Ausgrid pass through application

2019-20 storm season

31 July 2020

Content

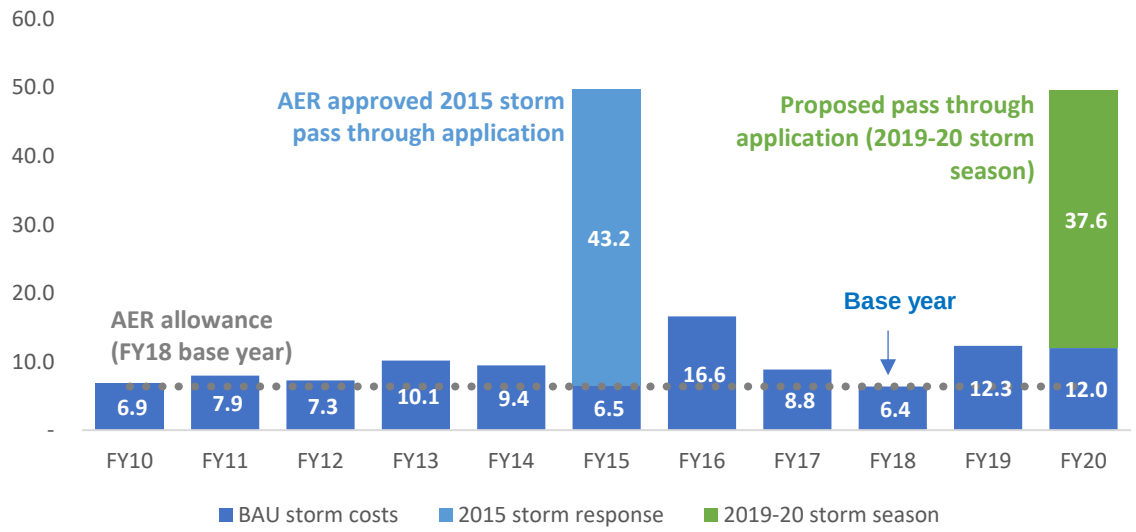
EXECUTIVE SUMMARY

This is an application under clause 6.6.1(a) of the National Electricity Rules (NER) seeking approval from the Australian Energy Regulator (AER) to pass through the additional costs Ausgrid incurred in response to the 2019-20 storm season.

Ausgrid owns and operates a shared electricity network that powers the homes and businesses of more than 4 million Australians living and working in an area that stretches from the Sydney CBD to the Upper Hunter. As the provider of an essential service, we recognise the important role we play, not just in our customers' lives, but in enabling a significant part of the Australian economy.

Figure 1 below shows that we incurred materially higher storm response costs during the 2019-20 storm season. Our AER approved allowance for storm response activities was derived from the $6.4 million ($nominal) we spent in our FY18 base year. Our actual storm costs in FY20 were nearly 8 times that allowance. Similarly high storm costs were incurred in FY15, which was the subject of a cost pass through application and subsequent approval by the AER.

Figure 1 Historical and FY20 storm response costs ($ nominal)



Our proposed pass through amount in relation to the 2019-20 storm season is $37.6 million (real FY20). This is equal to the additional expenditure we incurred in relation to the 2019-20 storm season – incremental costs that were not anticipated, and not funded, at the time the AER made our current 2019-24 distribution determination. Our application, if approved, will enable us to recover the efficient expenditure needed to maintain a safe, reliable and secure distribution network for our customers.

Our response to storms

We plan for storm seasons and take advice from weather experts about a forthcoming season. When storms or other extreme weather events occur, our immediate priority is the safety and wellbeing of our customers and other members of the public, as well as the extensive group of people, including our staff, who work to repair the damage.

Storms can have a significant impact on our network. The damaging winds that they

produce can bring down poles, distribution spans and other electricity assets. In this state, these assets can present serious safety hazards to both the community and essential workers. The damage also results in outages on our network, causing significant inconvenience and disruption for our customers.

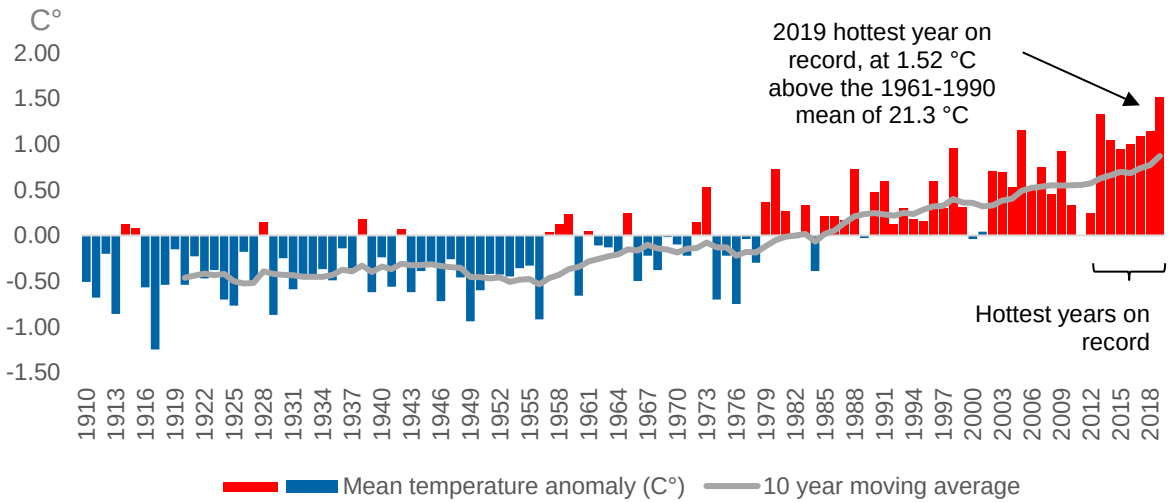
We act as quickly as possible to respond to storms on our network, so that we maintain a safe and secure energy network service at a level of reliability our customers' value. Responding to major events that impact our network, clearing safety hazards and restoring power are among the most important services we provide. Budgeting and planning for storms is, however, becoming increasingly difficult, as the rise in global mean temperatures leads to more extreme weather.

Our changing climate

The global mean temperature for 2019 was around 1.1°C above the 1850–1900 baseline, used as an approximation of preindustrial levels.[1]

In Australia, we recently had our warmest year on record. The 2019 national mean temperature was 1.52 °C above average, well above the previous record of +1.33 °C set in 2013. Every year since 2013 has been among the ten warmest on record in Australia, as shown in Figure 2 below.

Figure 2 Australian annual mean temperature variations[2]



As a prudent network business, we recognise the importance of ensuring that our network is resilient to the potential impact of more extreme weather events that have accompanied global mean temperature increases. Despite our prudent action, including storm response planning, in advance of the storm season, the combination of a sustained period of drought followed by a series of storm events during the 2019-20 storm season, including torrential rainfall and damaging winds, led to significant impacts on our network and customers.

Compounding impact of the drought

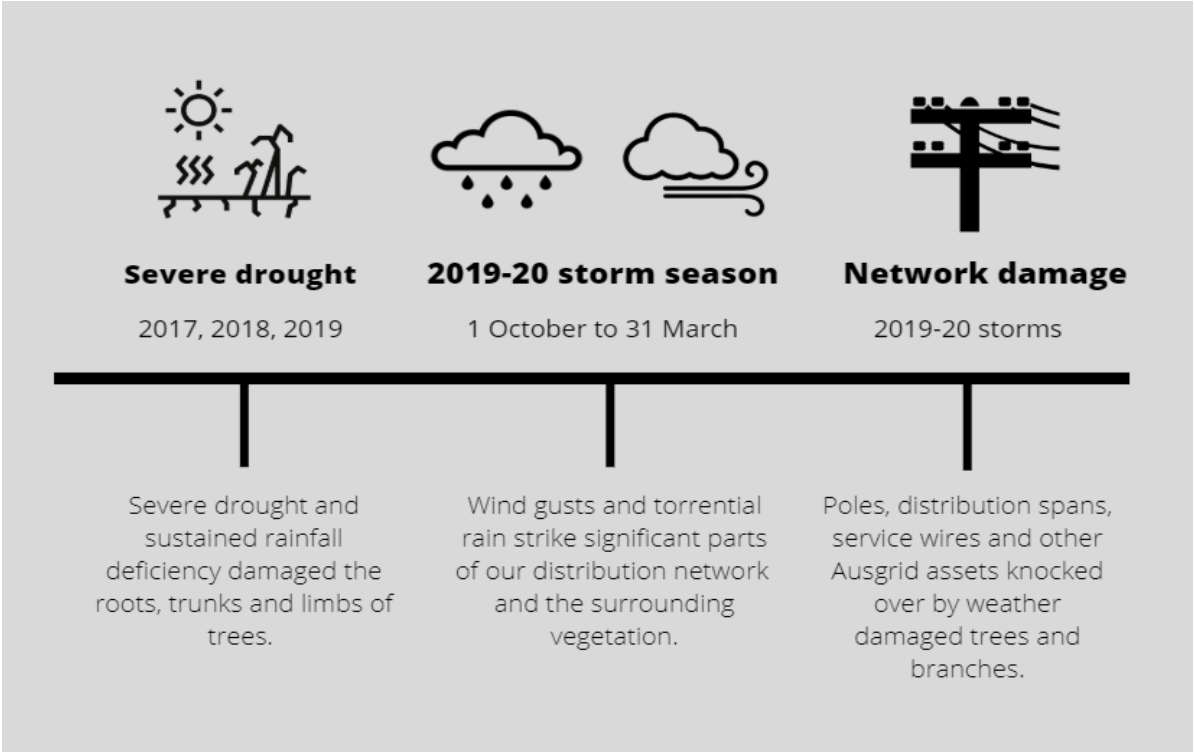
The wind, rain and lightning that struck during the 2019-20 storm season was significant yet what amplified the impact of these weather conditions, and caused significant damage to

1 https://public.wmo.int/en/media/press-release/wmo-confirms-2019-second-hottest-year-record
2 Bureau of Meteorology: http://www.bom.gov.au/climate/change/#tabs=Tracker

our network, can be traced back to the NSW drought which ended in 2019. We have obtained an expert scientific report on the link between the drought and the subsequent impact of the storms on our network.

The report establishes a common underlying cause for the incremental costs we incurred during the 2019-20 storm season, linked to the drought in NSW and the effect it had on making vegetation surrounding our network more susceptible to tree and branch falls – the largest contributor to damage on our network during storm activity. The figure below shows the relationship between the prolonged drought, the subsequent 2019-20 storm season, and network damage.

Figure 3 Impact of the drought on the 2019-20 storm season



Whilst the severity of the damage from the 2019-20 storm season is linked to the prior drought period, it was not possible to predict the severity of the storm season. We commissioned meteorological firm, Weather Zone, to report on the forthcoming storm season in September 2019.

Weather Zone did not predict the severity of the 2019-20 storm season. Instead, it forecast a mild season, with severe thunderstorm activity expected to be average to below average across the eastern states.[3] In reality, two storm event natural disasters were declared during the 2019-20 storm season, which illustrates the unpredictability of these events.

Our pass through application for the 2019-20 storm seasons meets all of the requirements in the NER. We have also had regard to recent AER cost pass through determinations to ensure that our approach is consistent with good regulatory practice.

We set out a compliance checklist against the NER requirements in section 9.

[3] Weather Zone, *Seasonal Risk Report*, September 2019, p. 10 (Attachment C)

1 INTRODUCTION

1.1 About Ausgrid and how we are regulated

Ausgrid owns and operates a shared electricity network that stretches over 22,000 square kilometres, and which powers the homes and businesses of more than 4 million Australians living and working in Sydney, the Central Coast and the Hunter Valley.

Day-to-day, we are responsible for operating, maintaining, repairing and building our network of substations, power lines and underground cables. Our network transports energy from generators to homes and businesses. Our planning includes ensuring the network is ready for a future where renewables play a major role in the power mix, and households and businesses can generate their own electricity and sell it back through the grid.

1.1.1 Regulatory framework

The AER is responsible for setting the revenue we can recover from our customers to make sure they have safe and reliable power.

To do this, the AER assesses our expenditure plans to determine whether they reflect prudent and efficient spending, in accordance with the NER that govern the way we are regulated.

In April 2019, the AER set our revenues for a five-year regulatory control period from 1 July 2019 to 30 June 2024. The AER's determination can be found on its website here: https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/ausgrid-determination-2019-24.

The AER takes a 'building block' approach to setting our revenue allowance. This provides our business with enough revenue to cover our capital, operating, finance and other costs based on the information available to the AER at the time.

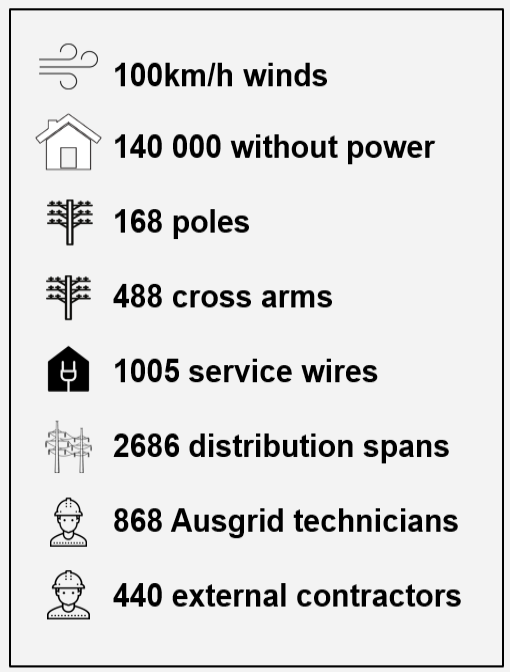
1.1.2 About this application

This is an application under clause 6.6.1(a) of the NER for the AER to approve a pass through for $37.6 million in additional costs incurred in responding to the 2019-20 storm season and its impact on our network. This application refers to the 'storm season', which runs from 1 October to 31 March. The NSW State Emergency Services describes this period as the 'Severe Thunderstorm Season', as it shows a marked tendency for increased

storm frequency in NSW.[4]

The additional costs we incurred as a result of the 2019-20 storm season were unforeseeable at the time the AER made its 2019-24 determination in April 2019. Approving our application will allow us to recover our efficient costs of maintaining the safety and reliability of our services in accordance with our regulatory obligations and our customers' expectations.

The 2019-20 storm season caused widespread damage throughout parts of NSW and heavily impacted our network. At times, wind gusts exceeded 100km/h with the formation of a strong low-pressure system off the coast of NSW creating cyclone-like conditions. In February 2020 alone, the Bureau of Metrology reports that 441.6 mm of rain fell in Sydney – more than 370% above the long-term average.[5]



The extreme weather resulted in flooding, fallen trees and poles, and significant damage to overhead power lines causing widespread power outages throughout our network. At its peak, over 140 000 homes and businesses, or about 8% of our total customer base, were without power.

The damage from the 2019-20 storms resulted in natural disasters being declared in November, January and February, each of which impacted our network.

Our application steps through each of the requirements in the NER to pass through the additional costs incurred. For further details see our 'written statement' in section 1.3.1 of this document and the 'regulatory checklist' in section 9.

We note that the AER has kindly granted a time extension for this application under clause 6.6.1(k) of the NER, to allow the application to be submitted no later than 1 August 2020.

In preparing this application we have sought, where relevant, to apply the AER's approach in other pass through determinations, including its approval of our 2015 storm pass through application.[6]

1.2 Storm related expenditure

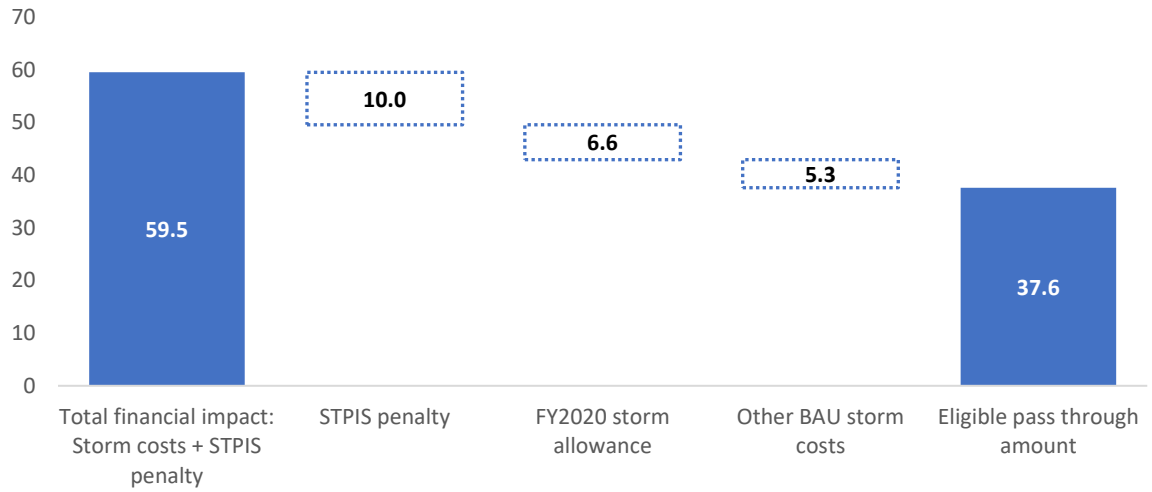
Every year we respond to outages on our network caused by extreme weather events. Our priority at these times is to protect the community and our workforce by eliminating safety hazards that could cause serious injury or loss of life. When it is safe, our crews then restore supply of electricity to impacted customers as quickly as possible.

The total eligible pass through amount put forward in this application is $37.6 million (real

4 https://www.ses.nsw.gov.au/stormsafe/are-you-at-risk/storm-types/
5 http://www.bom.gov.au/climate/current/month/nsw/archive/202002.summary.shtml
6 AER, *Final decision: Ausgrid 2015 storm pass through*, December 2015.

FY20), which reflects the incremental costs we incurred in addressing the storms. The calculation excludes Service Target Performance Incentive Scheme (STPIS) penalties directly related to the storms and a level of business as usual (BAU) costs that were above our FY2020 funding allowance of $6.6 million, as shown in, as shown in Figure 1.1 below.

Figure 1.1 Eligible pass through amount ($million, real FY20)

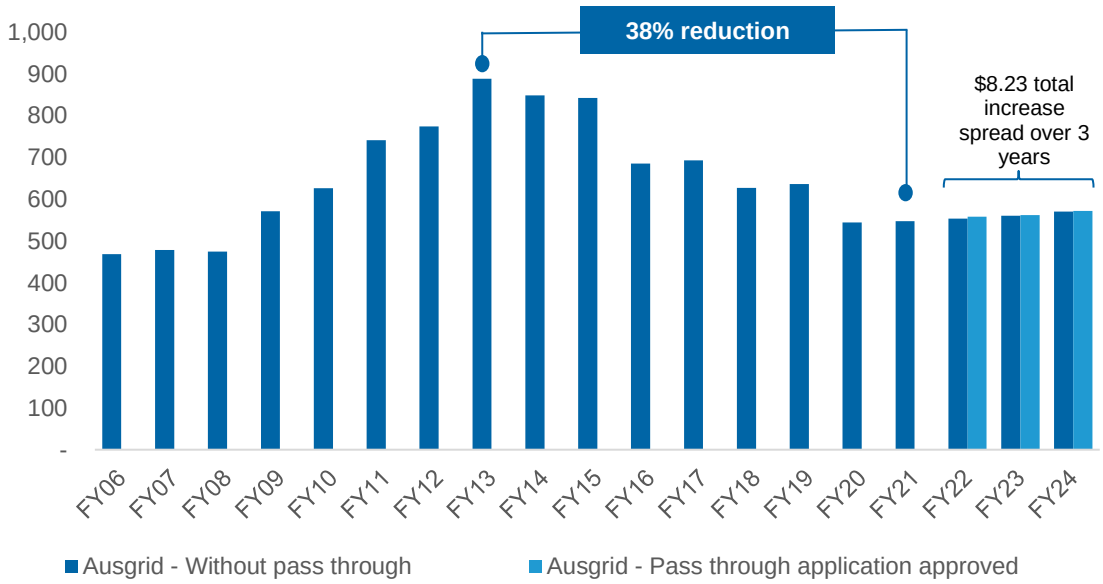


Note ^: Allowance of $6.6 m (real FY20) based on $6.4 m (nominal) in FY18 base year adjusted for inflation, real cost escalation and 0.5% assumed productivity adjustment

1.2.1 Bill impact of our pass through application

We are proposing to recover the pass through amount in relation to the additional storm response expenditure over a three year period. If approved, we estimate that our pass through application will lead to an increase in our residential revenue per customer of $2.75 per annum in the last three years of the current period ($nominal). This is shown in Figure 1.2 below together with the improvements in affordability we have made in recent years, including a 38% decrease in average residential network charges since FY13.

Figure 1.2 Residential revenue per customer ($nominal)



While any increase in network charges is unwelcome at this time, our view is that the pass through provisions in the NER offer the most appropriate mechanism to address the risks presented by extreme weather events. From a funding perspective, the only other way we could have managed the risk of an event like the 2019-20 storm season is by increasing our 2019-24 expenditure forecast submitted in April 2018. We did not do this because, based on the information we had at the time, an uplift in our ex ante expenditure for more severe storm activity risked unnecessarily increasing customer bills.

Further work, including stakeholder consultation, needs to be done on investigating whether electricity distributors should strengthen existing network resilience capabilities in anticipation for more extreme weather in the future. Until this is done, it is currently in the long-term interests of customers for the incremental cost associated with events like the 2019-20 storm season to be managed on an ex post basis via the pass through provisions in the NER.

1.3 Rule requirementes

1.3.1 Written statement required under the NER

To seek the approval of the AER to pass through a positive pass through amount, clause 6.6.1(c) of the NER requires us to submit a 'written statement' providing details about the 'positive change event'. Table 1.1 sets out the information and the evidence that must be included in this written statement, and where our application complies with each requirement. We have also noted the factors that may be considered by the AER in assessing a natural disaster pass through event.

Table 1.1 Compliance with written statement required under the NER

Requirement for a natural disaster event	Compliance	Details
Details of the positive change event	✓	Chapter 2
The date on which the positive change event occurred	✓	Chapter 3
The eligible pass through amount Ausgrid proposes in relation to the positive change event, including its materiality	✓	Sections 5.1 and 5.2
The amount of the positive pass through amount that Ausgrid proposes should be passed through to Distribution Network Users in the regulatory year in which, and each regulatory year after that in which, the positive change event occurred	✓	Section 5.1
Evidence of the actual and likely increase in costs	✓	Chapter 4
Evidence that such costs occur solely as a consequence of the positive change event	✓	Section 5.3

Factors to be considered by the AER, including insurance cover and whether a natural disaster has been declared	✓	Sections 2.2 and 6.3

1.3.2 AER assessment framework

If the AER determines that a positive change event has occurred, it must determine:

- the approved pass through amount; and
- the amount of the approved pass through amount that should be passed through to distribution network users in the regulatory year in which, and each regulatory year after that in which, the positive change event occurred.

In making this decision, the AER must take into account the factors listed in clause 6.6.1(j) of the NER. In addition, the National Electricity Law (NEL) requires the AER, in exercising its economic regulatory functions and powers, to do so in a manner that will or is likely to contribute to the achievement of the National Electricity Objective (NEO).

The NEL also specifies the revenue and pricing principles. This includes the requirement that network service providers, like Ausgrid, should be provided with a reasonable opportunity to recover at least the efficient costs the operator incurs in providing direct control services.[7]

[7] NEL, section 7A.

2 OUR CUSTOMERS

Our ambition is to become a more customer centric organisation. During the 2019-20 storm season, we sought to align our business towards this objective by taking a number of customer centric initiatives. These are outlined below, along with how we have sought to manage the impact of this cost pass through application on our customers.

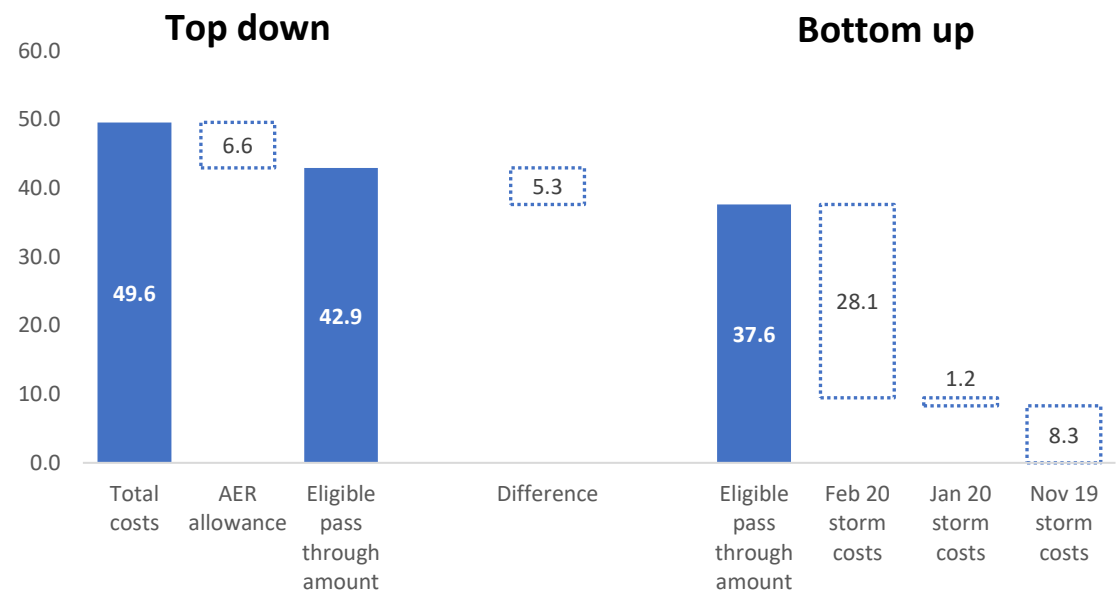
2.1 Managing the impact of our application

We recognise that any increase in the network component of customer bills will be unwelcome at this time. We have therefore sought to manage the price impact of passing through additional costs to our customers.

To calculate the eligible pass through amount of $37.6 million (real FY20), we employed a 'bottom up' approach. This summed the costs we incurred in responding to severe weather activity in November 2019, January 2020 and February 2020.

Alternatively, we could have undertaken a 'top down' method. This would have taken our total storm response costs ($49.6 m) in the FY20 regulatory year and then subtracted our AER allowance ($6.6 m).[8] As shown in Figure 2.1 below, a top down method would have calculated a larger eligible pass through amount than the bottom up approach which we have applied in this application.

Figure 2.1 Calculation of the eligible pass through amount ($m, real FY20)



The bottom up approach calculates a lower eligible pass through amount because it is based on the cost of major storm activity in November 2019, January 2020 and February 2020 only. We incurred other incremental costs during the 2019-20 storm season, which

8 Allowance of $6.6 m (real FY20) based on $6.4 m (nominal) storm response costs in FY18 base year adjusted for inflation, real cost escalation and 0.5% assumed productivity adjustment.

are not captured in our bottom up approach but which would have been caught by a top down method. This is driving the $5.3 million 'gap' in Figure 2.1.

Though it is arguable that the approach we have taken understates the full impact of the 2019-20 storm season, we have nonetheless sought to use a bottom approach. This is because it leads to a pass through amount that minimises price impacts on customers from this application.

2.2 How our response benefits all our customers

We shared a draft version of this pass through application with members of our Customer Consultative Committee (CCC) prior to submitting it to the AER. One of the key comments we received was in relation to how our application benefits all customers – not just those who lost power during the 2019-20 storm season. We agree that this is a key issue, which we have sought to address below.

2.2.1 Customer value derived from our application

The cost pass through mechanism in the NER is currently the least cost solution for all our customers with respect to managing the risks associated with extreme weather.

We can manage extreme weather risks in two ways under the existing economic regulatory framework administered by the AER. These are:

1. **ex ante method:** the AER approves an additional expenditure allowance in anticipation of an extreme weather event occurring; or

2. **ex post approach:** after an extreme weather event occurs, the AER allows the prudent and efficient costs incurred to be recovered from customers.

Our pass through application for the 2019-20 storm season is based on managing the risks associated with extreme weather under an ex post approach. This delivers the most value to all our customers, since the price they pay for our network services will only incorporate the cost of extreme weather events when they occur, and after the prudence and efficiency of the costs incurred have been reviewed by the AER.

As the risks associated with the rise in global mean temperatures increases, the current approach we employ may need to be re-evaluated. It may be that elements of an ex ante method should be adopted to improve the resilience of networks to flexibly respond to extreme weather events. Significantly more work, nonetheless, needs to be done in this area – including stakeholder consultation. Until this is completed, an ex post approach, as per this application, will deliver the most value to all our customers – not just those who lose power during a major storm. This is in terms of the price our customers pay for the cost of managing the risks associated with, and cost of responding to, extreme weather events.

2.3 Support for our customers

When storms occur on our network, the safety and wellbeing of our customers – along with our field crews and external contractors – become our priority.

At the peak of our storm response effort, we had more than 868 Ausgrid field personnel and 440 external contractors on the ground, committed to providing network safety and restoration services for our customers.

When a customer loses supply of electricity, we recognise that the provision of accurate and timely information about restoration times is critical. This resulted in Ausgrid dedicating additional resources to answering phone and social media inquiries. Over 169 200 phone calls were answered during the 2019-20 storm season.

Other initiatives implemented on the behalf of our customers are set out in a high level summary in Table 2.1 below. They range from using office staff as surge resources to answer phones calls and respond to social media inquiries, to conducting outbound calls to single service wire repair works.

Table 2.1 Customer centric initiatives in response to storms

Initiative	Description
Office staff deployed as surge resources	Office staff with experience in the field, field support or customer facing roles were identified and mobilised, with over 100 office staff used as spotters and storm room operators, and contact centre operations team members (covering phone and social media).
Call centres hours extended to 24/7	Contact centre operating hours extended to 24/7 operating self-sufficiently for 9 consecutive days without the systems control dispatch team providing their normal coverage between 1030pm and 630am.
Call centre capacity expanded	We expanded contact centre capacity and sites. New sites were mobilised from a systems, people and process perspective within 72hrs of the storm to enable the additional resources to be incorporated into contact centre operations.
Customer representatives assigned to each 'storm room'	Customer representatives assigned to each storm room to accompany depot crews visiting customers that require interruption of supply to undertake permanent repairs after a temporary fix had been used to restore supply.
Outbound calling to single service wire repair	Outbound calling to single service wire repair jobs to ascertain whether power had been restored, thereby reducing the need for operations to undertake field visits to verify.
Outbound calling and scheduling of accredited service provider (ASP) repairs	Outbound calling and scheduling of ASP repairs for customers with localised private connection damage, thereby enabling operations to schedule ASP repairs for customers who were unaware of their circumstances.
Phone and SMS services	Running a phone and SMS based registration process for remote area customers interested in household generators

3 2019-20 STORM SEASON

The 2019-20 storm season produced torrential rainfall, damaging winds and lightning. Before this extreme weather event, however, NSW was in drought. The combination of prolonged drought followed by severe storm activity led to materially higher costs during the 2019-20 storm season.

As already noted, the NSW State Emergency Services recognises that thunderstorms are concentrated during October to March. The information presented below explains why it is appropriate to define the pass through event as the 2019-20 storm season.

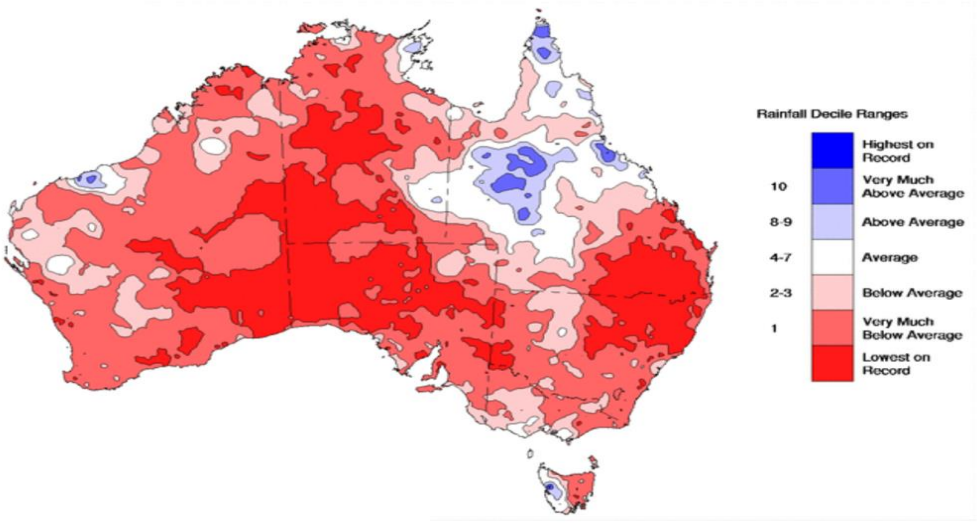
3.1 Severe rainfall deficiency preceded storm season

Droughts and extreme weather have always occurred but, with recent mean temperatures significantly above long term averages, they are now increasing in intensity and frequency.[9] The recent drought in NSW began in 2017 and impacted most of the state and a large part of Australia. By 2019, NSW had also experienced its driest year on record with 250.2 mm of rainfall across the state – 55% lower than average.[10]

Seaonal rainfall in NSW was below 200 mm for three consecutive years from 2017 to 2019, with 2018 and 2019 both below 150 mm.[11] This is the first recorded instance of this happening: there is no previous record of two consecutive years of seasonal rainfall below 150 mm, or three consecutive years below 200 mm.[12]

Figure 3.1 shows the Australian rainfall decile ranges in 2019 compared to the average annual rainfall.

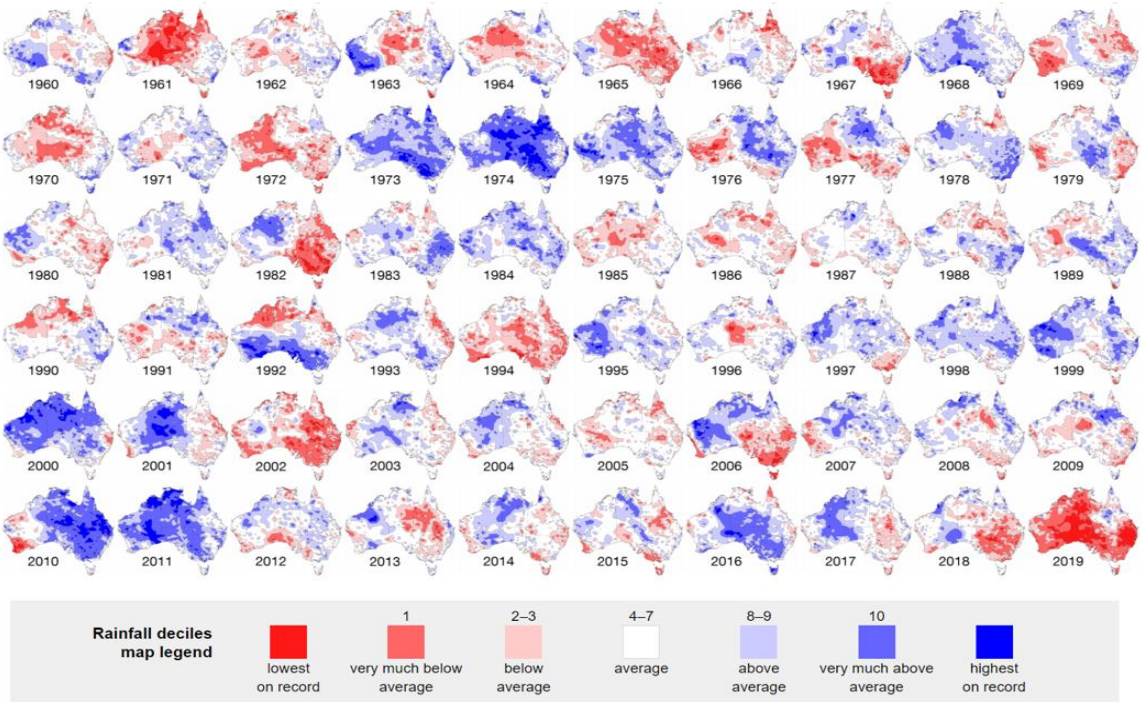
Figure 3.1 Rainfall in Australia in 2019[13]



9 http://www.bom.gov.au/climate/updates/articles/a023.shtml
10 http://www.bom.gov.au/climate/current/annual/aus/#tabs=Rainfall
11 http://www.bom.gov.au/climate/drought/archive/20200408.archive.shtml#tabs=Drought
12 http://www.bom.gov.au/climate/drought/archive/20200408.archive.shtml#tabs=Drought
13 http://www.bom.gov.au/climate/change/#tabs=Tracker

The decile rank of annual rainfall since 1960, as set out below, shows that most of Australia experienced rainfall that was among the lowest on record in 2019. The Bureau of Meteorology noted that 2019 was the driest year in the 119 years since 1900.[14]

Figure 3.2 Decile rank of rainfall for each calendar year[15]



In order to understand the potential impact of the prolonged drought on the subsequent 2019-20 storm season, we obtained an expert report from Professor Belinda Medlyn and Associate Professor Brendan Choat at Western Sydney University's Hawkesbury Institute for the Environment[16]. The report draws on literature on the biomechanics of trees and their ability to withstand wind gusts following sustained rainfall deficiency. It explains that the high temperatures during the drought period exacerbated the impact of drought conditions on tree health by increasing evaporative demand.

The report supports our view that the 2019-20 storm season should be regarded as a single event, with a common underlying cause linking the materially higher costs we incurred. We return to this issue in section 4.4 of this application.

14 http://www.bom.gov.au/climate/current/annual/aus/#tabs=Rainfall

15 http://www.bom.gov.au/climate/history/rainfall/

16 Belinda Medlyn is Distinguished Professor of Ecosystem Modelling at the Hawkesbury Institute for the Environment, Western Sydney University. She is one of the world's leading ecosystem modellers, with over 25 years of experience in modelling responses of vegetation to environmental change. She has published over 150 peer-reviewed articles. She was a Clarivate Analytics Highly Cited Researcher in 2018-19, and in 2019 won the Australian Research Council Georgina Sweet Laureate Fellowship.

Associate Professor Brendan Choat is a plant physiologist working at the Hawkesbury Institute for the Environment, Western Sydney University. His research is focused on tree response to drought and quantification of physiological thresholds causing tree mortality. He has published extensively on these topics, with highly cited papers in some of the world's leading peer reviewed journals.

3.2 Torrential rain, damaging winds and lightning

In this section, we describe two major storms during the 2019-20 storm season – one towards the start of the season and one towards the end. Whilst we concentrate on these two storms, it is important to note that a natural disaster was also declared in relation to storms in January 2020.

The Minister for Agriculture, Drought and Emergency Management made the following comments in his press statement that accompanied the declaration of a natural disaster for the January and February storms[17]:

> *Disaster assistance has been extended to a further 12 local government areas across NSW to help people and businesses heavily impacted by storms and flooding which occurred in February.*
>
> *This extension means that disaster assistance has been activated in a total of 83 New South Wales local government areas, as well as Lord Howe Island, for storms and floods between 15 January and 23 February 2020. Assistance is being provided through the jointly funded Commonwealth-State Disaster Recovery Funding Arrangements (DRFA).*
>
> *The Minister for Emergency Management, David Littleproud said the impacts of the storms and floods in January and February are still being realised.*

The declaration of a natural disaster in relation to the November 2019 storms, the Minister specifically commented on the damage to powerlines[18]:

> *Disaster assistance is now available in the Campbelltown, Canterbury Bankstown, Hawkesbury, Hornsby, Ku-ring-gai, Lane Cove, Liverpool, Northern Beaches, Sutherland, and Willoughby council areas after severe storms on 26 November 2019.*
>
> *Assistance is being provided through the jointly funded Commonwealth-State Disaster Recovery Funding Arrangements.*
>
> *Minister for Natural Disaster and Emergency Management David Littleproud said the storms struck hard and fast, causing widespread damage.*
>
> *"Strong winds and hail tore up roofs, damaged cars and ripped down powerlines," Minister Littleproud said.*

The widespread and protracted impact of the 2019-20 storm season on our network is evidenced by the Minister's statements. We discuss the impact of the storm season on our network in section 3.3.

3.2.1 Early storm activity in 2019-20 season

The first major storm activity during the 2019-20 storm season occurred on 26 November 2019. While the extreme weather on this day was relatively brief and localised, it had a significant impact on our network and our customers.

17 https://minister.homeaffairs.gov.au/davidlittleproud/Pages/extension-disaster-assistance-NSW-storms-flood-february-2020.aspx

18 https://minister.homeaffairs.gov.au/davidlittleproud/Pages/extension-disaster-assistance-NSW-storms-flood-february-2020.aspx

The 26 November storm

The storm which struck parts of Sydney on 26 November 2019 caused significant damage to our network, including distribution poles, cross-arms, distribution spans and other electrical assets.

Storm formation

At 10.54 am on 26 November 2019, the Bureau of Meteorology issued a severe storm alert, warning that a cold front was passing through NSW and was likely to produce damaging winds.

The storm warning area, as shown in Figure 3.3 below, covered the Hunter, Metropolitan Sydney, Illawarra, Central Tablelands and parts of Southern Tablelands, North West Slopes and Plains and Central West Slopes and Plains Forecast Districts.

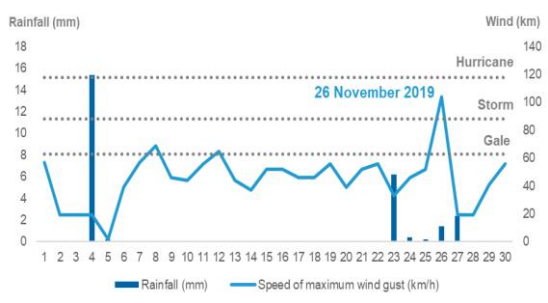
Figure 3.3 Storm warning alert

Impact of our network

Storm activity on 26 November 2019 resulted in significant damage to our network. Power was cut to 52,000 homes in less than 10 minutes after an intense burst of wild weather swept through Sydney.[19] Some customers described the wind gusts, which approached hurricane force speeds as a "mini-tornado".[20]

Figure 3.4 shows the daily maximum wind speed recorded at Observatory Hill in November 2019. Winds exceeded gale levels on two occasions (8 and 12 November 2019) and on 26 November 2019 wind gusts reached at least 104 km/h.

Figure 3.4 Rainfall and wind speeds



Impact greatest in 'leafy' suburbs of Sydney

The most heavily impacted areas were 'leafy' suburbs on the Lower and Upper North Shore of Sydney. Trees in these locations were torn from their roots, falling on to houses, cars and our network. Extreme winds also caused drought-stricken trees to drop their branches (see Figure 3.5 and Figure 3.6 on the next page). More than 1,800 hazards had to be cleared during the restoration effort, while NSW State Emergency Services received 1,200 calls for help.

Drought led damage

The drought which preceded the 2019-20 storm season played a significant role in causing the destruction experienced on our network. This is by making the vegetation near our network more susceptible to tree and branch falls.

More information about the role of the drought is set out in section 4.4 of this application.

19 https://www.abc.net.au/news/2019-11-26/sydney-storm-brings-down-trees-cuts-power-to-homes/11738798

20 https://www.abc.net.au/news/2019-11-27/ausgrid-warns-of-further-sydney-blackout-after-storms/11741378

Figure 3.5 Severity of tree damage during 26 November storm

Figure 3.6 Example of branch fall from 26 November storm

3.2.2 Later storm activity in the 2019-20 season

Severe storm activity was protracted through out the 2019-20 season, with rainfall levels increasing in the second half of the period. In January 2020, a total of 71.4 mm of rain was recorded at Observatory Hill.

There was then a significant increase in rainfall in February 2020. In just four days between 7 and 10 February 2020, approximately 392 mm of rainfall was recorded in the CBD, more than three times the average rainfall in the whole month, as shown in Figure 3.7. The daily rainfall throughout February 2020 is shown in Figure 3.8 below, together with the maximum daily windspeeds.

Figure 3.7 Sydney rainfall in Feb 2020 compared to average (mm)[21]

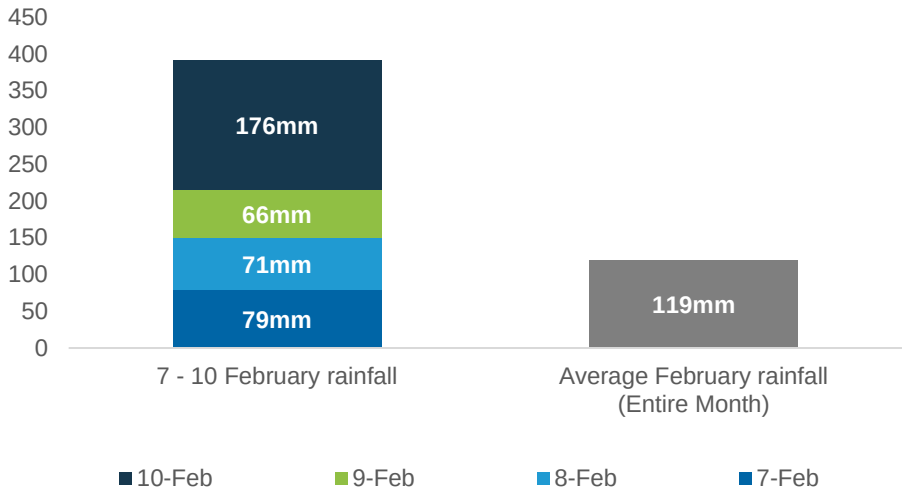
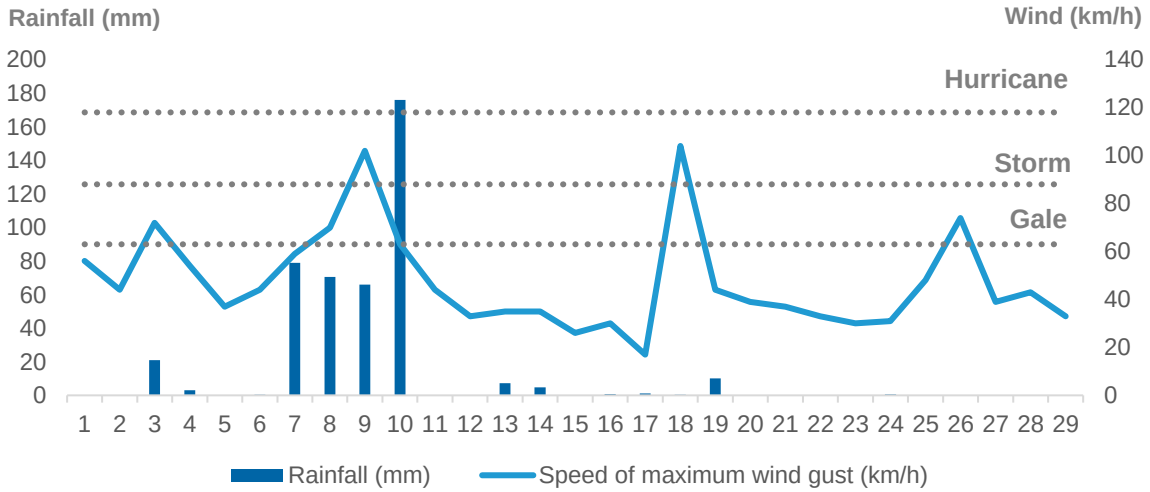


Figure 3.8 Daily February rainfall (mm) and max windspeeds (km/h)[22]



21 http://www.bom.gov.au/jsp/ncc/cdio/weatherData

22 http://www.bom.gov.au/climate/dwo/202002/html/IDCJDW2124.202002.shtml

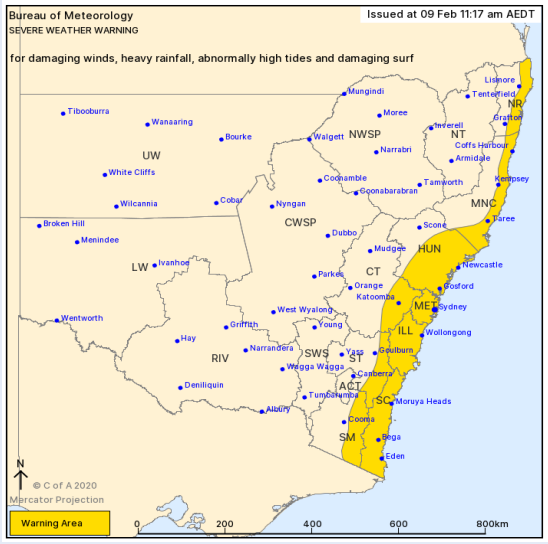
February 2020 storms

We closely monitored the development of storm activity throughout February 2020.

On 6 February 2020, the Bureau of Meteorology issued its first warning of a potentially significant storm that could impact our network area.

Further warnings were issued on 7, 8 and 9 February 2020.[23] By the 9th, the "warning area" covered most of the NSW coastline, as shown in Figure 3.9 below. This included Ausgrid's entire network footprint in Sydney and the Central Coast and most of our network area in the Hunter region of NSW.

Figure 3.9: Weather warning



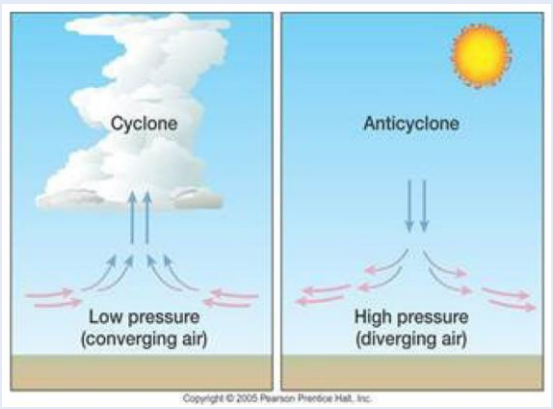
East Coast Low

Multiple reports referred to the weather conditions in February 2020 as an East Coast Low.

'East Coast Lows' are low-pressure systems that develop off the east coast of Australia, generally between Brisbane and eastern Victoria. The NSW Regional Office of the Bureau of Meteorology describes them as a system with a closed cyclonic circulation at the surface, forming and/or intensifying in a maritime environment within the vicinity of the east coast.

The formation of low-pressure systems is depicted in Figure 3.10. Air is dragged in and forced upwards where it cools and forms clouds. As this happens, winds are generated which are stronger in areas where low pressure systems are greatest. It is for this reason East Coast Lows are known to cause a significant amount of damage due to extreme winds.

Figure 3.10: Low pressure systems



Impact of East Coast Lows

The impacts of East Coast Lows are most significant when they 'cluster' with seasonal storms. The NSW Government notes:

> The most significant impacts from East Coast Lows occur when clusters of storms happen in the same season. The most intense ECLs tend to coincide with these seasonal storm clusters.[24]

For our network, the clustering of an East Coast Low with seasonal storms can be particularly damaging. This happened during the 2019-20 storm season with the February East Coast Low 'clustered' with seasonal storms from October 2019 to March 2020.

23 https://www.abc.net.au/news/2020-02-07/what-is-an-east-coast-low-wild-weekend-weather/11936190

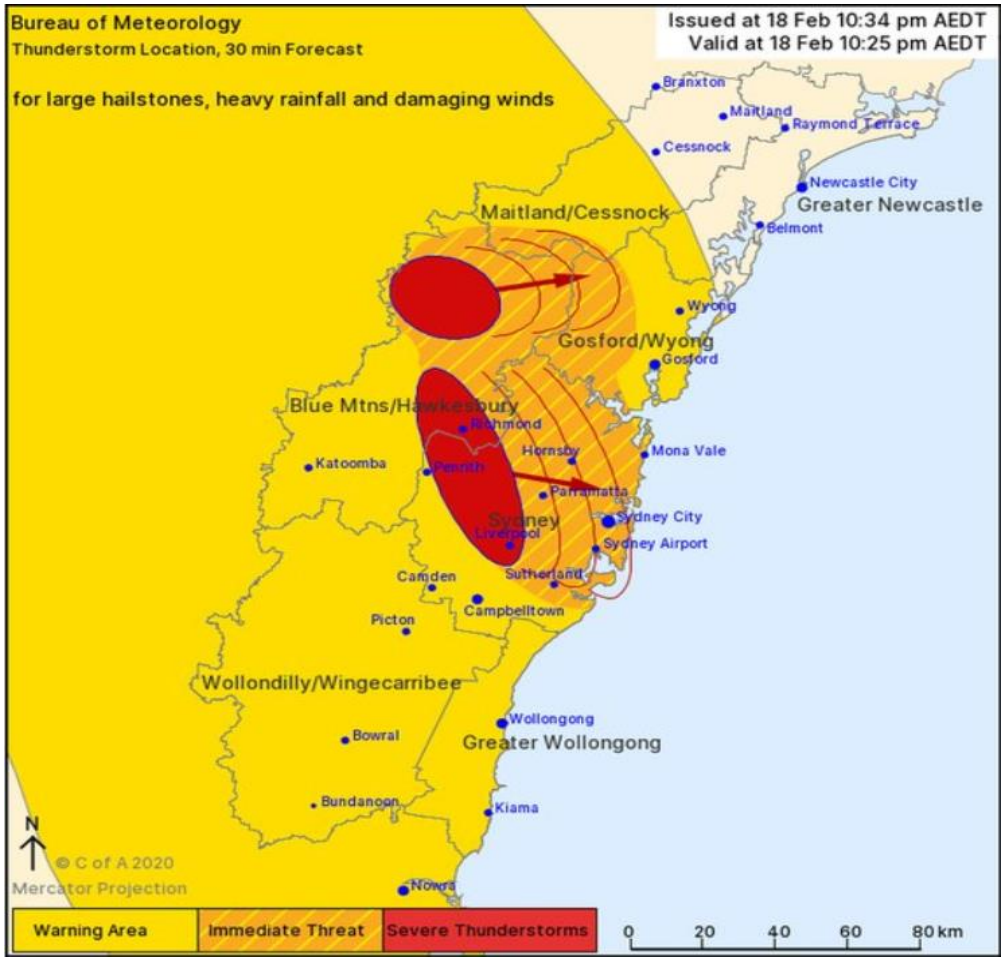
24 https://climatechange.environment.nsw.gov.au/Impacts-of-climate-change/East-Coast-Lows/Past-East-Coast-Lows

The extreme weather which began in February 2020 continued throughout the month.

On 17 February 2020, the Bureau of Meteorology notified that further severe thunderstorm activity had been detected on its weather radar on the western edge of metropolitan Sydney. It warned that this weather system was quickly moving east and would produce large hailstones and heavy rainfall, along with flood risks.

The following day, on 18 February 2020, a severe storm continued to strike large parts of the Sydney metropolitan area and other areas of NSW, resulting in thunderstorms, damaging winds and hail. The movement of the storm and the warning area covered by an alert issued by the Bureau of Meteorology is shown in Figure 3.11. It shows two lines of storms. One developed about 2 pm on 18 February 2020 and was most widespread in the early evening. The other struck around midnight and carried through to the early hours of the next morning.

Figure 3.11 Severe weather warning on 18 February 2020



The storm activity in February 2020 resulted in a mass of lightning strikes. Close to 74,000 lightning strikes hit the Sydney region on 18 February 2020.[25] More than 800,000 lightning strikes were recorded across the state. Storm activity throughout February 2020 also had a severe impact on vegetation near our network, as set out in Figures 3.12 to 3.15.

25 https://sydneynews.sydney/sydney-news/sydney-storm-extreme-weather-event-impacts-city/6272/

Figure 3.12 Severe tree damage during February 2020 storm activity

Figure 3.13 Severe tree damage during February 2020 storm activity

Figure 3.14 Severe tree damage during February 2020 storm activity

Figure 3.15 Severe tree damage during February 2020 storm activity

3.3 Impact of 2019-20 storms

The 2019-20 storm season had a major impact on the community and our network. These impacts are described below. The costs we incurred in responding to the 2019-20 storm season is addressed in section 5 of this application.

3.3.1 Community impact of the 2019-20 season

The severe weather conditions during the 2019-20 storm season led to a significant number of callouts for the State Emergency Services (SES) and other emergency services personnel in NSW.[26] They also caused widespread damage to homes and other major infrastructure including roads and bridges, water and telecommunications services and privately-owned infrastructure. A summary of the community impact of the 2019-20 storm season is set out below.

Figure 3.16 Community impact of 2019-20 storm season[27]

26 https://www.ses.nsw.gov.au/news/all-news/2020/nsw-ses-urges-residents-to-prepare-now-as-heavy-rain-intensifies
https://www.insurancecouncil.com.au/assets/media_release/2020/100220%20Insurers%20declare%20Catastrophe%20for%20east%20coast%20storms%20and%20flooding.pdf

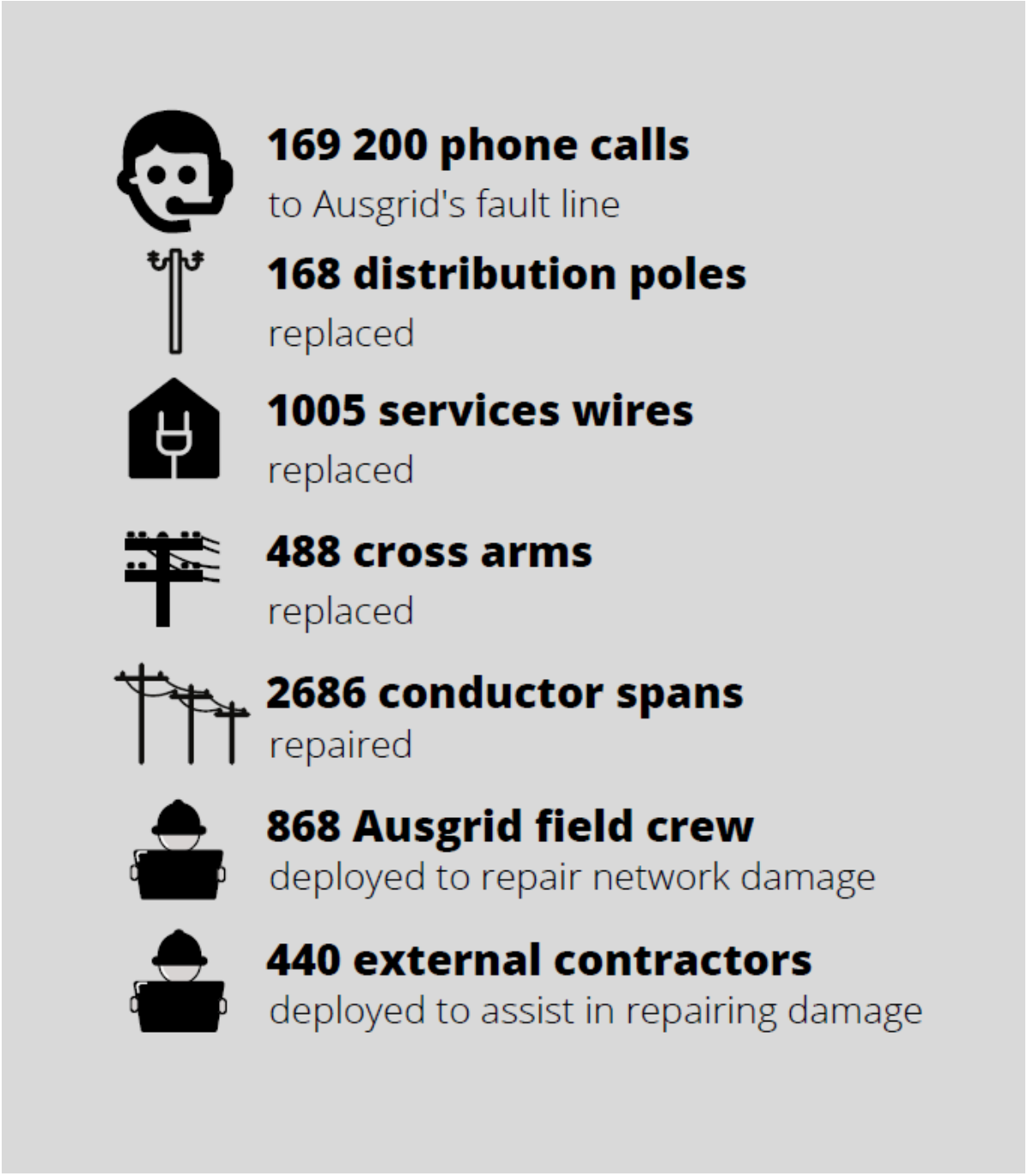
27 https://www.smh.com.au/national/nsw/record-calls-for-help-as-east-coast-reels-after-wild-weather-20200210-p53zgt.html;https://www.ses.nsw.gov.au/news/all-news/2020/nsw-ses-urges-residents-to-prepare-now-as-heavy-rain-intensifies
https://www.insurancecouncil.com.au/assets/media_release/2020/100220%20Insurers%20declare%20Catastrophe%20for%20east%20coast%20storms%20and%20flooding.pdf
https://www.insurancejournal.com/news/international/2020/03/31/562849.htm

3.3.2 Impact on our network and customers

The 2019-20 storm season caused widespread damage to Ausgrid's overhead network, triggering numerous supply faults particularly at the low voltage level. At its peak, 140,000 customers were without power.

Figure 3.17 sets out a high level summary of the impact of the storms on our network, in terms of the additional workload it imposed on our labour force and the damage done to the electricity infrastructure we own and manage.

Figure 3.17 Impact of 2019-20 storm season on our network



4 POSITIVE CHANGE EVENT

Under the NER, a pass through of incremental costs not included in an AER regulatory determination is predicated on the occurrence of a 'positive change event'. For the purposes of this application, the positive change event is defined as the 2019-20 storm season from 1 October 2019 to 31 March 2020.

The oscillation in extreme weather over this period has a common underlying cause linked to a change in climatic conditions. The AER has previously found that a change in climatic conditions may amount to a single positive change event under the NER.[28]

The drought which preceded the 2019-20 storm season interlinks extreme weather days into a single 'positive change event'. An expert scientific report focussed on tree and branch falls – the largest contributor to storm damage on our network – is included as part of this application (Attachment A). The report establishes a common underlying cause for the incremental costs we incurred during the 2019-20 storm season, linked to the drought in NSW and the effect it had on making vegetation surrounding our network more susceptible to tree and branch falls.

4.1 Rule requirements

The NER defines a 'positive change event' as:

> 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** that event (emphasis added).

This definition can be broken down into three elements. These are, first, a 'pass through event' and, second, the occurrence of 'materially higher costs'. The third element, through the words 'but for', then require a causal link between the relevant event and the costs. We discuss each of the three elements below.

4.2 First element: Pass through event

The NER prescribes four pass through events for all distribution determinations.[29] Our 2019-24 regulatory determination also includes a further four 'nominated' events that may be subject to a pass-through application.[30] These include a 'natural disaster' event.

For the reasons set out in Chapter 2, the 2019-20 storm season is a 'natural disaster' within the meaning of our 2019-24 regulatory determination. This nominated pass through event is defined as:

> Natural disaster event means any natural disaster including but not limited to cyclone, fire, flood or earthquake that occurs during the 2019-24 regulatory control period that increases the costs to Ausgrid in providing direct control services, provided the fire, flood or other event was not a consequence of the acts or omissions of the service provider.

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28 AER, *SA Power Networks cost pass through application for vegetation management costs arising from an unexpected increase in vegetation growth rates*, July 2013.

29 NER, clause 6.6.1(a1)

30 AER, 2019-24 determination for Ausgrid, November 2018, p. 14-13 (Approved at Draft Decision stage)

Note: in assessing a natural disaster event pass through application, the AER will have regard to, amongst other things:

- Whether Ausgrid has insurance against the event;
- The level of insurance that an efficient and prudent NSP would obtain in respect of the event; and
- Whether a relevant government authority has made a declaration that a natural disaster has occurred.

Table 4.1 below breaks down the requirements of this definition. It notes that each element is met in relation to the 2019-20 storm season such that a natural disaster event, as defined in our 2019-24 distribution determination, has occurred. It also notes where our application addresses each element of this definition in more detail.

Table 4.1 Natural disaster event pass through requirements

Requirement for a natural disaster event	Compliance	Details
Natural disaster that occurs during the 2019-24 regulatory control period	✓	Section 3.2
Increases the costs to Ausgrid in providing direct control services	✓	Section 4.3 and Chapter 6
Insurance against the event (if any) reflects what an efficient and prudent network service provider would obtain	✓	Section 7.3
Whether a government authority has made a declaration that a natural disaster event has occurred	✓	Section 3.2

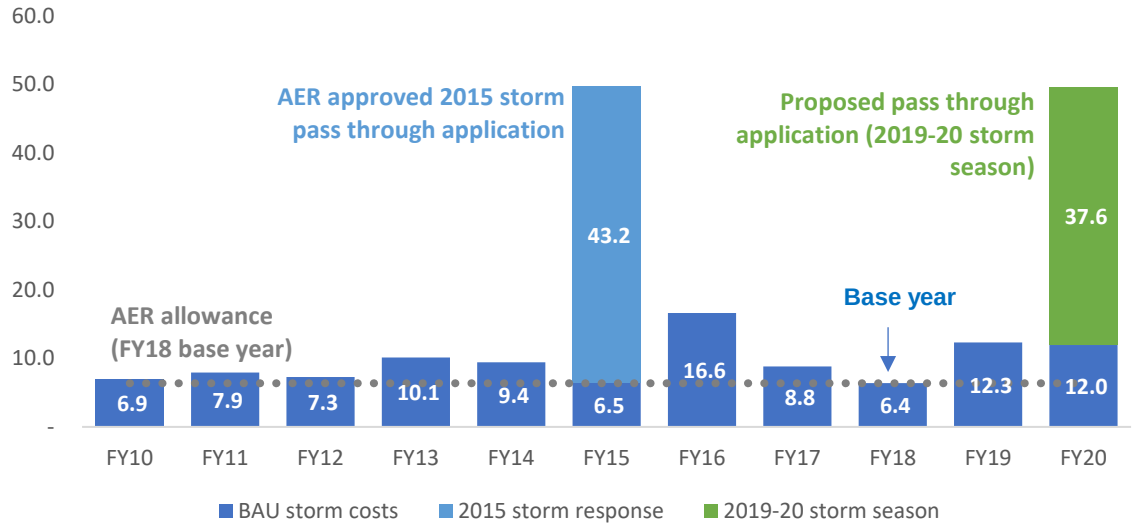
As noted in the above table, the pass through event increased the cost of providing direct control services, which is discussed in section 4.3 below. In terms of insurance, we self-insure against the cost of damage to our 'poles and wires', a position the AER has previously considered to be a prudent and efficient.[31] More information about our self-insurance practices is set out in section 7.3.

4.3 Second element: Materially higher costs

We have incurred materially higher costs as a result of the 2019-20 storm season. This fact is evidenced from the figure below, which shows the material increase in costs during the 2019-20 storm season compared to earlier seasons. Only 2015 shows a similar level of costs as the 2019-20 storm season – the earlier period was also the subject to a cost pass through application, which was approved by the AER.

[31] AER, *Ausgrid cost pass through application April 2015 Storms*, December 2015, p. 15.

Figure 4.1 Historical and FY20 storm response costs ($ nominal)



When assessing materiality, it is necessary to consider our costs over an appropriately defined period, which reflects how we budget and plan for storms. This approach provides a more fulsome assessment of the impact that storms have had on our business and our ability to provide safe, reliable and secure energy network services for our customers. It does this by taking into account both high and low cost periods in a season, thus revealing the net impact of severe storm activity.

We would have concerns about an overly narrow assessment period being used to judge materiality. Depending on the days in a season taken into account, a narrow approach risks over- or understating the impact of severe storm activity.

4.4 Third element: causal link ('but for') requirement

As already explained, there must be a causal link between the materially higher costs we experienced and the pass through event that occurred in order to satisfy the third element of the 'positive change event' definition.

To address this requirement, we have had regard to submissions recently made to the AER. We understand that in assessing AusNet Services' Black Summer bushfire cost pass through application, submitted in May 2020, the AER has formed the view that multiple fires on different days spread across disparate geographical locations could be deemed a single pass through event. The AER established two conditions that must be met in order to treat different bushfires as a single event:

- the bushfires shared a similar underlying cause (such as extreme weather conditions); and
- the bushfires occurred in relatively close proximity and time, as part of the same generally characterised bushfire season.[32]

We broadly agree with this approach and are of the view that the AER should apply these considerations to our application. Storm activity, like bushfires, can be temporally and

[32] AusNet Services, *Cost pass through application – 2020 Summer Bushfires*, May 2020, p.13

geographically diffuse yet caused by the same event if they are linked by a 'similar underlying cause' and 'occurred in relatively close proximity and time'.

As already explained in Chapter 2, natural disaster declarations during the 2019-20 storm season demonstrate the protracted nature of the severe storm activity from November 2019 through to February 2020. The close proximity of the storms in January and February 2020 were reflected in the Minister's statement,[33] noted in section 3.2, that combined the two storm events. Whilst the storms in November 2019 had a less severe impact on our network, the event also falls within the 2019-20 storm season as defined by the NSW State Emergency Services.[34] As such, it is reasonable to regard this event as being in close proximity to those in January.

In their expert report that accompanies this application, Professor Medlyn and Associate Professor Choat have explained that the materially higher costs we incurred during the 2019-20 share a common cause, which can be traced back to the drought conditions in NSW that affected tree health, as noted below:

> *"Drought affected trees may become more prone to storm damage for a number of reasons. Severe drought stress commonly results in the weakening or death of large branches, which then become more susceptible to snapping during wind storms (Dewit and Reid 1992; Self and Gordon, 2020). The root system of plants may also become compromised during prolonged and intense droughts, leading to reduced support and anchorage for trees, particularly those in shallow soils (Coder 2010). This increases the probability of failure at the root plate and toppling of whole trees during storms associated with high winds and saturated soils. Trees growing in urban environments are particularly prone, since they are commonly grown in very limited soil volumes and become top heavy, with a larger above ground biomass relative to their root systems (Watson et al. 1991)."*
>
> […]
>
> *"The record 2017-2020 drought in south eastern Australia caused massive dieback in forests and woodlands across NSW (Dead Tree Detective). Many regions of NSW, particularly those in the north west, experienced their lowest rainfall totals and highest temperatures on record. Although the intensity of the drought was lower in the urban and peri-urban areas of the Sydney basin, instances of tree dieback were recorded across this region. Records from the Dead Tree Detective citizen science project and media reports indicate that many street trees and trees in urban green spaces died or suffered significant canopy loss during this period."*

Based on the above report and the analysis presented in Chapter 2, we consider that the 2019-20 storm season should be regarded as a single pass through event. As already noted, this seasonal approach also provides a more comprehensive assessment of the impact that an extreme weather event has on our business and our ability to deliver services to customers safely and at a level of reliability they value. This is by incorporating both high and low cost periods throughout the season, thereby revealing the net impact of severe storm activity.

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33 https://minister.homeaffairs.gov.au/davidlittleproud/Pages/extension-disaster-assistance-NSW-storms-flood-february-2020.aspx

34 https://www.ses.nsw.gov.au/stormsafe/are-you-at-risk/storm-types/#:~:text=There%20is%20a%20marked%20tendency,Season'%20in%20New%20South%20Wales.

5 INCREMENTAL COSTS INCURRED

In this section, we outline the incremental costs we incurred in responding to damage to our network during the 2019-20 storm season. The eligible pass through amount and the prudence and efficiency of our decisions and actions are then addressed in sections 6 and 7 of this application.

5.1 Overview

Our response to the 2019-20 storm season had a material impact on the cost of providing direct control services. We incurred $37.6 million (real FY20) in additional costs, of which $16.8 million related to capital expenditure (capex) and $20.8 million in operating expenditure (opex). Table 5.1 below breaks down these costs in more detail. The allocation between capex and opex has been made according to our approved cost allocation method (CAM) and formed part of our independent auditor's review of our costs (see Attachment B).

Table 5.1 Expenditure incurred in responding to 2019-20 storms ($ real FY20)

Category	Capex	Opex
Asset replacement	7,716,155	-
Network repair work	-	4,592,764
Tree trimming	-	3,436,264
Network safety and restoration services	9,073,490	12,779,538
Subtotal	16,789,645	20,808,567
Total: Pass through amount	37,598,212	

5.2 Asset replacement

We replace assets impacted by storms when they suffer a severe defect or experience catastrophic failure. The volume of poles, service wires and cross arms replaced as a sole consequence of the 2019-20 storm season is set out in Table 5.2 below.

Table 5.2 Incremental replacement in 2019-20 storm season

	Replacement volume	Capex (real FY20)
Poles	168	2,748,045
Service wire	1005	3,243,329
Cross arms	488	1,724,781

5.2.1 Pole replacement

We replaced an additional 168 poles as a result of the damage to our network caused during the 2019-20 storm season, at a cost of $2.7 million (real FY20).

Poles provide structural support for the overhead conductors and accessories, so they remain safely clear from the ground, buildings, infrastructure, vegetation and vehicles. These assets typically fail during storms when they, or the distribution spans they hold up, are struck by a tree, branches or other debris.

5.2.2 Service wire replacement

We replaced an additional 1005 service wires as a sole consequence of the 2019-20 storm season. This led to a $3.2 million (real FY20) increment in our costs.

Service wires provide a physical connection between an Ausgrid pole (or mains) and a customer's connection point. In this way, they are the final electrical link between our assets and a customer's 'point of attachment'.

There are heightened safety risks associated with overhead service wires. They traverse public land and private property. If they are brought down during a storm, they will therefore typically fall in these areas that are highly accessible to the community. This highlights why the safety of our customers necessarily becomes Ausgrid's priority when we are responding to storm damage.

5.2.3 Cross arms

We replaced 488 cross arms in response to damage caused by the 2019-20 storm season, at a cost of $1.7 million (real FY20). The primary function of cross arms is to maintain safe horizontal electrical clearances of overhead conductors. Damage to cross arms can lead to conductors falling and coming into contact with the ground, buildings, vegetation, vehicles or members of the community. There is also a risk of electrical assets encountering other live overhead conductors and equipment.

5.3 Network repair work and tree trimming

The response effort to the 2019-20 storm season led to Ausgrid incurring additional operating costs relating to re-tensioning of assets, repairing overhead conductors and tree trimming. These are summarised in Table 5.3 below.

Table 5.3 Incremental repair and maintenance in 2019-20 storm season

	Units	Opex (real FY 20)
Cable service wire re-tensioning	2686	1,726,485
Mains / conductor repair	718	2,866,279
Tree trimming	1067	3,436,264

5.3.1 Cable and service wire re-tensioning

The 2019-20 storm season produced significant wind gusts. This can cause 'blowouts'

which can be defined as the 'horizontal 'sag' or deviation of powerline conductors from the centre as a result of wind forces.'[35]

Blowouts can put the community at risk if they lead to powerline conductors falling to the ground or becoming suspended at a reachable height. To address these hazards, our field crews inspected areas where severe winds had caused significant damage and, where required, restored distribution spans to their standard tensions.

5.3.2 Mains / conductors

We repaired 2686 spans of overhead conductor in response to the 2019-20 storms season, at a total incremental operating cost of $2.9 million (real FY20).

The primary function of overhead conductors is to safely distribute electricity from sub-transmission supply points to customers. They present significant safety risks when damaged during severe storm activity. Contact with failed live electrical conductors which have fallen to the ground or are suspended at a reachable height may cause injury (electric shock or burns) or a fatality. They can also cause fires and damage to property.

5.3.3 Tree trimming

We incurred an additional $3.4 million (real FY20) in costs from having to engage tree trimmers to remove fallen vegetation from electricity assets and infrastructure.

Ausgrid needed to engage tree trimmers to remove vegetation in order to commence the repair or replacement of damaged network assets. This formed an important part of our initial restoration approach of 'cut away and make safe'. Tree trimming of this nature is specialised work that requires specific skill sets to undertake safely. Vegetation management contractors were engaged based on existing contractual arrangements that set out fixed prices for emergency works.

5.4 Network safety and restoration services

In response to the 2019-20 storm season, we incurred $9.1 million (real FY20) in additional capital costs and $12.8 million (real FY20) in additional operating costs relating to the provision of network safety and restoration services.

5.4.1 Frontline response: network safety and restoration services

When storms occur on our network, appropriately qualified technicians are needed to address safety risks and restore supply to customers. This requires a significant deployment of frontline crews and, in the case of the 2019-20 storm season, assistance from external contractors and other electricity distributors.

At the peak of our storm response effort, we had more than 868 Ausgrid field personnel and 440 external contractors on the ground, committed to providing network safety and restoration services.

Broadly speaking, the activities which made up this frontline response followed five key stages summarised in Table 5.4 below. Critically, network safety and restoration services were delivered at each stage, whereas the replacement and repair work, described in section 5.2 to 5.3 above, was mostly limited to a smaller, though important, component of

[35] Ausgrid, Network Standard 220: Overhead design manual, June 2015, p. 11.

our broader response. For example, the safe, prudent and efficient replacement of an asset in stage 4 below could only occur once the assessment in stage 2 and the hazard reduction activities in stage 3 have taken place.

Table 5.4 Broad stages of frontline response to 2019-20 storms

#	Stage	Customers restored	Replacement and repair work	Network safety and restoration
1	Frontline support of network switching activities	10 000s	-	✓
2	Assess damage and address most critical safety hazards	Relatively few	-	✓
3	Continued hazard reduction, preliminary repair and rebuild work, and support switching	1000s	-	✓
4	Rebuilding and restringing the network	100s	✓	✓
5	Restore power to remaining customers	10s	-	✓

In terms of the volume of work performed, hazard reduction was the focus of our frontline response. All hazards should be eliminated as far as reasonably practicable, with the most critical of these during severe storm events relating to 'wires down' incidents. When this happens, fallen conductors are regarded as 'live' until they have been identified, isolated and proven to be de-energised. All precautions for low voltage and high voltage cables must then be followed in accordance with the Electrical Safety Rules.

Other hazard reduction activities performed in the delivery of network safety and restoration services included the removal of vegetation or other material sitting on mains. This was extensive given that tree and branch falls were the most common cause of damage to our network during the 2019-20 storm season. As noted in Table 5.4 above, preliminary work on assets prior to their replacement or repair was also performed as part of network safety and restoration activities.

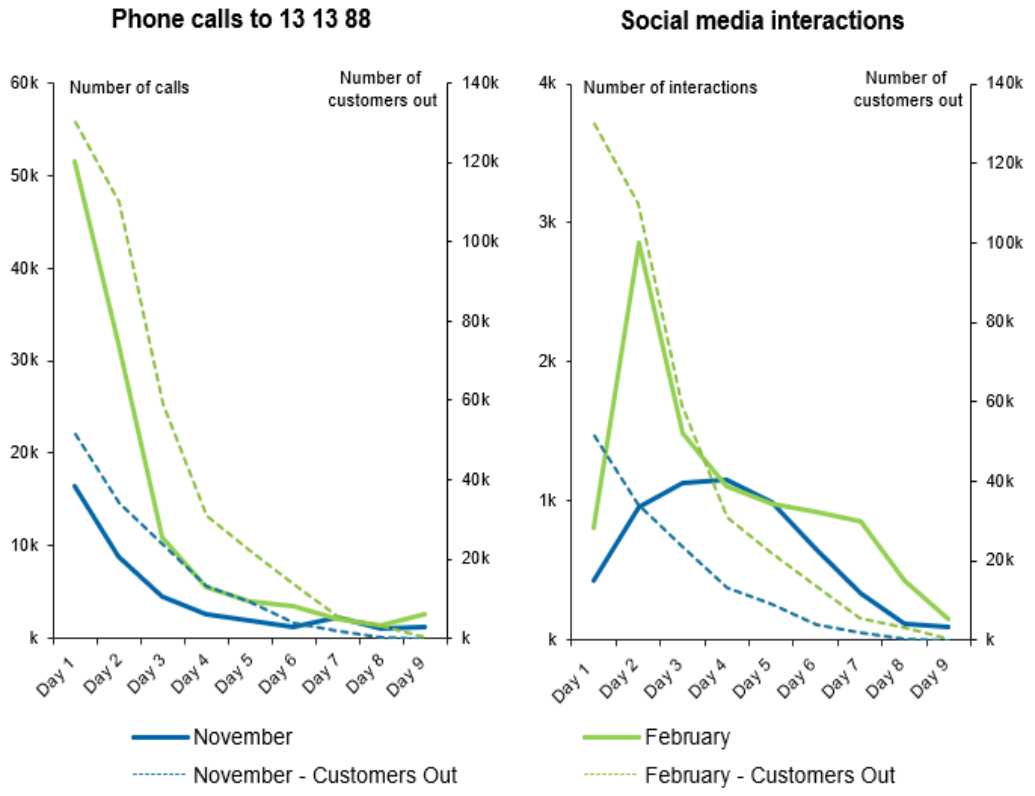
5.4.2 Co-ordination, back office support and customer engagement

Substantial co-ordination, back office support and customer engagement activities were performed as part of our response to the 2019-20 storm season.

In particular, the delivery of network safety and restoration services by frontline crews required co-ordination from Ausgrid's back office. These additional co-ordination and management activities would not have been incurred but for the severity of the 2019-20 storm season. The influx of additional resources from external contractors and other electricity distributors added to the complexity of the back office tasks.

We also devoted additional resources to our contact centre and corporate affairs division which were not funded in our 2019-24 distribution determination. During the 2019-20 storm season we answered 169 200 phone calls to our fault line. The volume of answered phone calls during the 2019-20 storm season and the number of social interactions which our corporate affair's division had with customers is tracked in Figure 5.1.

Figure 5.1 Contact centre and social media interactions



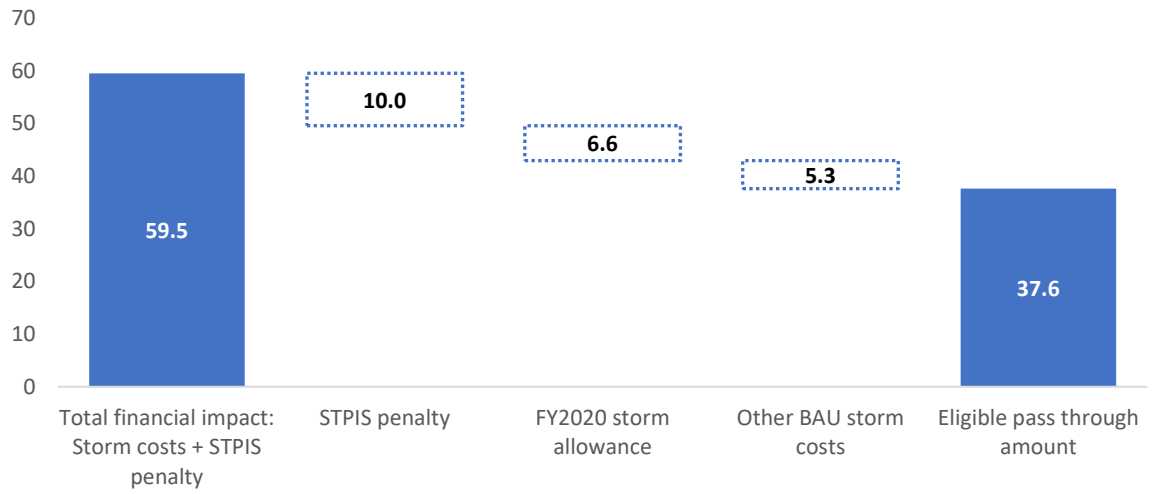
6 ELIGIBLE PASS THROUGH AMOUNT

Our application is required to provide specific information regarding the 'eligible pass through amount'. The required information, including information about the materiality of the costs, are set out below. The prudence and efficiency of our proposed pass through amount is demonstrated in section 7 of this application.

6.1 Pass through amount

Our application seeks to pass through $37.6 million (real FY20) in costs we incurred in responding to the 2019-20 storm season. Figure 6.1 shows that this is not all the 2019-20 storm costs that we incurred, but limited to the 'incremental' amount that we incurred above our budgeted storm costs, which exceed the AER's allowance approved in our 2019-24 distribution determination based on our historical expenditure. The impact of the STPIS is discussed in section 8 of this application.

Figure 6.1 Eligible pass through amount ($million, real FY20)



Note ^: Allowance of $6.6 m (real FY20) based on $6.4 m (nominal) in FY18 base year adjusted for inflation, real cost escalation and 0.5% assumed productivity adjustment

6.2 Materiality of costs

We can only pass through the costs of the 2019-20 storms if the event has led to us 'incurring materially higher costs in providing direct control services.'[36]

The NER defines the term 'materially' as a 'change in costs (as opposed to the revenue impact)' that 'exceeds 1% of the annual revenue requirement for the Distribution Network Service for that regulatory year'.[37] Table 6.1 sets out this calculation. It shows that the 2019-20 storms led a change in our costs of $37.6 million (real FY20) and that, when measured against our 2019-20 annual revenue requirement, this amount exceeds the 1% materiality threshold in the NER. The building block revenue impact of these incremental costs is then set out in Table 6.2 below.

36 NER, Chapter 10 – Definition of 'positive change event'.
37 NER, Chapter 10 – Definition of 'positive change event'.

Table 6.1 Materiality of 2019-20 storm costs

Change in costs from the 2019-20 storms	37,598,212
Annual Revenue Requirement for distribution and transmission (unsmoothed) ^	1,192,837,396
Materiality (%)	3.15%

Note ^: Annual revenue requirement excludes additional capex and opex we are seeking to have passed through in this application. Unsmoothed revenue in FY20 includes 'remittal' adjustment.

Table 6.2 Building block costs for eligible pass through amount ($m, nominal)

	FY20	FY21	FY22	FY23	FY24
Return on capital	0.00	0.94	0.94	0.93	0.91
Return of capital	0.00	-0.09	-0.08	-0.07	-0.07
Opex	20.81	0.00	0.00	0.00	0.00
Net tax allowance	0.00	-0.06	-0.05	-0.05	-0.04
Annual Revenue Requirement for distribution and transmission (unsmoothed)	20.81	0.79	0.81	0.80	0.80
Annual Revenue Requirement for distribution and transmission (smoothed)	0.00	0.00	9.19	9.23	9.26

Note ^: Annual revenue requirement includes additional capex and opex we are seeking to have passed through in this application. Unsmoothed revenue in FY20 includes 'remittal' adjustment.

The recovery profile in Table 6.2 sets out an example for how the eligible pass through amount could be recovered over three years from FY22 to FY24. We intend to engage further with the AER on the recovery profile which should be used. Broader considerations, such as inflation, energy consumption and the broader impact of COVID-19, may mean that a different recovery period would be more appropriate.

6.3 Incremental costs that are the sole consequence of the 2019-20 storm season

As already noted, our application must only seek to recover the incremental costs incurred from the pass through event, being the 2019-20 storm season.[38] In Chapter 5, we have described the incremental costs incurred as a result of the storm season, focusing on the additional work undertaken.

[38] NER, clause 6.6.1(j)(5)

To provide assurance regarding the validity of our approach, we engaged accountancy firm PwC to ensure that our pass through application only included the incremental costs arising from the pass through event. PwC's report confirms that the costs included in this application were the sole consequence of responding to and repairing the damage caused by the 2019-20 storm season. PwC's findings are attached at Attachment B.

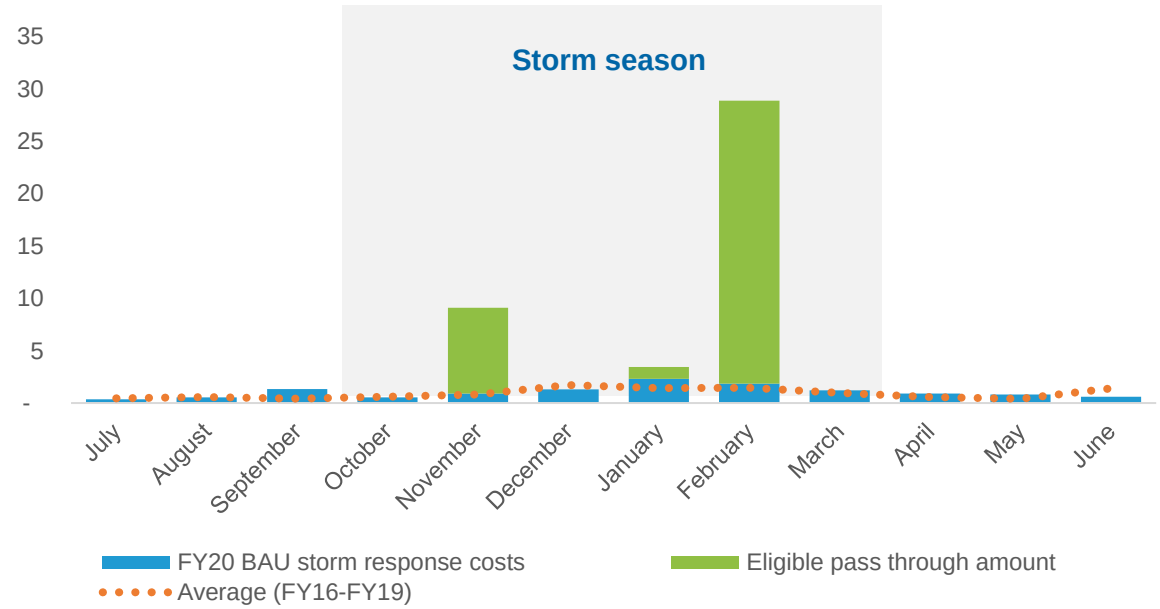
In addition to providing PwC's report, the incremental costs incurred during the 2019-20 storm season can be identified by comparing the expenditure we incurred against our historical storm response costs. It is also useful to comment on our approach to labour and materials, as discussed below.

6.3.1 2019-24 funding based on historical expenditure

The AER did not approve a specific, standalone allowance for storm response activities in our 2019-24 determination. Instead, it approved an aggregate level of funding for a range of activities, including storm response work, based on our historical costs (see section 6.4 below). It follows that our historical storm response expenditure should be the threshold for identifying the point at which our 2019-20 storm season costs become 'incremental'.

Taking this into account, our total storm response expenditure for the full FY20 regulatory year is set out in Figure *6.2* below. It shows that we are only seeking to recover additional costs above our historical average expenditure and what we have categorised as BAU storm response cost. BAU storm response costs correspond to what we have judged to be 'typical' storm activities unrelated to 'extreme' weather events.

Figure 6.2 Storm response costs in the FY20 regulatory year ($m, real FY20)



The approach we have undertaken to calculate the 'incremental' costs is explained in more detail in section 2.1 above. It is noted that, if anything, the approach we taken understates the incremental costs we incurred relative to our approved level of funding. We consider this to be appropriate to manage the price impact of our application on our customers.

6.3.2 Labour costs

As already noted, our approach is focused on identifying the incremental costs incurred as a result of the storm activity. In relation to labour costs, this raises a question regarding how internal labour should be costed compared to contracted labour that is engaged to address the storm damage and restore supply to customers.

It is not uncommon for Ausgrid to redirect staff from BAU activities to respond to storm events. Typically the scale of such work, the number of staff involved, and the duration of activities is relatively modest. In these cases, the cost impact can be accommodated under our pre-existing revenue allowance the AER has approved in our distribution determination. However, the scope and magnitude of the 2019-20 storm season does not allow for this type of redeployment.

Our approach to estimating the internal labour costs is consistent with the approach adopted in our 2015 storm cost pass through application, which was approved by the AER.[39] This approach includes internal labour costs on an hourly basis accordingly to a fully absorbed rate, including on-costs.

This approach recognises that additional work is required above the level expected in the revenue determination, and it is appropriate to recognise this cost impact. Similarly, we have included the costs of additional contracted labour engaged to respond to the 2019-20 storm season. In section 7.4, we explain the steps we took to ensure that the level of contracted labour employed was prudent and efficient.

From a regulatory perspective, we consider it appropriate to capture the costs of internal and external labour on a consistent basis. This approach ensures that network businesses have incentives to balance the use of internal and external resources to minimise the total costs to customers. An approach that treated internal labour differently to external labour may inappropriately encourage storm responses to be addressed by external labour, potentially leading to higher costs for customers.

The displacement of labour away from scheduled work, such as preventative maintenance, is also likely to manifest itself in the form of reliability implications for our customers and our performance under the STPIS. We elaborate further on the impact of the 2019-20 storm season on the STPIS in chapter 8 of this application.

6.3.3 Materials

Our assessment of incremental material costs associated with storm damage reflects the actual costs incurred, rather than the forecast unit rates in the 2019-24 determination. Our view is that this approach is consistent with the NER requirements.

In addition, to ensure that we are only capturing the incremental material costs we have undertaken analysis of our replacement programs for pole replacement, distribution mains and service wire replacement to determine if there was a correlation between planned replacement work and restoration work undertaken in response to the 2019-20 storms.

We track maintenance and replacement programs through our SAP Maintenance Module. In determining if an asset replaced during the 2019-20 storm season brought forward a 2019-24 planned replacement, we compared SAP workorders for these poles against our outstanding capital pole replacement notifications. Our search of our system showed that there were no such matches.

[39] AER, *Final decision: Ausgrid 2015 storm pass through*, December 2015, p.15-16

In addition, we undertook a search of our SAP systems to determine if any assets identified as 'limited life' in our SAP systems coincided with an asset replacement completed during the 2019-20 storm season. We could not find any evidence in the notification comments or descriptions identifying any correlation with planned minor capital works and damage caused by the storm.

It should furthermore be noted that the likelihood of a pole being replaced in response to the 2019-20 storms season which was scheduled for replacement in the 2019-24 regulatory period is not significant. We replaced 168 poles during the 2019-20 storm season, out of a total population of approximately 500 000. Similarly low statistical likelihoods apply to service wires, overhead conductors and cross arms.

6.4 Costs not included in the current determination

We confirm that the 2019-20 storm season was not anticipated at the time of our 2019-24 distribution determination and therefore the costs of this event were not included in that determination.

The AER used a 'base, step, trend' approach to determine our efficient level of opex for our 2019-24 regulatory period. The AER applies this forecasting method, in conjunction with benchmarking techniques, because opex is largely recurrent in nature – that is, what is spent in one year generally provides a good indication of future costs.

In developing the base level of opex for our 2019-24 regulatory period, the AER had regard to our actual opex in FY18 (among other things). In this regulatory year, no major storms occurred within our network which matched, or approached, the magnitude of the 2019-20 storm season. This is confirmed by the log of natural disaster declarations kept by the NSW Government, which lists no major storms within our local network service in FY18.[40] As outlined in section 3.1 of this application, NSW was in a sustained period of rainfall deficiency in this regulatory year. In fact, in FY18 only $6.4 million (nominal) in storm related costs were incurred, the lowest expenditure we experienced in the 10 years historical years back to FY10.

In trending forward our base level of opex the AER did not apply any step changes for an anticipated increase in storm activity during the 2019-20 storm season. Nor did the AER approve a capital works program for such activities. This was appropriate at the time since in April 2018, when our 2019-24 determination was made, the 2019-20 storm season was an unforeseeable event that could not have been anticipated.

[40] https://www.emergency.nsw.gov.au/Pages/publications/natural-disaster-declarations/2017-2018.aspx

7 PRUDENCE AND EFFICIENCY

The NER requires the AER to consider the efficiency of our 'decisions and actions'[41] in relation to the risks presented by the 2019-20 storm season. 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'.[42]

We address this requirement in the NER by providing information on the governance measures we employ to efficiently manage risk (see section 7.1). We also address the foreseeability of the risks presented by the 2019-20 storm season (see section 7.2) and provide information about the efficiency and prudence of our approach to insurance (see section 7.3) and the decision to engage contracted services (see section 7.4).

7.1 Governance procedures and practices

When storms occur on our network, the safety and wellbeing of our customers and our staff are our first priority. This must be taken into account when assessing the 'decisions and actions' we made in relation to the 2019-20 storm season.

To assess the efficiency of Ausgrid's actions and decisions, the NER directs the AER to focus on how we managed the risk presented by the positive change event.[43] We therefore set out the main governance measures we employ to do this. These include our Storm Response Plan, our Vegetation Management practices, and internal processes targeted at promoting safety.

7.1.1 Application of Storm Response Plan

We have put in place a Storm Response Plan (see Attachment D). This plan recognises the impact of storms on our customers when major network interruptions occur, and sets out arrangements designed to deliver 'optimal, efficient and speedy management of resources to restore [network] supplies as quickly as possible'.[44]

The application of our Storm Response Plan during the 2019-20 storm season allowed Ausgrid to efficiently convene a prudent management structure for the co-ordination of the storm restoration works, with roles and duties of key personnel clearly defined. The business processes for storm repairs is also detailed in our Storm Response Plan, which meant that our field crews had readily available information on how to safely and efficiently perform typical storm restoration work.[45]

As the impact of the 2019-20 storm season became clearer, we formed an Incident Management Team (IMT) which co-ordinated and organised our restoration efforts. This was initially targeted at hazard identification and consisted of feeder patrols, network isolation and 'cut away, make safe' works on or near our network assets. Once an area was made safe, assets which may have been damaged could then be addressed. The IMT is 'controlled' by a the General Manager of Techinical Operations and attended by representatives of key business functions that have a responsibility for supporting the co-

41 NER, clause 6.6.1(j)(3).
42 NER, clause 6.6.1(j)(3).
43 NER, clause 6.6.1(j)(3).
44 Ausgrid, *Storm Response Plan*, April 2012, p. 6.
45 Ausgrid, *Storm Response Plan*, April 2012, p. 5.

ordination of restoration efforts.

We also established a Crisis Management Team (CMT). It was chaired by the Chief Executive Officer (CEO) and staffed by Ausgrid's executive leadership team (ELT) members. The role of the CMT was to develop the strategic elements of our response to the 2019-20 storm season, with a focus on customer impacts. At peak times during the 2019-20 storm season, the CMT met twice daily. Directions and instructions from the CMT were translated into actions by IMT participants.

During the 2019-20 storm season Ausgrid also actively participated in the co-ordination of emergency response activities with the Energy and Utilities Services Functional Area Coordinator (EUSFAC) under the NSW jurisdictional Emergency Management Plan. This ensures that responses and resources are co-ordinated across the NSW distribution network services providers, other functional areas (transport, NSW Health, Telecommunications, Education) and with other emergency agencies.

7.1.2 Vegetation management polices

The most significant cause of damage to our network during the 2019-20 storm season was tree and branch falls from vegetation. We have governance measures in place to efficiently manage these risks. This is through the application of the Industry Safety Steering Committee's (ISCC) *Guide for the Management of Vegetation near Electricity Supply Infrastructure* (ISSC3 Industry Guideline) and our Network Standard 179 (NS179).

The purpose of the ISSC3 Industry Guideline is to provide a minimum standard for the management of vegetation in the vicinity of electricity supply infrastructure in NSW. It does this by setting out the obligations which Ausgrid is required to meet with regard to:

- the safety of the public, and persons near or working on the network including the maintenance of electrical safety clearances;
- the protection of property and our electricity assets;
- protection of the environment, including protection from ignition of fires; and
- continuity of electricity supply.[46]

To achieve these outcomes the ISCC3 Industry Guidelines sets out a 'deterministic standard of hazard management vegetation requirements'.[47] The ISCC3 Industry Guideline states that these 'deterministic standards' are based on the 'current industry understanding of the vegetation hazard reduction requirements in order to manage the risk to a level that is consistent with overall community expectations regarding public safety, environmental amenity and operational efficiency'.[48]

We give effect to the requirements in ISCC3 Industry Standard via an internal policy known as NS179. We have attached this policy with our application (see Attachment E) together with the ISCC3 Industry Standard (see Attachment F). Our NS179 policy states that it is targeted at addressing:

Ausgrid's particular requirements for vegetation management near low voltage overhead

46 ISCC, *Guide for the Management of Vegetation near Electricity Supply Infrastructure*, 2016, p. 8.
47 ISCC, *Guide for the Management of Vegetation near Electricity Supply Infrastructure*, 2016, p. 17.
48 ISCC, *Guide for the Management of Vegetation near Electricity Supply Infrastructure*, 2016, p. 17.

mains assets in non-bushfire prone areas to provide vegetation clearances other than the specific clearance requirements recommended in ISSC3 – 2016 Schedule 1, but consistent with ISSC3 – 2016 Schedule 2. Ausgrid recognises that vegetation is a community asset and aims to minimise vegetation cutting wherever the vegetation risk can be managed to a level that is as low as reasonably practicable.[49]

In our view, the application of ISCC3 Industry Standard and NS179 reflects 'good industry practice' which, as per the AER's *Expenditure Forecast Assessment Guideline*, aligns to the AER's expectations of a prudent and efficient electricity distributor.[50] It follows that in assessing the actions and decisions we made in managing vegetation near our network, the governance measures we employed ahead of the 2019-20 storm season should be found to be prudent and efficient.

7.1.3 Electricity Network Safety Management System (ENSMS)

The safe operation of our electricity distribution network is governed by the *Electricity Supply Act 1995* (the Act). We must also comply with the *Electricity Supply (Safety and Network Management) Regulation 2014* (the Regulation) which, among other things, requires us to put in place an Electricity Network Safety Management System (ENSMS).

We established an ENSMS in 2019 that meets the requirements of *AS5577 – Electricity Network Safety Management Systems* (AS5577). Our ENSMS provides that we will act in a way so that network safety risks are eliminated so far as is reasonably practicable (SFARP) and if not reasonably practicable to do so, then reduced as low as reasonably practicable (ALARP). Reasonably practicable means that which is, or was at a particular time, reasonably able to be done to ensure safety, taking into account and weighing up all relevant matters including:

a) the likelihood of the hazard or the risk concerned occurring;
b) the degree of harm that might result from the hazard or the risk;
c) what is known, or ought to reasonably be known, about the hazard or risk, and about the ways of eliminating or minimising the risk;
d) the availability and suitability of ways to eliminate or minimise the risk; and
e) after assessing the extent of the risk and the available ways of eliminating or minimising the risk, the cost associated with the available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk.

We have attached our ENSMS documentation with this application (see Attachment G). Our compliance obligations in relation to the ENSMS, the Act and the Regulation provides confidence that network risks were being managed in accordance with good industry practice prior to the commencement of the 2019-20 storm season. Therefore, the impact of the storm season was not exacerbated by any action or inaction in relation to network or vegetation management.

7.2 Unforeseeable and uncontrollable event

We have prudent governance measures to manage the risks associated with extreme weather events like the 2019-20 storm season. It should nonetheless be recognised that the change in climatic conditions associated with the 2019-20 storm season was not a foreseeable or controllable event. Nor could we have put in place any additional vegetation

[49] Ausgrid, *NS179: Vegetation management*, January 2020, p. 5,
[50] AER: *Explanatory Statement Expenditure Forecast Assessment Guideline*, November 2013, p. 82.

management practices that would have efficiently managed the risks presented by drought-stricken trees.

7.2.1 Steps we took to inform ourselves of risks

We took prudent steps to inform ourselves of the likelihood of extreme weather during the 2019-20 storm season by engaging a meteorological firm, Weather Zone.

Weather Zone provided us with a report in September 2019 and presented to Ausgrid management the same month. The report we received provided analysis of the previous summer in 2018-19, contained an assessment of the current state of the climate (as it was then) and included a seasonal outlook on rainfall, temperature, thunderstorms, storm winds, and bushfires. The report and presentation from Weather Zone is provided with this application (see Attachment C).

The Weather Zone report did not predict the severity of the 2019-20 storm season. It forecast a mild season, stating that '[t]his spring and summer, severe thunderstorm activity is expected to be **average** to **below average** across the eastern states (emphasis added)'.[51] This shows that although we took all reasonable measures to inform ourselves of the risks presented by extreme weather, not even experts in the field of meteorology could not have foreseen the severity of the 2019-20 storm season.

7.2.2 Changes in climatic conditions

The AER has previously considered whether a change in climatic conditions is a foreseeable or controllable event. This was in its 2013 decision on 'SA Power Networks cost pass through application for vegetation management costs arising from an unexpected increase in vegetation growth rates' (SAPN decision).

The SAPN decision involved an application to pass through additional vegetation management costs following the breaking of the Millennium drought in South Australia. For the purposes of its application, SA Power Networks defined the positive change event as an 'uncontrollable and unexpected increase in vegetation growth rates which followed above average rainfall'.[52]

The AER approved a pass through amount of $43.2 million (nominal). In accepting that a 'general nominated pass through event' had occurred it had to consider whether a change in climatic conditions was 'foreseeable' and 'controllable'.[53] It observed: 'the AER considers the forecasting information typically available is not useful in anticipating climatic conditions across a five year regulatory control period due to the short forecasting horizon and, in any event, cannot predict the nature of specific weather events'.[54]

We agree with this observation from the AER. Further, the measures we have in place for managing risks associated with severe storm activity reflect 'good industry practice' in accordance with the AER's standard for prudent governance.[55] No action or decision could have been made by Ausgrid which could have forecast or predict the nature of the 2019-20

51 AER: *Explanatory Statement Expenditure Forecast Assessment Guideline*, November 2013, p. 82.
52 AER, *SA Power Networks cost pass through application for vegetation management costs arising from an unexpected increase in vegetation growth rates*, 2013, p. 42.
53 AER, *SA Power Networks cost pass through application for vegetation management costs arising from an unexpected increase in vegetation growth rates*, 2013, p. 42.
54 AER, *SA Power Networks cost pass through application for vegetation management costs arising from an unexpected increase in vegetation growth rates*, 2013, p. 29.
55 AER: *Explanatory Statement Expenditure Forecast Assessment Guideline*, November 2013, p. 82.

storm season.

7.3 Insurance considerations

We do not hold insurance cover for damage caused to the 'poles and wires' of our network during a natural disaster. We routinely review our insurance needs and can confirm that insurance cover for poles and wires is not an efficient approach to managing the risk of damage to or loss of these assets.

In its final decision approving our 2015 storms pass through application, the AER took the view that insurance for poles and wires would not be efficient or cost effective. It said:[56]

> Ausgrid advised that it does not insure against damage to its poles and wires, noting that external insurance is unavailable on commercial terms. This means no insurance premium is being funded by customers. We are satisfied this is efficient and reasonable.

7.4 Contracted services

As the scale of the 2019-20 storm season and its impact became clearer, our workforce planning area identified resourcing requirement to complete supply restoration and repairs to the network. During the 2019-20 storm season, Ausgrid also sought additional resources from external providers including other electricity distributors and contractors.

In assessing our 2015 storm application, the AER approved our contracted services costs. It took the view that '[a]s the operating expenditure for the third party assistance is directly attributable to the April [2015] storm event, was corroborated by invoices and was not provided for in the 2014–15 and 2015–19 distribution determinations, we are satisfied that it should be approved'.[57]

It should be recognised that the integration of external resources as a supplementary workforce involved a significant amount of coordination to ensure they were able to support our response in a safe and efficient manner. These coordination activities led incremental costs that were the sole consequence of the 2019-20 storm season, and which were not funded in our 2019-20 determination.

[56] AER, *Final decision: Ausgrid 2015 storm pass through*, December 2015, p.15.
[57] AER, *Final decision: Ausgrid 2015 storm pass through, December 2015*, p. 15-6.

8 SERVICE TARGET PERFORMANCE INCENTIVE SCHEME (STPIS) IMPACT

8.1 Overview

Storms can lead to outages on our network that last multiple days. During the restoration effort, the service our customers receive can also be intermittent as their supply is rerouted through 'switching' and steps are taken to rebuild our network.

We can incur significant financial penalties under the STPIS because of the interruptions of supply that occur because of storms. The AER's current approach is to exclude 'major event days' (MEDs) from STPIS outcomes based on a statistical approach known as the 'Beta 2.5' method.

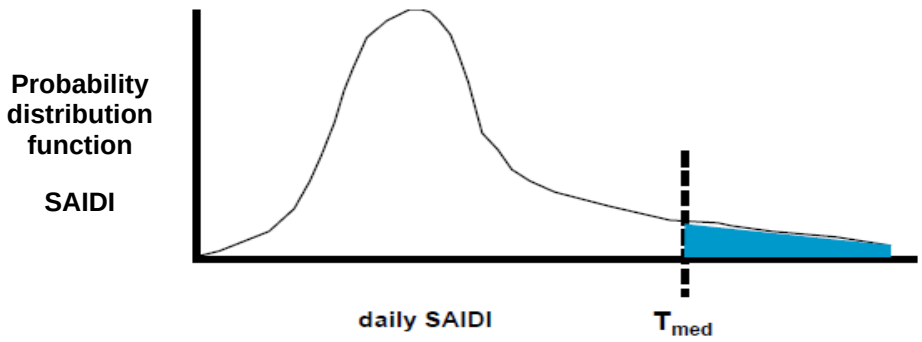
We have identified two issues with the Beta 2.5 method. We explain these issues below, after first outlining how the Beta 2.5 method is intended to work. Our intention is to then engage with the AER and stakeholders on these issues via a separate process to the submission of this pass through application.

8.1.1 Overview of the MED threshold

The AER's current STPIS applies a statistical approach to calculating what constitutes a major event day or 'MED'. Known as the Beta 2.5 method, it excludes reliability performance on days that 'are more than 2.5 standard deviations greater than the mean of the log normal distribution of five regulatory years' SAIDI data'.[58] The term 'SAIDI' refers to the duration of an interruption.

Figure 8.1 sets out how this is intended to work for a typical probability distribution function for the daily SAIDI values for a given period. It shows that under the 2.5 Beta method the value of the major event day threshold (T_{med}) is calculated from this distribution of daily SAIDI values. The shaded area is where the daily SAIDI exceeds T_{med}, which represents the small number of days identified as major event days.

Figure 8.1 Probability of major event day



We agree with the policy intent behind the Beta 2.5 method. Every year there will be interruptions on major events days that should be considered outliers when compared to the normal day-to-day interruptions that occur when operating our distribution network. These outliers should be excluded from our STPIS performance, and the Beta 2.5 method

[58] AER, *Service Target Performance Incentive Scheme version 2.0*, 2018.

provides a statistical basis for making this happen. There are however two issues which we want to bring to the AER's attention. These relate to, first, the extent to which outages following a MED can be excluded from our STPIS performance and, second, how the MED threshold itself is calculated.

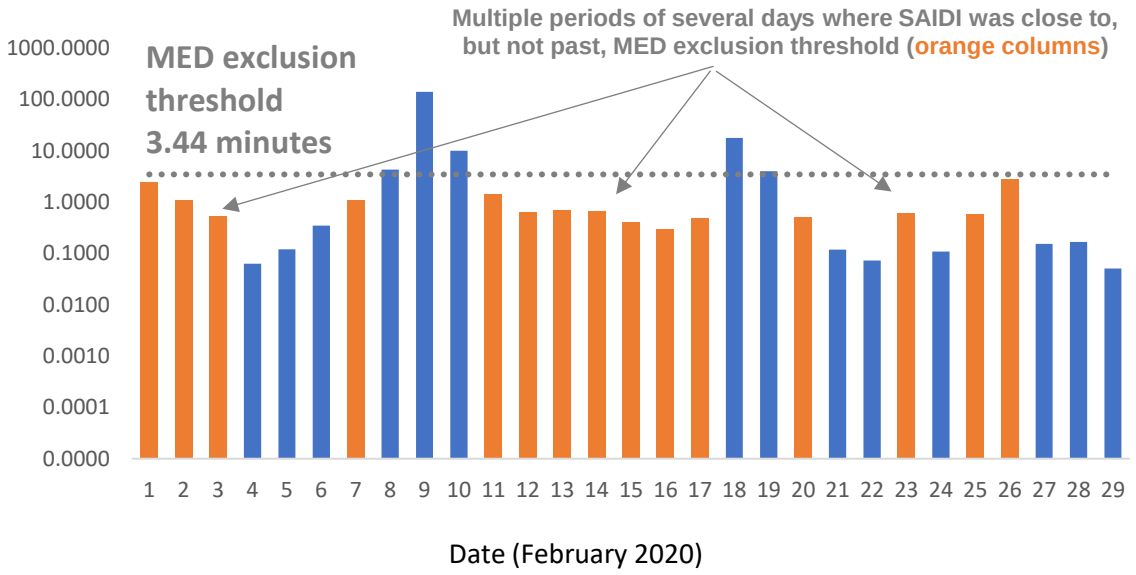
8.1.2 Exclusion of outages following a MED

When a storm hits our network, we will deploy field crews to undertake a safety assessment and then restore power to our customers as quickly as possible.

In cases of extreme storm events, the restoration effort may take multiple days as additional time is taken to clear safety hazards or field crews work towards rebuilding parts of the network. This can lead to substantial reliability 'tails' consisting of multiple consecutive days of long SAIDI interruptions which are close to, but which do not exceed, the major event day exclusion threshold.

This happened three times in February 2020 as shown in Figure 8.2 below. These reliability 'tails' were unique to February 2020; they did not follow the severe storm activity that hit in November 2019 or during other parts of the 2019-20 storm season.

Figure 8.2 Daily SAIDI performance in February 2020 (log scale)



Including the outages which came close to, but which did not exceed, the MED threshold in Februrary 2020 is likely to have a significant financial impact for us under the STPIS. Our initial estimate is that we could incur a financial penalty under the incentive scheme of up to $10.0 million (real FY20) for February 2020 alone.

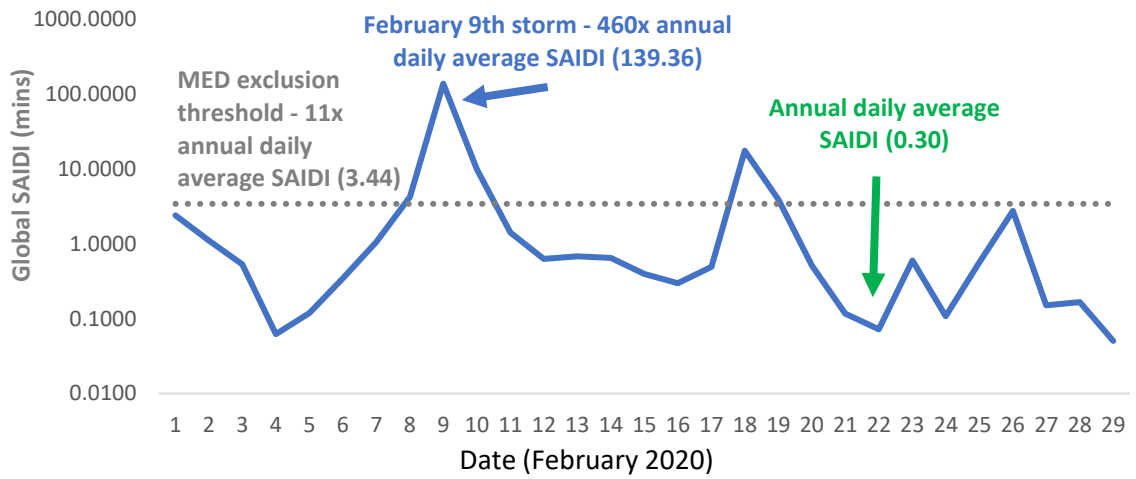
We are seeking to engage further with the AER on the application of the MED threshold to our STPIS incentive outcomes. Each year the reliability dataset that is used to calculate our STPIS rewards and penalties is subject to an independent audit. Our intention is to complete that process and then make a supplementary submission to the AER. This is to have the impact of the 2019-20 storm season on the STPIS considered as part of this cost pass through application.

8.1.3 Exclusion of catastrophic storm events in calculating MED threshold

The 2.5 Beta method excludes extreme events, like major storms, from the calculation of the rewards and penalties we receive under the STPIS. It does not, however, adjust for the impact of extreme events in calculating the MED threshold itself. This can have a distortionary impact.

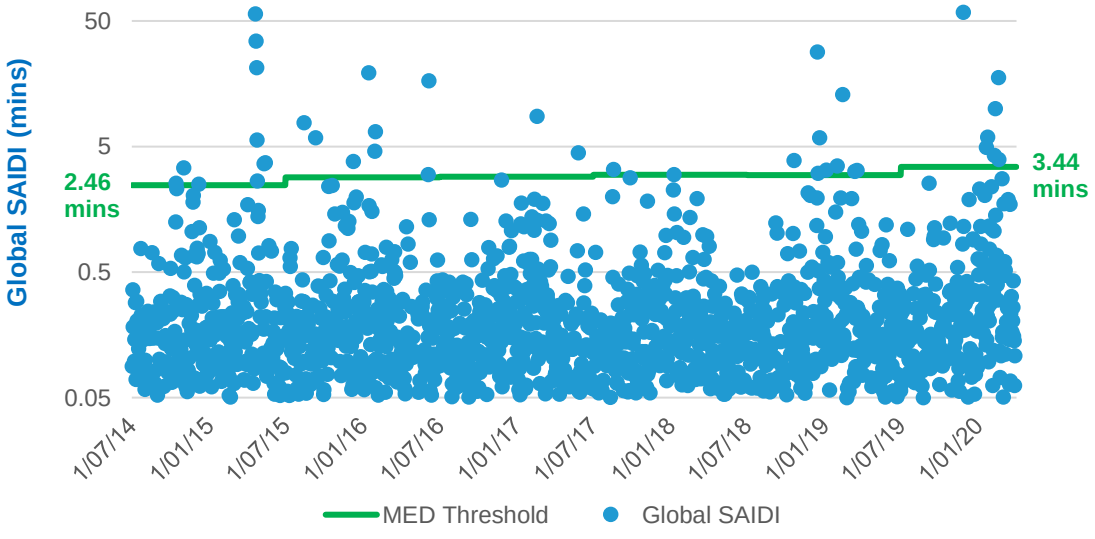
For example, the storm event on 9 February 2020 resulted in a daily SAIDI that was 460 times above the annual daily average, as shown in Figure 8.3. The inclusion of this 'outlier' in the reliability dataset that calculates our MED threshold, would put significant upward pressure on what constitutes a MED in future years. This is by distorting the point at which 2.5 standard deviations from the mean SAIDI lies, as per the 2.5 Beta method.

Figure 8.3 Daily SAIDI performance in February 2020 (log scale)



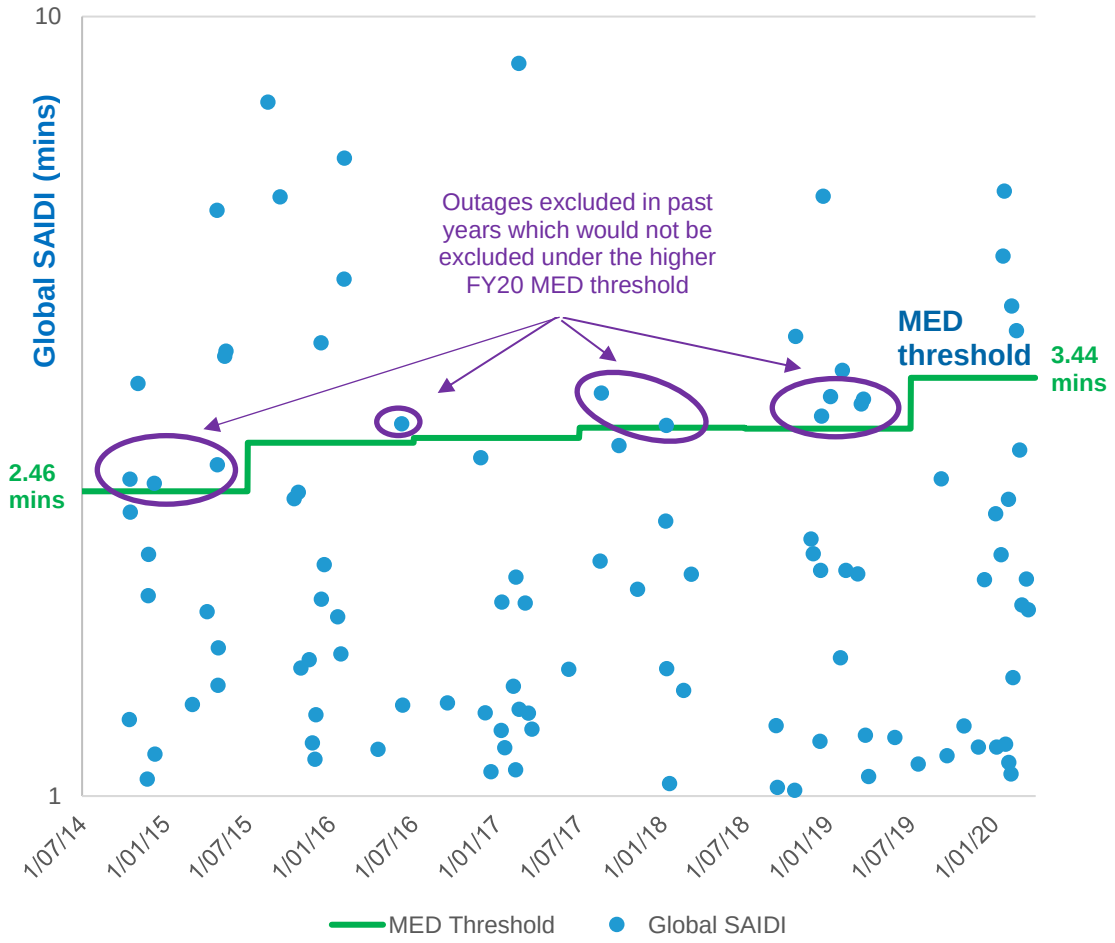
The impact of including major events in the calculation of the MED threshold is shown in Figure 8.4. It sets out the daily global SAIDI for all feeder types on our network for the last five years. Significantly, it shows that whereas the MED threshold was once 2.46 minutes in FY14, it has now increased, under the Beta 2.5 method, to 3.44 minutes – making it harder for outages to be excluded from our STPIS performance.

Figure 8.4 Daily global SAIDI and MED threshold (log scale)



Due to the increase in the MED threshold over time, some events that were excluded in past years will no longer be excluded. This is shown in Figure 8.5. It contains the same daily global SAIDI data as in Figure 8.4 above, but focuses on the outages in and around the MED threshold. It highlights that since FY14 there are 10 major events on our network which have been excluded under past MED thresholds, but which would not be excluded under our current 3.44 minute MED.

Figure 8.5 Daily global SAIDI – Focused on area around MED threshold (log scale)



Based on this analysis, we are of the view that the MED events during the 2019-20 storm season should be excluded from the five year data set which sets the MED threshold. This would lead to a consistent application of how our STPIS financial reward / penalty is calculated in FY20 and how our MED threshold will be determined under the Beta 2.5 method in future years. It would also mitigate the upward pressure on the MED threshold calculation that has seen it increase from 2.46 to 3.44 minutes.

We want to engage further with the AER and stakeholders on this issue. The continued upward pressure on the calculation of the MED threshold could provide for incentives to inefficiently reinforce network assets against storms and other extreme weather, leading to higher costs for customers. These incentives are likely to increase as global mean temperatures continue to rise.

9 Compliance Checklist

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

NER Cl	Requirement	Information provided	Section
6.6.1(a1)	Identification as a pass through event An event allowing for pass through of costs may be specified in the distribution determination	The application confirms that the 2019-20 storm season meets the 'natural disaster' event specified in Ausgrid distribution determination	3.2
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 incurrent materially higher costs (NER defined) in providing direct control services	The application confirms that Ausgrid incurred materially higher costs in providing direct control services, and accordingly the event qualifies as a positive pass through event	4.3 and 6.2
6.6.1 (c)	A DNSP must submit a statement within 90 business days of the relevant positive change event occurring	The AER has kindly granted a time extension for this application under clause 6.6.1(k) of the NER, to allow the application to be submitted no later than 1 August 2020.	1.1.2
(c) (1)	The statement must specify: • The details of the positive change event	The details of the positive change **event**, being the scale and impact of the natural disaster (being the 2019-20 storm season) is set out in the application	3.2
(c) (2)	• The date on which the positive change event occurred	As referenced above (see row 6.6.1 (c)) this date and its rationale is provided	1.1.2
(c) (3)	• The eligible pass through amount, being the increase costs in the	The application provides detail on the sources of cost increases and the cost	6.1

	provision of direct control services as a result of the positive change event	attributed for each, which constitutes the eligible pass through amount	
(c) (4)	• The positive pass-through amount proposed	The application proposes a positive pass through amount	6.1
(c) (5)	• The amount proposed to be passed through in the regulatory year in which the event occurred in and in subsequent regulatory years	The application proposes amounts to be passed through in FY22 to FY24 of the current regulatory period	Figure 1.2 and section 6.2
(c) (6) (i)	Evidence of: • the actual and likely increases	The application provides information on the costs incurred compared to average storm seasons	6.2 PwC report
(6) (ii)	• that the costs occur solely as a consequence of the positive change event	The application describes the data sources and processes to determine the costs solely occurring as a consequence of the positive change event An audit report on the records is also provided	5 and 6.2 PwC report
(6) (iii)	• relates to the circumstances where the cause of costs is a retailer insolvency event	Not applicable	N/A
(c) (7)	• other information as required under any relevant regulatory instrument - The AERs final decision on Ausgrid 2019-24 distribution determination notes that in assessing a natural disaster pass through application, it will have regard to the	The application discusses insurance considerations for natural disaster events such as the 2019-2020 storm season	7.3

	insurance held and whether that is efficient amount a prudent NSP would hold		
(6) (c1)	• relates to the pass through amount including expenditure for a restricted asset	Not applicable	N/A

Appendix A: List of attachments

Attachment A: Western Sydney University - Expert report – July 2020

Attachment B: PwC review of storm related expenditure – July 2020

Attachment C: Weather Zone - Seasonal Risk Report – September 2019

Attachment D: Ausgrid Storm Response Plan – April 2012

Attachment E: NS179 Vegetation management – January 2020

Attachment F: Guideline for Managing Vegetation Near Power Lines – November 2016

Attachment G: Electricity Safety Management System – July 2019

Attachment H: Post tax revenue model – July 2020