event'.

As a result, provided the additional cost of providing distribution services is material, the costs associated with Energex's response to the February-March 2022 Flood Event represent a positive change event for the purpose of the NER cost pass through materiality threshold.

As noted above, to be eligible for a pass through, the costs associated with a positive change event must meet the materiality threshold set out in the NER, which is where Energex incurs materially higher costs if the change in costs (as opposed to the revenue impact) it has incurred or is likely to incur in any regulatory year of the regulatory control period, as a result of that event, exceeds one per cent of the annual revenue requirement for that regulatory year:

> "*annual revenue requirement*
>
> An amount representing revenue for a *Distribution Network Service Provider*, for each *regulatory year* of a *regulatory control period*, calculated in accordance with Part C of Chapter 6."[12]

As outlined in detail later in this application, the incremental costs associated with Energex's response to the February-March 2022 Flood Event of $20.2 million ($2021-22) are material and exceed the one per cent ($11.9 million) materiality threshold of Energex's smoothed revenue allowance in 2022-23. Moreover, we note that the operating expenditure component of these incremental costs of $15.6 million alone exceeds the one per cent materiality threshold.

Therefore, Energex submits that the February-March 2022 Flood Event meets the conditions to be classified as:

- a pass through event, being a natural disaster as contemplated in the 2020-2025 distribution determination; and
- a positive change event, meeting the one per cent materiality threshold through the event for the purposes of the NER.

[12] NER Chapter 10.

### 3.4.2 Insurance arrangements

Energy Queensland has a range of insurance policies designed to mitigate risk for the Energy Queensland Group. However, we do not hold insurance coverage for the damage to the "poles and wires" network caused by a natural disaster. The cost of transferring this risk to another party via payment of a premium outweighs the benefits of eliminating or substantially mitigating against the cost impact of natural disasters.

Standard practice requires regular reviews of our insurance coverage where policies such as "weather derivative coverage" (i.e. a financial instrument used by companies or individuals to hedge against the risk of weather-related losses when certain pre-determined conditions are met) or "captives" have been assessed to be not economically viable due to:

- Insurance market pressures resulting in cost prohibitive premiums;
- Premium cost increases once a claim is made and insurance arrangements are renegotiated, along with further exclusions making future claims more onerous to pursue; and
- Substantial initial set up costs for "captives".

The insurance market appetite to offer coverage for "poles and wires" assets is challenging, with most concern focused on catastrophic weather events such as flood, cyclone and storm, which could potentially result in large insurance losses for these types of assets. As a result, underwriters look to price the coverage accordingly, and are likely to impose limitations on the coverage and large deductibles.

In past years, Energy Queensland has worked with its insurer to complete a detailed risk assessment process addressing "poles and wires" assets. This review included natural catastrophe loss modelling, risk profiling, maximum foreseeable loss scenarios, impact on business assessment, regulatory factors, development of go-to-market strategies, insurer presentations (in Australia, London and Singapore), consideration of alternative risk transfer options (e.g. parametric solutions, use of captive structures) and market indications for a range of risk transfer solutions. After following this process, Energy Queensland made the decision not to insure "poles and wires" assets given the premium cost impact is not economically feasible.

# 4 GOVERNANCE ARRANGEMENTS

Each year Energex, as part of the Energy Queensland group, undertakes diligent preparation and planning activities to ensure it is prepared for the potential impact of the numerous natural hazards that occur in South East Queensland. Energex needs to ensure its network is resilient, able to withstand the impact of natural hazards and that its response capability is efficient and effective.

As part of its business as usual activities, Energex maintains several preparedness plans, policies and procedures to ensure it can respond effectively to significant weather and emergency events. The importance of these measures is reinforced through legislative and regulatory obligations, corporate governance arrangements, internal policies and procedures (for example, work practice documents) and staff training. In some cases these measures are made publicly available, thereby providing confidence that Energex is appropriately prepared.

Energex's approach is structured hierarchically under an Organisational Resilience Strategy, which features a Natural Hazards Management Plan, and supporting response documents to be used when planning for and responding to natural hazards and other emergencies. An Emergency and Business Disruption Framework is used to assist the organisation in the management of crisis, emergency and business continuity events and comprises a suite of documents designed to guide prevention, preparedness, response and recovery in emergencies, including natural hazard events. The Emergency and Business Disruption Framework is modelled on the Queensland Government's Emergency Risk Management Framework and is structured on the principles of the Australasian Interservice Incident Management System to align with that employed by the emergency services and other response agencies and organisations.

## 4.1 Natural Hazards Management Plan

The Natural Hazards Management Plan (Attachment 1) details our planning and preparation activities critical to providing South East Queensland with a reliable network where disruptions are minimised during natural hazard events. When disruptions do occur, we will ensure we respond as quickly as possible to restore supply safely.

This plan incorporates the Summer Preparedness Plan, acknowledging the changing climate, an expanded view of natural hazards and the additional preparation, planning and response now required outside the typical summer period.

The Natural Hazards Management Plan sets out the governance framework which features the following elements:

- **Risk Management**

  Natural hazard risks are managed in accordance with the Risk Management Policy, framework and process which aligns with the internationally recognised Standard AS/NZ ISO 31000:2018 Risk Management – Principles and Guidelines. Management of risk is critical to effective asset management and is integral to the ISO 55000 Asset Management suite of Standards. Inherent and emerging risks as a result of operations, are therefore regularly reviewed.

- **Committees**

  A Summer Preparedness Working Group operates to ensure our business divisions have conducted preparations throughout the year and in the lead up to the summer storm season. In addition, there are hazard specific committees and technical advisory groups covering bushfire, flood, heatwave and pandemic hazards.

- **Roles and Responsibilities**

  A dedicated organisational structure has been developed for organisational oversight of emergency management teams. Charters and role statement handbooks outline each role and the associated responsibilities required for an emergency response.

- **Continuous Improvement**

  Regular assurance checks are conducted of the framework, procedures, processes and work practices to ensure we maintain a current and effective emergency management framework to safely support the community. Hazard-specific reviews are also conducted to identify the risk and exposure to business continuity, its functions and assets and the potential effect on customers and the community. Following the activation of escalated emergency response functions, debriefs are undertaken to identify both success and improvement opportunities for application in future events.

- **Memoranda of Understanding**

  A number of memoranda of understanding are maintained with other Network Service Providers and supporting bodies to assist with our ability to prepare, plan for and respond to emergency events.

- **Interagency Co-operation**

  Representation on the following groups is maintained to ensure appropriate collaboration and interagency information sharing with emergency services. These committees are convened throughout the year (both during and outside emergency events):

  - Queensland Disaster Management Committee;
  - State Disaster Co-ordination Group;
  - District Disaster Management Groups;
  - Local Disaster Management Groups;
  - State Inter-Departmental Committee on Bushfire; and
  - Regional Inter-Departmental Committee on Bushfire.

- **Seasonal Exposure to Hazards**

  As the seasons change, preparations and response plans are adjusted as necessary to ensure readiness. The plan is reviewed annually to ensure currency and application of learnings from previous events and to identify improvement opportunities.

### 4.1.1 Prevention, Preparedness, Response and Recovery

The Natural Hazards Management Plan addresses severe storms, cyclones, floods, bushfires, pandemics, earthquakes, heatwaves, and tsunamis. A Summer Preparedness Working Group ensures the business has conducted preparations throughout the year and in the lead up to the summer storm season. This assures a safe and robust network, sound emergency response procedures and safety awareness of employees and the broader community. There are also hazard specific committees and technical advisory groups covering bushfire, flood, heatwave, and pandemic hazards.

In the lead up to each annual severe weather season (October to May) we undertake various asset maintenance and inspection, vegetation management and asset improvement initiatives, capital investment programs, and preparedness training.

The annual cycle of dedicated activities commences in May and continues throughout the year to prepare for the commencement of the bushfire season (typically from August) and into the summer storm and cyclone period (from October). These activities include planning and documentation updates, training in the Emergency and Business Disruption Framework, familiarisation of emergency management plans, conducting emergency response exercises, emergency response refresher training for all field personnel and providing online training to all employees involved in emergency management.

- **Preparation**

  The specific activities undertaken to prepare the network and improve resilience against natural hazards include appropriate design and location of assets, inspection and maintenance programs, network capacity and security improvement programs, safety net requirements, plant emergency rating information, strategic spare components, peak load monitoring, temporary load support, demand management and inspection programs. Profiles and sub-plans for specific natural hazards, including floods, are developed and describe the major elements of our preparation for these events and the initial response.

- **Contingency**

  Network contingency plans detail the load transfer and load management options available to restore supply following a single contingency event affecting bulk supply substations, zone substations and sub-transmission feeders. Each year, the entire network is reviewed to ensure that all substations and feeders can supply a 10 PoE (10 per cent Probability of Exceedance) forecast peak load under system normal conditions i.e. against the Normal Cyclic Capacity. A process has been implemented to monitor loads during the summer peak period so that as hot weather develops, emerging "hot spots" where demand growth may have exceeded the previous annual forecasts are identified. In these cases, corrective action to avoid an overload is taken well before a capacity constraint occurs.

- **Response**

  Emergency response procedures are reviewed and exercises are held on an annual basis. In addition to storm emergencies, the procedures cover response to major network failures, generation and transmission deficiencies and unusual events such as extreme weather. A standard fault response and emergency escalation framework is employed to respond to incidents. Using a multi-tiered response framework, an initial assessment of potential damage determines whether the response is managed operationally or escalated to a Level 2 or Level 3 Emergency Management structure. When disruptions do occur, we respond as quickly as possible to restore supply safely, with the priority for restoration being emergency services, including essential services and hospitals.

Also attached, for the AER's information, is the Energex and Ergon Energy Network Emergency Management Plan – Distribution Network (Attachment 2 – confidential).

# 5 RESPONSE TO FEBRUARY-MARCH 2022 FLOOD EVENT

## 5.1 Operational response to February-March Flood Event

Energex was committed to safely restoring supply of electricity to customers impacted by the February-March 2022 Flood Event as soon as it was safe to do so. There were widespread impacts on communities across the impacted Local Government Areas, with the unique nature of this flood event presenting challenges as water levels in creeks and rivers continued to rise and fall due to tides, continuous rainfall, dam releases and other severe weather impacts. Flood water was the greatest obstacle to accessing network assets to restore supply, and it was only after flood waters had subsided that crews could drain, clean and dry impacted equipment to undertake repairs.

Based on the rate it was expected the flood water would recede and the initial damage assessment of known network impacts, Energex set a target to restore supply to all customers who could safely reconnect by the evening of 6 March 2022, subject to access, weather and safety conditions. To assist with restoration work, Ergon Energy Network crews were mobilised from across regional Queensland to assist Energex crews. The figure below shows crews mustering at Raceview Depot. In total, nearly 800 field and substation crews responded across the south east and were supported by hundreds of other employees involved with numerous critical functions, such as network control, planning and job dispatch, call centre operations, and logistical support.

***Figure 5: Crews mustering at Raceview Depot***

## 5.2 Actions to protect life and property

With the onset of major flooding, Energex began enacting its various flood response plans which entail the de-energisation of electricity assets that were at risk of inundation or needed to be de-energised for safety reasons due to rising flood waters encroaching on the regulated safe clearance height for overhead powerlines. Crews also de-energised any ground mounted assets that were at risk of inundation, to protect the community while also protecting the asset from significant damage and increasing the time it takes to restore supply once waters subside.

These actions began for the Mary River and catchments at Gympie, then extended to the Albert River, Logan River, Bremer River and Brisbane River (including lower sections of the Central Business District) and associated catchments as the flooding worsened across the South East. Energex then continued to gather information on flood levels and asset impacts to refine de-energisation plans and install additional isolation points where appropriate.

## 5.3 Communications and safety messaging

Community safety was a key focus of both proactive and reactive public communication activity during the floods. Messages via traditional news media (television, radio, print and online) as well as social media included network impact and restoration updates as well as key safety messages regarding general flood safety, solar PV safety, generator safety, wet and damaged appliances, reconnecting power, boat safety, fallen powerlines and safe flood cleaning.

During the flood event there were:

- More than three million visits to Energex and Ergon Energy Network's online Outage Finders providing live network restoration updates;
- Social media posts reached a total of 4.07 million people across Facebook and Twitter, with an overall positive sentiment of 67 per cent;
- Our contact centre received more than 93,000 calls to the loss of supply line, with an interactive voice response satisfaction rate of 75 per cent;
- Approximately 22,000 calls were answered by contact centre operators with an average speed of answer of 15 seconds;
- More than 100 media enquiries were managed throughout the event with many live to air news interviews; and
- Over 500 media mentions (online, print, radio, and television) were recorded during the event.

Energex also provided regular updates to external stakeholders (including relevant Government Departments and the State Disaster Coordination Centre) on the response, key safety messages, and network restoration efforts. In total, 29 situation reports were provided to the State Disaster Coordination Centre and all response agencies and departments. In addition, representatives liaised with each relevant local disaster management group to provide updates on the network impact and restoration and provide assistance to the coordinated local disaster response effort.

Energex fielded many requests from response agencies and departments for information during the event to assist with the response and recovery effort, particularly around network outage and restoration information, restoration information for prioritised critical infrastructure such as schools, water pumping stations, and telecommunication sites, and data to assist the facilitation of government assistance payments.

## 5.4 Restoration of supply and support for local disaster management groups

Energex followed a set hierarchy for network restoration in response to the February-March 2022 Flood Event, commencing with make safe, then repair and restore supply to assets that serve a critical linking and switching function across the Energex network. This was followed by restoration of power to the largest number of customers as quickly as possible. Next, repairs were made to distribution transformers and service wires to homes and businesses. Supply to critical / sensitive customers was prioritised by restoring network supply to these sites or by providing mobile generation while network repairs were completed.

On 2 March 2022, Energex released a public Restoration Plan that outlined key information regarding the repair of the network and the reconnection of impacted customers. Based on an assessment at the time, a target for restoration of all customers that could safely reconnect was set for the evening of 6 March 2022, subject to access, weather, and safety conditions. Estimated restoration times for individual streets and suburbs were uploaded into Energex's online Outage Finder tool for customers to self-serve and remain updated on restoration progress (with the Outage Finder being advertised across all communication channels).

During the response more than 21,000 individual jobs were dispatched to field crews. Nearly 6,500 customers whose homes or businesses had been inundated were required to engage a licensed electrical contractor to inspect their wiring, switchboard, or mains connection. Once these checks were made and any repairs carried out, licensed electrical contractors could submit an Electrical Work Request to Energex to request reconnection by field crews.

# 6 INCREMENTAL COSTS INCURRED

This section outlines the incremental costs Energex incurred in responding to damage to the network during the February-March 2022 Flood Event. It includes post event expenditure incurred and estimated to occur directly relating to substation and pole damage from the flooding event.

## 6.1 Material change in the costs of providing direct control services

The total cost of the flood event had a material impact on providing direct control services. The total incremental costs of the response, including estimated future works, is $20.3 million in nominal dollars and $20.23 million in real 2021-22 dollars. This amount is $8.3 million higher than the calculated pass through trigger of $11.9 million. Total costs, incremental and non-incremental, are $33.8 million in nominal dollars. Tables 6.1 and 6.2 below break down the incremental costs by financial year and major classification and excludes those elements considered non-incremental.

***Table 6.1: Incremental expenditure Opex 2021-22 dollars by element***

| $ million real | 2020-21 | 2021-22 | 2022-23 | TOTAL |
|---|---|---|---|---|
| Labour - Ordinary Time Opex | | 6.324 | 0.112 | 6.436 |
| Labour Overtime | | 5.499 | 0.016 | 5.515 |
| Materials | | 0.723 | -0.025 | 0.698 |
| Material Oncost | | 0.054 | -0.003 | 0.051 |
| Contractors | | 2.293 | 0.172 | 2.465 |
| Other Operating Costs excluding GSL's | | 0.131 | 0.016 | 0.147 |
| GSL's | | 0.286 | | 0.286 |
| Sub-Total | | **15.31** | **0.288** | **15.598** |

***Table 6.2 Incremental expenditure Capex 2021-22 dollars by element***

| $ million real | 2020-21 | 2021-22 | 2022-23 | TOTAL |
|---|---|---|---|---|
| Labour - Ordinary Time Opex | | 0.245 | 0.872 | 1.117 |
| Labour Overtime | | 0.075 | -0.073 | 0.002 |
| Materials | | 0.433 | -0.131 | 0.302 |
| Material Oncost | | 0.019 | 0.002 | 0.021 |
| Contractors | | 0.187 | 2.999 | 3.186 |
| Other Operating Costs | | 0.001 | -0.001 | 0 |
| Sub-Total | | **0.960** | **3.668** | **4.628** |

Failed in-service replacement of high voltage equipment (capital expenditure) was excluded from incremental costs based on materiality.

The nature of the response included both capital ($4.63 million) and operating expenditure ($15.59 million), with the classification determined in accordance with appropriate accounting standards and our agreed cost allocation method.

Capital expenditure also includes a future estimate of works to be completed in 2022-23 of $3.67 million. These estimates have been prepared based on estimating tools and represent fully scoped projects in Energex's current pipeline of works. Estimates are constructed in detail by assembly from a library of standard estimates based on the scope of works. Estimates have been converted to real 2021-22 dollars.

Table 6.3 below summarises the incremental expenditure by the three major activities of expenditure.

***Table 6.3: February-March 2022 Flood Event - Incurred costs Incremental Real***

| $ million ($2022) | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|---|---|---|---|---|---|---|
| Emergency (replacement) capital works | | 0.96 | 3.67 | | | 4.63 |
| Emergency corrective works (opex) | | 15.02 | 0.29 | | | 15.31 |
| Other operating costs (GSL) | | 0.29 | | | | 0.29 |
| **Total** | | **16.27** | **3.96** | | | **20.23** |

## 6.2 Network Repair and Restoration Services

In response to the February-March 2022 Flood Event, Energex incurred $15.3 million in additional operating costs relating to the provision of network repair and restoration services. These operating costs are summarised in Table 6.4 below according to the nature of the response.

***Table 6.4: Eligible pass through amount Opex Emergency Response (Corrective)***

| $ million real | 2020-21 | 2021-22 | 2022-23 | TOTAL |
|---|---|---|---|---|
| *Frontline Response :* | | | | |
| Operations Response | | **14.48** | **0.288** | **14.768** |
| | | | | |
| *Support Services:* | | | | |
| Planning and Intelligence Response | | 0.138 | | 0.138 |
| Communication and Stakeholder Response | | 0.021 | | 0.021 |
| Logistics Response | | 0.37 | | 0.37 |
| Safety Response | | 0.015 | | 0.015 |
| Sub-total | | **0.544** | **0** | **0.544** |
| | | | | |
| **TOTAL** | | **15.024** | **0.288** | **15.312** |

The response is dominated by Operations Response which includes coordination of various field teams, damage assessment and repairs and network operations.

Planning and Intelligence Response includes the cost of employees from:

- Restoration Planning (Restoration Planners and Network Operations, Customer Market Operations and Asset Management lead personnel);
- Resource Planning (Resource, External Entity, Contractor and Aircraft coordinators);
- Information and Data (Damage Assessment Coordinators and Packagers and Data Coordinators); and
- Finance.

These costs are confined to additional overtime effort during the event and incremental operating expenses.

Communications and Stakeholder Response includes the cost of employees from:

- Liaison (State Disaster Coordination, District Disaster Management, Local Disaster Management and Government Liaison representatives);
- Reporting (Internal, External and Board Reporting); and
- Community Media (Media and Social Media representatives, Visitor Management and Community Engagement Coordinator).

These costs are confined to additional overtime effort during the event and incremental operating expenses.

Logistics Response includes the cost of employees from:

- Fleet (Fleet supervisors and representatives);
- Stores (Stores field supervisors and representatives);
- Mobilisation (Travel and Accommodation team, Catering Supervisor and Staging Managers); and
- Administration, Infrastructure and Security (Property and Security Coordinators, Digital Support and Field Force Automation representatives).

These costs are mostly confined to additional overtime effort during the event and incremental operating expenses.

Safety Response includes the cost of employees from:

- Health, Safety and Environment (Field Safety and Environmental representatives, nurses and fatigue advisors);
- Pastoral Care and Welfare (Human Resources representatives and mental health advocates); and
- Investigation (Regulatory Reporting officer and Incident Investigators).

These costs are confined to additional overtime effort during the event and incremental operating expenses.

The tables below highlight response expenditure by element and frontline and support response.

***Table 6.5 Opex Emergency Response***

| $ million real | 2020-21 | 2021-22 | 2022-23 | TOTAL |
|---|---|---|---|---|
| Labour - Ordinary Time Opex | | 6.324 | 0.112 | 6.436 |
| Labour Overtime | | 5.499 | 0.016 | 5.515 |
| Materials | | 0.723 | -0.025 | 0.698 |
| Material Oncost | | 0.054 | -0.003 | 0.051 |
| Contractors | | 2.293 | 0.172 | 2.465 |
| Other Operating Costs | | 0.131 | 0.016 | 0.147 |
| | | **15.024** | **0.288** | **15.312** |

| $ million real category | Ord Labour | Overtime | Materials | Contractor | Other | Total |
|---|---|---|---|---|---|---|
| Front line response: | 6.436 | 4.971 | 0.749 | 2.465 | 0.147 | 14.768 |
| Support Services | | 0.544 | | | | 0.544 |
| **TOTAL** | **6.436** | **5.515** | **0.749** | **2.465** | **0.147** | **15.312** |

### 6.2.1 Expenditure by Element

Expenditure by element is as follows:

- **Labour**

  Energex's response to the February-March 2022 Flood Event was extremely labour intensive, not only requiring the assignment of internal labour field resources to the flood affected areas but also Ergon Energy Network and contract labour. The use of internal labour resources was managed in compliance with Energex's safety and fatigue management policies.

  Labour incurred during the flood was costed based on Energex's standard labour costing processes. The rates vary between the type of resource deployed by Energex or Ergon Energy Network and, while the rates are standard across the distribution business, they vary according to the ten labour resource types. The rate is designed to be inclusive of allowance and labour on-cost.

- **Contractors**

  As a Government Owned Corporation, Energex must comply with the strategies and objectives of the Queensland State Purchasing Policy. This Policy requires Energex to adopt a strategic and considered approach to procurement management to achieve value for money and ensure probity and accountability for its procurement outcomes.

Energex manages a significant proportion of its contractor engagement through formal procurement arrangements. Under these arrangements Energex engages in market-based tendering and assessment of contractors to establish long-term, flexible and lowest supply chain cost contracts. Approximately 84 per cent of contractor expenditure incurred during the February-March 2022 Flood Event was for contractors covered by these arrangements.

Due to the time-critical and safety-focused nature of Energex's emergency response, the remaining contractor expenditure was incurred on an "as needed" basis, with invoices reviewed for reasonableness prior to payment.

Energex also utilised established Memoranda of Understanding with other Network Service Providers to provide support during this event.

Typical contractor spends deployed for the event included aerial surveillance, traffic control, security arrangements, and earthmoving contractors.

- **Materials**

  Materials primarily represent Energex Store's issue of materials used by field resources in cleaning, repairing, and maintaining network assets. Minor purchases of materials not readily available from the Stores were sourced directly from suppliers due to the urgency of requirement. Materials requisitioned included:

  - Generator maintenance parts and consumables required to operate mobile generators during the flood event;
  - Relays used in the restoration of substations;
  - Cross-arms and cable used in repairing distribution assets; and
  - Cleaning materials.

### 6.2.2 Expenditure by Function

Expenditure by function is as follows:

- **Frontline Response**

  When storms and floods impact Energex's network, appropriately qualified employees are required to address safety risks and restore supply to customers. The response required a significant deployment of Energex crews and assistance from Ergon Energy Network.

Typical service response included:

- Network switching operating activities from control centres and appropriate frontline support;
- Restringing and repair of fallen conductor (downed powerlines);
- Damage assessment and hazard reductions;
- Attendance to high voltage lockouts;
- De-energisation of assets due to safety concerns; and
- Cleanout of water inundation to underground pillars, padmount transformers and ground substations and ring switching units.

These key operating tasks are labour intensive and not of a capital nature.

- **Field Services**

With the onset of major flooding, field crews began pre-emptively de-energising electricity assets that were at risk of inundation or needed to be de-energised to ensure the safety of the community and to preserve network assets. Field crews also undertook sandbagging of facilities to limit flood inundation. This activity resulted in a significant amount of labour incurred as overtime. However, it was considered prudent to ensure the safe and timely restoration of electricity supply to customers consistent with community expectations.

During the flooding, inspection activities occurred to assess the extent of the flood impact and to effectively plan specific targeted responses by feeder and area to maximise the effectiveness of and assist in the overall prioritisation of restoration efforts.

Following the flooding, significant effort was required to restore electricity supply to customers. This effort included:

- Inspection (including foot, car and helicopter patrols);
- Maintenance of inundated distribution network equipment (draining, cleaning and drying of distribution assets and isolation and re-energisation of the distribution network); and
- Network data validation.

In addition to the extensive internal labour used throughout the flood event, field contract services were contracted to provide the following services:

- Civil construction;
- Customer services – connections;
- Distribution network overhead and underground services;
- Earthmoving and debris removal;
- Equipment and stores transport;
- Equipment hires;
- Generator support;
- Helicopter hire;
- Property repair and landscaping;
- Streetlight maintenance;
- Towing and equipment recovery;
- Traffic control; and
- Vegetation clearance and disposal.

- **Network Operations and Control**

Network Operations was responsible for the coordination of Energex's response to the event. The labour costs represent staff involved in coordinating the emergency event room and managing the high-level response, including:

- Monitoring and operating the network;
- Receiving and prioritising work requests;
- Requesting dispatch of field crews;
- Network switching; and
- Reporting of outage and other relevant information.

- **Coordination, backup office support and customer engagement**

  Additional coordination, back-office support and customer engagement activities were performed as part of the response to the February-March 2022 Flood Event. These support areas include conducting planning and intelligence functions, safety support, logistics and customer and external stakeholder engagement. Only the incremental costs, such as overtime, have been included in this application.

  - **Materials Warehouse & Logistics**

    Energex's materials warehouse operated 24 hours a day during the flood event to ensure materials were provided quickly and efficiently to crews working in the flood affected areas.

    Due to the volume of goods being transported and the need for urgent delivery, Energex did not have the manpower or available vehicles to cater for the evolving requirements. As a result, contractors were engaged to provide transport of materials to depots and field crews.

  - **Media, Community and Government Liaison**

    Energex Corporate Communications staff provided 24 hours a day access for television, radio and print media to ensure customers, the community and Government agencies were constantly informed of safety issues, the impact of the event on Energex's network and ongoing response to restoration.

    More than 100 media enquiries were managed throughout the event, with many live to air news interviews and 29 situation reports provided to key stakeholders.

  - **Safety and Records Management**

    Overtime was incurred in relation to the testing of safety and live line equipment and updating meter and meter reading records for meters replaced during the event.

## 6.3 Guaranteed Service Level Payments

Energex is subject to the Electricity Distribution Network Code (EDNC) in Queensland which requires it to make guaranteed service level (GSL) payments to small customers where service levels are not met. The payments relate to, for instance, the duration and frequency of customer outages, wrongful disconnection, the timeliness of connections and reconnections, and notification of planned interruptions.

The EDNC requires the Queensland Competition Authority to review the GSL measures, thresholds and payment amounts that will apply at the beginning of each regulatory control period. The regulatory control periods coincide with the regulatory periods for the distributor's revenue determinations by the AER, with the current period running from 1 July 2020 to 30 June 2025.

The GSL payments that have been included in the incremental costs are for late connections. An ordinary monthly performance average was deducted from what was incurred between the impacted months in February 2022 to May 2022 to calculate an incremental impact.

## 6.4 Emergency Capital Works

Energex will be required to undertake a number of key capital works to complete recovery from the February-March 2022 Flood Event. A summary of these works is below:

***Table 6.6: Emergency Incremental Capex 2021-22 dollars***

| $ million real | 2020-21 | 2021-22 | 2022-23 | TOTAL |
|---|---|---|---|---|
| SRTS SSVPK Replace 11kV Cable Supports | | | 0.039 | 0.039 |
| SRTS SSVPK Replace 110kV Cable Terms | | 0.569 | 0.396 | 0.965 |
| SSAFD Replace Generator Kiosk | | | 0.052 | 0.052 |
| SRTS SSMLS Ventilation | | 0.006 | 0.065 | 0.071 |
| P576307 Flood Damage 33kV pole - Moggill Ferry | | | 0.320 | 0.320 |
| SRTS SSAMM Replace 11kV Switchboard | | 0.372 | | 0.372 |
| SRTS SE GC SSKRA Landslide Remediation | | 0.013 | 2.797 | 2.810 |
| **TOTAL** | | **0.960** | **3.668** | **4.628** |

In summary, $0.96 million was expended in 2021-22 and $3.6 million in expenditure is planned to be expended in 2022-23. The expenditure above is expressed in real terms 2021-22 dollars.

### 6.4.1 Emergency Capital Works - Replace 11 kV cable supports Victoria Park Substation

In the February-March 2022 Flood Event, it was identified that the cable basement of the Victoria Park substation had been inundated with water. As the water was pumped away, an inspection of the basement identified that several of the 11kV cable termination steel structures had buckled along with numerous 11kV cable support structures. Further investigation revealed that the large amount of water ingress had caused the floating concrete floor of the cable basement to lift approximately 150 millimetres. This change in floor levels caused the 11kV cable support structures to “buckle / bend” at various points.

The purpose of this project is to replace / repair the damaged cable supports. The damage is shown in the images below.

***Figures 6, 7, 8 and 9: Victoria Park Substation cable basement***

### 6.4.2 Emergency Capital Works – Replace 110kV Cable Terminations Victoria Park Substation

In addition to the above, an inspection of the basement identified several of the 110kV cable termination steel structures had buckled. Further investigation revealed that the large amount of water ingress had caused the floating concrete floor of the cable basement to lift approximately 150 millimetres. This change in floor levels caused the 110kV cable terminations in breakers TR2, TR3, TR5, TR6, F835, F810 and F809 to "buckle / bend" at the entry to the switchgear along with the steel cable support structures.

The objective of this planned project is to replace the existing cable supports and replace or re-terminate the bent 110kV cable terminations. The damage is shown in the images below.

***Figure 10: 110kV Ceiling Mounted Cable Supports; and Figure 11: Existing terminations***

### 6.4.3 Emergency Capital Works – Replace Archerfield Generator Kiosk

The mobile substation connection kiosk at Archerfield was damaged due to flooding. The damaged kiosk is de-energised but is still commissioned. Voltage control is almost impossible due to a smelter / metal scrap yard supplied from the substation.

It has been decided to replace the cubicle with an identical unit and create a flood mitigation strategy for Archerfield Substation that will ensure the cubicle is de-energised prior to inundation.

Figures 12-14 show an aerial view of the Archerfield Substation and damage to the connection cubicle.

*Figure 12: Aerial view of Archerfield Substation and generator connection kiosk*

*Figure 13: Connection Cubicle (looking North); and Figure 14: Connection Cubicle (looking South)*

### 6.4.4 Emergency Capital Works – McLachlan Street Substation - Install Ventilation

As a result of wet conditions, substantial mould growth has been identified both internally and externally to stair 2 of building 2 at McLachlan Street. The images below show the resulting damage from the wet conditions. Further investigation has determined that water ingress has occurred through the rock-block wall and ceiling due to the porous nature of the concrete and inadequate waterproofing. Additionally, the stairwell has no ventilation to remove heat or moisture. It has been decided that to prevent further reoccurrence Energex will repaint the stairway wall and roof, install flashing on the stairway roof and a ventilation system / fan in the stairwell.

***Figure 15, 16 and 17: Location of Fire Stair***

### 6.4.5 Emergency Capital Works – Repair Concrete Pole at Moggill

Energex 33kV feeder 357 has a river crossing adjacent to the Moggill Ferry, with 37 metre concrete poles on both sides. During the February-March 2022 Flood Event, water levels rose high up on the poles, with the pole on the eastern side battered by debris, resulting in damage to the pole as shown in the images below. The objective of this project is to install rock around the pole to restore ground conditions and repair the pole.

***Figures 18, 19 ,20 and 21: Concrete Pole, Moggill***

### 6.4.6 Emergency Capital Works – Central Business District Substation

The three-feeder mesh commercial and industrial substation located at 42 Albert Street, Brisbane comprises 1 x Safe Plus three CB 11kV switchboard, 3 x 1500kVA dry type transformers, 3 x LV isolators, 1 x pilot isolation cubicle, 1 x fibre optic patch panel and 1 x 48V battery bank and charger. The substation supplies the building at 42 Albert Street, which is primarily commercial office space and has a contracted demand of 3.3mVA. During the February-March 2022 Flood Event, the substation was inundated with water ultimately leading to failure of the 11kV Safe Plus switchboard.

### 6.4.7 Emergency Capital Works – Landslide Kirra Substation

Due to the February-March 2022 Flood Event, a landslide (refer to images below) occurred at Energex's Kirra Substation. Further investigation has determined that water ingress has occurred through the rock face at the rear of the property and due to the porous nature of the material, several landslides occurred.

The landslide occurred on Energex property, where a portion of a cliff broke away and slid towards the Kirra Substation fence. An evaluation by a geotechnical consultant has identified that this situation is still not stable, with risk of further landslides occurring, particularly during significant rainfall events. Further landslides pose a safety risk to Energex staff and contractors and neighbouring property owners. The objective is to reinforce the rock face and slope to prevent further reoccurrence.

***Figures 22, 23, 24 and 25: Kirra Substation***

# 7 ELIGIBLE AND PROPOSED COST THROUGH AMOUNTS

In the context of the February-March 2022 Flood Event, clause 6.6.1(c) of the NER requires Energex to identify:

- The eligible pass through amount in respect of this positive change event; and
- The positive pass through amount Energex proposes to pass through to Distribution Network Users in each regulatory year during the 2020-25 regulatory control period.

## 7.1 Eligible pass through amount

The eligible pass through amount is the increase in costs incurred in the provision of direct control services as a result of the positive change event. The amount includes all operating and capital expenditure incurred and likely to be incurred until the end of the regulatory period in which the positive change event occurred.

The eligible pass through amount of $20.2 million (real 2021-22) in operating and capital expenditure was incurred in responding to the February-March 2022 Flood Event. These incremental costs were identified in section 6 of this application. In determining the eligible pass through amount, only incremental costs attributable were included.

Attachment 3 provides a build-up of the costs incurred to determine the eligible pass through amount. Costs already incurred are identified and a forecast of the costs yet to be incurred is provided.

Table 7.1 specifies the eligible cost pass through amounts associated with the February-March 2022 Flood Event. The costs include both actual costs and forecast costs.

***Table 7.1: February-March Flood incurred costs Incremental Real***

| $ million ($2022) | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|---|---|---|---|---|---|---|
| Emergency (replacement) capital works | | 0.96 | 3.67 | | | 4.63 |
| Emergency corrective works (opex) | | 15.02 | 0.29 | | | 15.31 |
| Other operating costs (GSL) | | 0.29 | | | | 0.29 |
| **Total** | | **16.27** | **3.96** | | | **20.23** |

The actual costs already incurred (above) were extracted from our enterprise resource planning and accounting system (SAP). On-going or future work estimates have been prepared based on estimating tools and represent fully scoped projects in Energex's current pipeline of works.

## 7.2 Costs included in eligible pass through amount are solely as a consequence of the positive change event

As previously stated, Energex must only seek to recover the incremental costs incurred from the pass through event, being the February-March 2022 Flood Event. In section 6, Energex has described the incremental costs incurred because of the flood event, focusing on the additional work undertaken.

In deriving the eligible pass through amount, Energex included only the incremental costs for those activities that were incurred solely as a result of the positive change event. All expenditure incurred by Energex in responding to the flood event has been reviewed to ensure that it:

- Can be specifically attributed to Energex's response to the flood events in South East Queensland;
- Has been conservatively adjusted to remove overlaps between "business as usual" operations funded through Energex's distribution determination and those activities undertaken as a result of the February-March 2022 Flood Event; and
- Reflects prudent and efficient expenditure in the context of the significant operational challenges presented by the flood event.

Specifically, Energex excluded the following costs from this application, given the difficulties in clearly distinguishing the incremental nature of the costs:

- Corporate overheads;
- Ordinary time for support resources;
- Fleet allocation charges for operating costs and depreciation; and
- Failed in-service replacement of high voltage equipment.

Energex captured expenditures that were in response to the February-March 2022 Flood Event in a manner consistent with our accounting framework, creating specific projects and work orders to clearly record and track the costs incurred due to the floods. Our accounting structure allowed us to record costs as business-as-usual or flood-specific, and into capital and operating expenditure categories.

## 7.3 Efficiency of eligible pass through amount

Clause 6.6.1(j)(3) of the NER requires the AER to consider the efficiency of our "decisions and actions" in relation to the risks presented by the February-March 2022 Flood Event. This must include "whether we failed to take any action that could have been reasonably taken to reduce the magnitude of the eligible pass through amount".

Energex's preparedness for natural hazards affecting the network and our actions to restore services, as outlined in section 5, after the impact of the flood event ensured an efficient response.

The measures Energex adopts to efficiently manage risk from the potential impact of numerous natural hazards are set out in section 4 "Governance Arrangements". Information about the efficiency and prudence of our approach to insurance is discussed in section 3.4.3.

## 7.4 Positive pass through amount

Clause 6.6.1(c)(4) of the NER requires us to specify the positive pass through amount that we propose in relation to the positive change event. The positive pass through amount is defined as an amount not exceeding the eligible pass through amount.

Energex proposes a positive pass through amount of $17.03 million (smoothed) arising from the operating and capital expenditure summarised in section 7.1 above to be passed through as indicated in Table 7.2 below.

***Table 7.2: Positive pass through amount***

| $ million (nominal) | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|---|---|---|---|---|---|
| Return on capital | - | 0.002 | 0.045 | 0.209 | 0.203 |
| Return of capital | - | -0.001 | -0.006 | -0.024 | -0.023 |
| Operating expenditure | - | 15.31 | 0.3 | - | - |
| Tax | - | - | - | - | - |
| Building block revenue | - | 15.311 | 0.339 | 0.185 | 0.18 |
| **Smoothed revenue** | **-** | **4.11** | **4.21** | **4.3** | **4.4** |

The proposed positive pass through amount has been calculated as the change in our required revenues for the 2020-25 regulatory control period due to the positive change event. That is, our proposed positive pass through amount incorporates the operating expenditure and return on capital and return of capital for the 2020-25 regulatory control period arising from the incremental expenditure from the February-March 2022 Flood Event. The Post Tax Revenue Model used to calculate the pass through amount for this application is provided as Attachment 4.

## 7.5 Pass through amount in each regulatory year

Clause 6.6.1(c)(5) of the NER requires that we specify the amount that we propose to pass through to customers in the year, and each regulatory year after that, in which the positive change event occurred. We propose to recover the positive pass through amount of $17.03 million (smoothed) in 2024-25, the last year of the current regulatory control period.

It is expected that recovery of the pass through amount of $17.03 million in network charges for the 2024-25 regulatory year will not significantly impact customers' electricity bills, with the increase to an average residential customer's network charges estimated to be $8.13.



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