

Essential Energy response to the NSW Independent Bushfire Inquiry

April 2020



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Executive Summary

Essential Energy is responsible for building, operating and maintaining one of Australia's largest electricity network, covering 737,000 square kilometres – delivering essential electricity services to 95 per cent of regional, rural and remote NSW and parts of southern Qld.

It delivers power to more than 170 hospitals, 1,250 schools and over 855,000 homes and businesses via a network that includes over 1.3 million power poles, over 370 zone substations and enough overhead powerlines to travel around Australia thirteen times. The length of our longest powerlines is 1,905km and it services 335 customers.

Essential Energy is on call 24/7 to fix power outages, maintaining the poles and wires to meet customers' needs and looking at innovative and cost-effective ways to empower the communities it serves. This round-the-clock operation was crucial to Essential Energy's response to the 2019-20 bushfire season.

Essential Energy expresses its sympathy to its communities affected by the devastating bushfires that caused tragic loss of life, destruction of numerous properties, and significant livestock and wildlife losses. The impact of these bushfires was severe and widespread.

During the Bushfire Crisis, Essential Energy's teams worked as quickly as safety allowed to restore power. Over 104,000 customers were affected by power outages across the Essential Energy network due to bushfires this season. Essential Energy leaders were located in established Emergency Operational Centres (EOCs) partnering with the NSW Rural Fire Service (RFS) to ensure safe access into impacted areas to assess the network damage. Essential Energy used depots central to the fire areas as hubs.

Many of Essential Energy's employees saw firsthand the impact of the bushfires. More than 470 front line crew assisted in the ongoing restoration work, along with fleet and vegetation staff, increasing the number of staff involved in the bushfire response at its peak to 540 employees. Over 3,200 power poles were damaged, over 430,000 materials were used to complete repairs, and over 22,500 hazardous trees were made safe. All customers who could be restored with power have been, however ongoing restoration work is still occurring. For example, the removal of hazardous trees will continue to take some time.

The financial impact on Essential Energy has been completed by assessing the damage of the Bushfires to our Assets as well as the surrounding Vegetation Corridor. Based on current analysis we have predicted the total financial impact of the bushfires is in the order of \$144 million. This consists of asset rectification of \$57 million, vegetation hazard removal, management and disposal of \$54 million and STPIS penalties of \$33 million.

Essential Energy has been in discussions with the NSW Government about recovering these costs from the NSW Bushfire Recovery Fund, with an alternative being the recovery of these costs from customers via higher network charges - if a cost pass through application is submitted to, and approved by, the Australian Energy Regulator (AER). The recovery of these costs from customers already impacted by the bushfires would not be Essential Energy's preferred option. Without cost recovery options, Essential Energy will carry an increased amount of debt significantly lowering distributions to the NSW Government,

Investment in Essential Energy's ongoing reforms has delivered significant benefits to customers during these events by enabling more efficient mobilisation of the workforce (for example, mobile fleet management and standard toolbox talks as field crews were rotated into the response from other regions across the state). Essential Energy's processes and procedures were aimed at ensuring resources could be ramped up during significant emergency events.

Essential Energy provided generators to power evacuation centres and local council critical infrastructure such as water and sewerage supplies. The ability to launch a broad and rapid response is related to Essential Energy's proactive attendance at all EOCs across the state. This involvement enabled immediate feedback to crews and hubs to ensure quick responses to known critical supplies for impacted local council infrastructure. However, some consideration needs to be given to a more formal process to co-ordinate the various entities involved in the response – clarity on the roles and responsibilities of different agencies in these areas would be helpful.

Essential Energy also provided residential and business customers with generators and fuel vouchers until power was restored. In addition, to ensure the safe and rapid repair of damaged infrastructure Essential Energy replaced private assets to habitable dwellings in the aftermath of the bushfires and will replace private assets to destroyed premises at no cost to the landowner up to the value of the previous installation. Furthermore, the business has waived connection fees for customers that are rebuilding their homes and businesses and Essential Energy has

and will continue to make a \$600 contribution towards costs associated with reconnecting premises to the distribution network over the next two years. Customer disconnections due to non-payment were suspended during the NSW Emergency Declaration period and backdating of final meter readings to the previous reading date, is being implemented for premises destroyed by bushfire. None of these activities are currently contemplated within the regulatory framework that Essential Energy operates in.

If there are governmental and community expectations that the business should undertake these types of activities in emergency situations, then changes to the regulatory frameworks that Essential Energy operates in is recommended so that regulatory bodies can include them in future regulatory determinations for Essential Energy.

Finally, the bushfire crisis has highlighted the need to review how power supply is restored in the face of increasingly frequent and severe fire and storm activity. Essential Energy wants to avoid rebuilding lines and other infrastructure which will be in place for many decades when another technology is available, which is capable of delivering a more reliable, resilient supply of electricity at a lower cost.

The current bushfire crisis represents an opportunity to consider network resilience in a practical manner and highlights some of the regulatory barriers to enhancing the resilience of electricity networks in remote and regional areas. It is clear there are expectations for Essential Energy to deploy appropriate power restoration solutions quickly, and at scale, during disaster response. Stand Alone Power Systems (SAPs) have been trialled by Essential Energy in the South Coast bushfire restoration and SAPs are also an increasingly viable solution to permanently supply power to some bushfire impacted communities. However, this will require a supporting regulatory and market framework.

Summary of recommendations

Co-ordination



- A more formal process is required to co-ordinate the various entities involved in the response – clarity on the roles and responsibilities of different agencies would be helpful.
- Electricity distributors have the expertise to undertake some of these roles, however, consideration is needed by Government on the cost recovery of undertaking this work.

Network Resilience



- Regulatory and market frameworks should be reviewed so that they support alternative lower cost options when rebuilding damaged electricity infrastructure, such as Stand Alone Power Systems (SAPS) – this is particularly relevant in high bushfire risk areas.

Affordability



- Essential Energy has an obligation to ensure expenditure decisions are prudent and efficient so that customers pay no more and no less than required.
- Recommendations of the NSW Bushfire Inquiry need to carefully balance the risk reduction versus the costs to implement.

Emergency generation



- Although Essential Energy assisted in supplying generators for back-up generation, this activity does not strictly fit within our role as an electricity distributor or the regulatory framework.
- If there are expectations that the business should undertake these types of activities in emergency situations, then the regulatory framework needs to be changed so that they can be included in future regulatory determinations for Essential Energy.

Access to data



- Distribution networks only have access to some smart meter data for billing purposes.
- Distribution networks should have access to more smart meter data to assist in emergency recovery and to target efforts to areas of the network we know are not energised and may be damaged.

Cost recovery



- Essential Energy's intention is to exhaust all avenues for bushfire cost recovery before a cost pass-through application is submitted. Essential Energy is reluctant to pass through price rises to its customers, given that many have already been impacted by drought and/or bushfires.

De-energisation



- Essential Energy is currently assessing proactive de-energisation to mitigate the risk of network initiated fires however it is a complex issue with significant stakeholder engagement required.
- The risk reduction resulting from de-energisation of the power line needs to be balanced against the introduced impacts from loss of supply to customers who rely on continuous power, such as life-support customers.

Land and property access



- Access to property, including state and national parks and railway easements is beginning to present some challenges for post-bushfire vegetation and hazard tree management.
- A review of long-standing arrangements and regulations is required to ensure that the risk of trees coming onto contact with the network is minimised.

Unsafe structures



- Amendment to the Electricity Supply Act 1995 (NSW) should be considered to allow for better management of unsafe structures built too close to the powerlines (network encroachments).
- In many cases it is more efficient and much more practical to move the existing network around the encroachment so that it no longer presents an issue, rather than demolishing an entire structure – but we cannot currently recover costs from customers for this solution.

Stand alone power systems



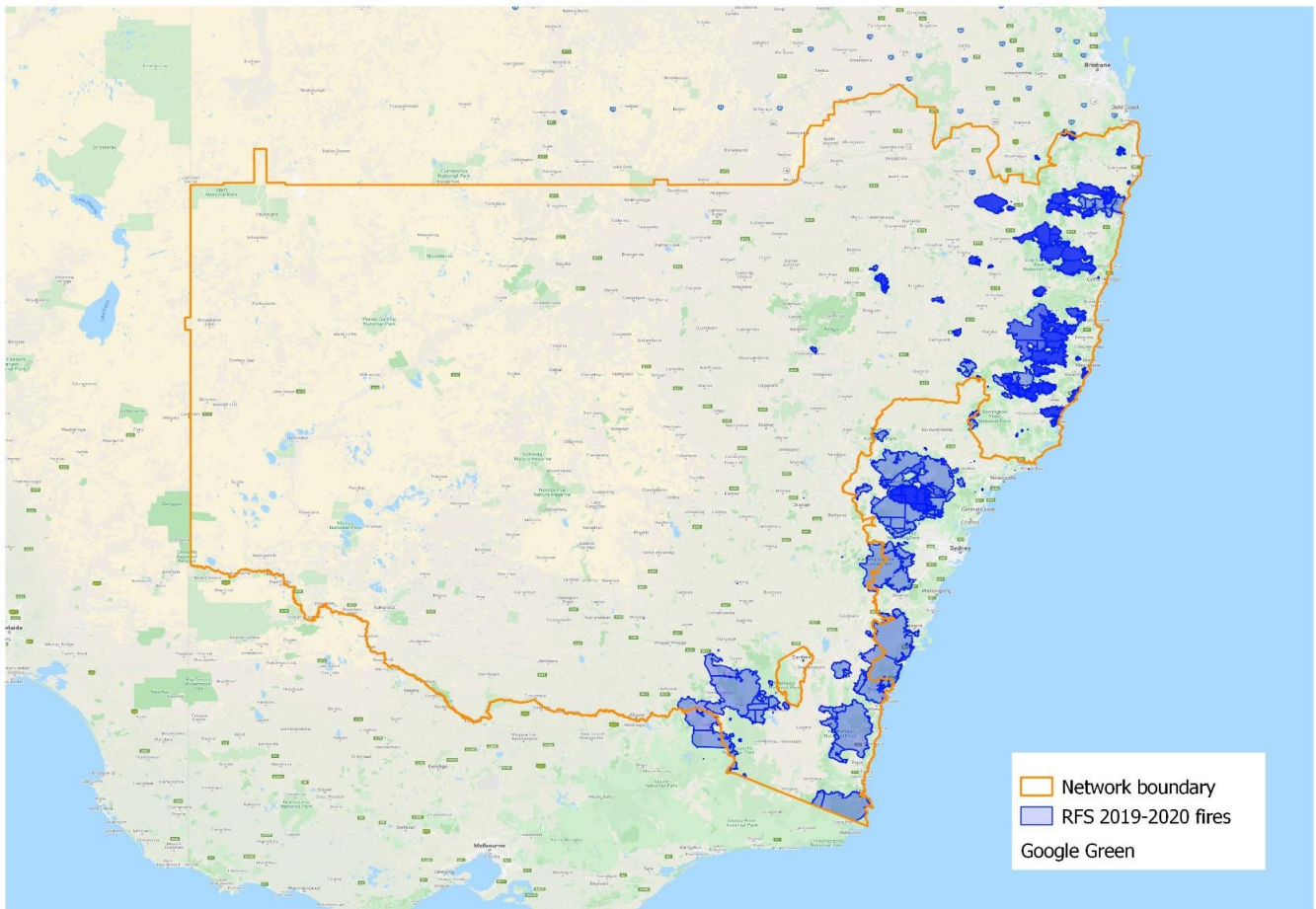
- Essential Energy is concerned that the regulatory arrangements proposed by the AEMC will not lead to the best customer outcomes for regional and rural customers and are likely to slow the deployment of SAPS in areas of NSW where they could be most beneficial.
- The NSW government needs to ensure that the right jurisdictional arrangements are in place so that SAPS can be deployed as soon as changes to the National Electricity Law are passed.

1. Causes and contributing factors

The 2019-20 bushfire season was lengthy and unprecedented. Significant fire activity in Essential Energy's distribution network commenced in October 2019 and continued until February 2020:

- > Bushfires affected Rappville and surrounding areas in October 2019;
- > From 8 November and throughout December bushfires impacted the northern part of Essential Energy's network with devastating consequences for life and property; and
- > From late December and throughout January and February, even more significant fires left a devastating trail of destruction throughout the South coast and Riverina areas of NSW.

The map below shows Essential Energy's network area (outlined in orange) and the 2019-20 fire areas.



Essential Energy and the customers and communities it serves, have arguably experienced the worst bushfire season in living memory. The bushfire season was unprecedented with widespread and intense fire activity. This followed an extensive period of drought which left NSW extremely dry and in a vulnerable position to face the fire activity endured by many of our customers and communities.

None of the major bushfires in the 2019-20 season were initiated by Essential Energy's network. However, it is clear, that a drying and warming climate increases the likelihood of bushfires and network damage and increases the potential likelihood and impact of network started fire.

In the face of increasingly frequent and severe fire and storm activity, the need to look at and implement alternatives should be considered by policy/rule makers and regulators, where it is in the long term interest of our customers. This is further discussed in *section 5 Preparation and planning for future bushfire threats and risks*, and *section 7 Appropriate action to adapt to future bushfire threat*.

2. Preparation and planning

Essential Energy is required to comply with many regulatory requirements, with some of these requirements specifically targeted at bushfire safety and preparedness. Further to these requirements, Essential Energy has developed and implemented bushfire preparedness strategies. There can be conflicting priorities between regulatory bodies given safety and technical regulation is governed at the NSW jurisdictional level, and economic and incentive regulation is managed at the national level. Essential Energy is responsible for complying with safety and technical regulatory requirements whilst also ensuring that investment in complying with these requirements is prudent and efficient.

Below is a summary of some of the regulatory interactions and business strategies that assist Essential Energy in its bushfire preparedness activities.

2.1 Essential Energy obligations under the WHS Act 2011 and Electricity Supply Act 1995

Network safety and reliability are key priorities for the organisation. Essential Energy has an obligation under the *Work Health and Safety Act 2011 (NSW)* and the *Electricity Supply Act 1995 (NSW)* to manage risk to the safety of the public, network workers and the environment so far as is reasonably practicable.

Under the *Electricity Supply (Safety and Network Management) Regulation 2014 (NSW)*, a network operator is required to take all reasonable steps to ensure that the design, construction, commissioning, operation and decommissioning of its network is safe. Essential Energy is required to have a safety management system in place that among other things, deals with the management of bushfire risk relating to electricity lines and other assets that are capable of initiating a bushfire. Essential Energy is also required to manage bushfire risk relating to aerial consumer mains on bushfire prone land that is private land.

Essential Energy is responsible for complying with the Regulation through the development and implementation of its Electricity Network Safety Management System.

2.2 The Independent Pricing and Regulatory Tribunal of New South Wales (IPART)

The Independent Pricing and Regulatory Tribunal of New South Wales (IPART), evaluates the safety management system through regular performance reporting and compliance audits including audits of bushfire preparedness. Compliance with the provisions of the Regulation has led to Essential Energy implementing a Bushfire Management Plan to manage the risk and impact of bushfires in and around the network.

Essential Energy's Bushfire Risk Management Independent Audit Report from March 2020, concluded that Essential Energy had complied with its requirements with respect to managing bushfire risk from assets and vegetation on its own network, and in accordance with the Vegetation Management Implementation Plan for *ISSC 3 Guideline for managing vegetation near power lines* Compliance – April 2018 as submitted to IPART.

Our rural areas are all considered 'fire prone'. These however have different levels of fire risk primarily based on potential loss of homes which Essential Energy has classified as P1 to P3 (for rural zones) and P4 (for urban or non-bushfire prone zones). The proportions of our network in each zone are as follows:

Fire risk level	Proportion of assets	Approx. volume of spans or poles
P1 – fire prone / highest risk level	9%	120,975
P2 – fire prone / 2 nd highest risk level	28%	390,254
P3 – fire prone / 3 rd highest risk level	44%	606,751
P4 – Non-fire prone / lowest risk level	19%	273,173
Total	100%	1,391,153

This table shows that 81% of the network is in fire prone areas across all risk levels which is more than one million poles or spans. However, only 9% of the network is in the area with the highest level of risk.

Vegetation management is our single biggest operating expense each year (after labour), accounting for approximately \$114 million of the operating expenditure budget.

Essential Energy is working hard to improve the efficiency of its business whilst also ensuring employee and community safety and that network reliability is maintained at the required standard. To ensure expenditure (including vegetation management expenditure) on the network is prudent and efficient, a risk-based approach to asset management is vital. This means that expenditure on the network is focussed on the areas needed and unnecessary expenditure is avoided.

One of Essential Energy's key objectives is to place downward pressure on network charges to ensure our communities have access to an energy supply that is affordable, whilst also ensuring this supply is safe and reliable. Careful consideration must be given to expensive solutions that don't alleviate the risks as this is not in the community's best interests.

2.3 Strategy

Essential Energy has identified the hazards to its network associated with bushfire. The identification of new hazards is an ongoing business process as we recognise that climatic and environmental conditions change.

Essential Energy's strategic planning for bushfires outlines the overall approach and the relationship with other strategies, policies, and risk management functions. The strategy includes visibility of existing fire risk controls adopted by the business as well as potential future fire risk controls.

Essential Energy utilises formal safety assessment processes using data analysis and relevant research to understand the bushfire threat as it relates to network assets. Essential Energy relies on strategic relationships with experts such as the Bushfire & Natural Hazards Cooperative Research Centre (CRC), RFS, and University of Melbourne Fire Ecology Department. The safety assessment process identifies hazards and the associated controls adopted to manage such hazards. In addition, extensive modelling is conducted on scenarios involving risk and consequence, such as potential property loss. The modelling uses sophisticated fire simulation modelling software and techniques integrated with climatic and environmental conditions (for example, fuel conditions).

It is worth noting there is rapidly advancing technology in this area, in particular big data, LIDAR and satellite.

Essential Energy uses this modelling as an input into works planning and expenditure decisions. It ensures that expenditure is directed to mitigate bushfire risk in a prudent and efficient manner.

2.4 Planning and design

Planning and design of the Essential Energy distribution network is differentiated on the basis of bushfire risk. In high bushfire risk locations, consideration is given to a number of options, including:

- > Removal of lines including installation of SAPS on candidate feeders to remove high risk lines completely, noting there are current limitations on the installation of SAPS under the regulatory framework.
- > Undergrounding of power lines.
- > Use of insulated conductors.
- > Increased network protection levels.

Like vegetation management, expenditure on the above options must be prudent and efficient and a risk-based approach to asset management is vital ensuring that selection of options is focussed on the areas needed and unnecessary expenditure is avoided.

2.5 Maintenance undertaken with respect to mitigating bushfire risk

A program of pre-summer bushfire aerial inspections are conducted in high bushfire risk zones to comply with statutory requirements, such as *ISSC 3 Guideline for managing vegetation near power lines* across the network prior to the bushfire season. Any asset condition that poses a risk to the safe operation of the network over the

bushfire period is identified and corrective action is taken prior to the bushfire period. These annual aerial inspections and subsequent corrective works complement the ground-based asset inspection program that provides insight into asset conditions and informs the maintenance program.

Fortnightly dedicated bushfire preparedness meetings are undertaken with relevant field managers to address task rectification in the highest risk areas across the network.

2.6 Vegetation management and urban vegetation encroachment

Vegetation work is differentiated on the basis of bushfire risk, with additional clearance from conductors to vegetation being specified in high bushfire risk areas. A combination of aerial and ground line inspections help inform the maintenance of vegetation corridors, with corrective works prioritised in high bushfire risk areas. Hazard trees, those which are outside of the clearance areas but present a risk of impacting the network should they fall or lose branches, are assessed by vegetation inspectors for health and risk of failure.

In urban areas, urban vegetation encroachment is also assessed as a potential network reliability risk.

Compliance meetings are held fortnightly with senior management to ensure ongoing visibility that vegetation compliance across the network is being maintained in compliance with *ISSC 3 Guideline for managing vegetation near power lines*.

2.7 Preparing employees during bushfire risk periods

Essential Energy employees are given accredited training with the RFS for bushfire awareness, how to conduct work in bushfire prone areas, as well as how to implement fire ground protocols with fire agency staff. Essential Energy provides training for the RFS on electrical dangers and how to work safely with electrical assets in a bushfire.

The safety of Essential Energy employees is of paramount importance during bushfire emergencies. Daily briefings of risks are undertaken each morning and there are reminders of changes to work practices on total fire ban days.

Some categories of timber poles need to be handled with caution once burnt as they may release toxins as well as dangerous vapours and ash. Falling trees and branches are a significant risk in bushfire impacted areas and an ongoing hazard in the aftermath of a bushfire. Road closures may also inhibit access.

Essential Energy employees will not enter a bushfire zone until approval has been provided by the RFS that it is safe to begin work.

Essential Energy also has a Public Electrical Safety Awareness Plan (PESAP) in place to raise community awareness around electrical safety, particularly on the importance of vegetation clearance zones to mitigate bushfire risk.

The resources provided by Essential Energy to deal with a bushfire depend on the severity of the event. Essential Energy's emergency management procedures include resource management planning, which includes procurement of services and materials. There is also capability to mobilise crews from other areas to deal with unplanned outages from bushfires.

During total fire ban days, the System Operations team change the network protection configuration to reduce the risk of fire by disabling the auto reclose functionality of protective devices and changing settings within these devices in line with *ISSC 33 Guideline for Network Configuration During Bush Fire Risk Days*. Additionally, in the event that power line protection has activated, the power line is patrolled by field staff to identify defects prior to re-energisation to reduce the likelihood of ignition. This means that restoration of power to customers will take longer on these days.

Additional precautions are adopted by network workers to minimise the likelihood of starting a fire, such as suspension of planned works and restrictions on the operation of certain equipment.

3. Responses to bushfires

3.1 Impact of the NSW bushfires on Essential Energy

Essential Energy acknowledges the unprecedented extent and intensity of the 2019-20 bushfires in New South Wales (NSW) and the devastating impact of the fires on NSW communities.

The impacts of the recent bushfires on the Essential Energy electricity network were severe and widespread. There was approximately 3.4 million hectares of the Essential Energy footprint affected by the fires. Over 104,000 customers were affected by the power outages across the Essential Energy network. Essential Energy crews worked as quickly as safety allowed to restore power. More than 470 front line crew assisted in the ongoing restoration work, along with fleet and vegetation staff, increasing the number of staff involved in the bushfire response at its peak to 540 employees. Over 3,200 power poles were damaged, over 430,000 materials were used to complete repairs, and over 22,500 hazardous trees were made safe.

Whilst all customers who can be restored have now been restored with power, ongoing restoration work is still occurring, for example, there are still hazard trees that need to be removed.

The diagram below illustrates the impact of the 2019-2020 bushfires on Essential Energy.



3.2 Resourcing, coordination and deployment

As stated above, the resources provided to respond to a bushfire depend on the severity of the event. The business' emergency management procedures require management and senior leaders to deploy sufficient resources to the areas of highest need, including mobilising crews from other areas as required. Not only did Essential Energy rely on mobilising its own crews across operational areas to provide support in bushfire affected areas, additional assistance was also provided by other Distribution Network Service Providers (DNSPs) from NSW.

During the bushfire response, Essential Energy employees recorded no significant injuries. Essential Energy had a fatigue policy in place, which applied to ground crew and the coordination team.

Essential Energy depots were adjacent to fire grounds were set up as hubs and resourced to provide support, logistics, design & planning, and safety leadership. Fleet and maintenance teams were set up in the hubs and worked after hours, in accordance with WHS policies, to ensure field crews had ongoing access to operational and provisioned vehicles. Additional equipment was necessary to assist in the restoration work. This included extra fuel, tyres, and supply of poles and other equipment.

A resourcing plan was developed, and operations co-ordinators deployed to handle the significant logistics required. This planning and co-ordination included keeping mobilised crews fed, hydrated, and accommodated whilst away from home for extended periods. Crew that worked up to 12 hours in difficult conditions required this level of organisation. It was important that the crews lived, worked, spent money and socialised within local communities, as apart from helping restore critical infrastructure, it was also important to talk to the local community especially those directly impacted.

Essential Energy and the Energy and Utility Services Functional Area Co-ordinator (EUSFAC) co-ordinated their activities at state level. The EUSFAC co-ordinates Energy and Utility Services Functional Area support and resources for emergency management with agreement and participation from supporting organisations.

The collaborative approach with RFS, local councils, support agencies and community-based organisations was critical to supporting local communities. The embedding of staff in the RFS State Operation Command (SOC) and Emergency Operation Centres (EOCs) was essential to a timely and safe response to this season's bushfires.

Attendance at the SOC was necessary for up to date and accurate information, and co-ordination with other NSW emergency services. Having an embedded staff member at the SOC gave Essential Energy direct access to information about developing situations, and the outlook for the days ahead. This in turn assisted Essential Energy to make considered, strategic decisions. The embedded staff member also served as a valuable facilitator and conduit across other government agencies who were also embedded in the SOC, for example the NSW Police Service, Roads and Maritime Services (RMS) and the State Emergency Services (SES). This assisted with issues such as closed roads and access to restricted areas, clearance of vegetation from critical infrastructure and access to critical communication sites enabling recovery efforts by other agencies to be expedited.

Whilst the collaborative relationship with EUSFAC enabled Essential Energy to be a part of the SOC, there was no formal structure or process for this. It would be useful to consider a more formal process for the future to enable co-ordination of the various entities involved in the response.

Attendance at the local EOCs was critical in co-ordinating local access to fire grounds to assess damage and to repair and restore supply. This provided Essential Energy the opportunity to work directly with customers and their representatives to prioritise restoration in accordance with their needs.

Essential Energy used aircraft and technology such as drones, thermal cameras and satellite imagery to assess network damage and target restoration work.

3.3 Supporting customers impacted by bushfires as they recover and reconnect to the network

Strong positive feedback was received from the community on the dedication and commitment of Essential Energy crews. We proactively contacted customers impacted by the South Coast and Riverina fires where care for vulnerable customers was front of mind, particularly customers who depended on electricity for life support devices. Our customer contact centre phoned people to confirm their requirements and visited customers' premises where customers could not be contacted by phone.

Essential Energy provided large generators to power evacuation centres, and Council critical infrastructure such as water and sewerage supplies. Given the severe and unprecedented nature of the bushfires and the consequential network damage, Essential Energy also provided some customers that were experiencing extended outages (generally more than 10 days) with generators and fuel vouchers until power was restored. Customers impacted by extended outages were contacted by telephone, or by a site visit to confirm their welfare. Where a customer accepted a loan generator, or indicated they are using their own generator, they were also offered a \$150 EFTPOS card towards fuel costs for running the generator.

Essential Energy provided 705 fuel cards and 165 generators during the South Coast response. Essential Energy in its role as the electricity distribution network was asked by the NSW government to provide these generators.

This was mainly because our workforce was on hand and had the necessary skills to provide these services in a safe and timely manner.

While Essential Energy was happy to undertake that initiative, the provision of such back-up generation services does not strictly fit within our role as an electricity distributor or the regulatory framework within which Essential Energy operates. As a result, generators and other equipment subsequently deployed were not part of Essential Energy's inventory. There is some uncertainty as to who the most appropriate party to provide these services. Other potential parties that may be appropriate to be given this responsibility could include organisations such as the SES. Alternatively, consideration should also be given to strengthening critical local infrastructure backup arrangements, such as water treatment plants, to have sufficient back-up generation on site.

If the NSW Bushfire Inquiry recommends that Essential Energy should be responsible for supplying back-up generation in situations such as the 2019-20 bushfire season, changes to the regulatory arrangements for distribution businesses in NSW will be required. For example, the *Electricity Supply Act 1995 (NSW)* could be altered to include requirements to provide such services in emergency situations. This would allow distribution networks to plan for the associated expenditure (including capital expenditure and internal capability build) for inclusion in regulatory proposals submitted to the AER. The AER will assess the proposed expenditure to determine if it is prudent and efficient. If the expenditure is approved by the AER it will be included in regulatory determinations and subsequently recovered from customers.

Emergency generators provided a temporary supply until connections could be restored to the network. Where it was safe to do so, Essential Energy bypassed customer meters destroyed by bushfire to quickly restore power to homes and business premises. Under the National Electricity Rules, Essential Energy is not legally able to replace destroyed customer meters as replacement is now the responsibility of Retailers. Retailers were notified to arrange a meter replacement with the impacted customer customers.

The reason the National Electricity Rules do not allow Essential Energy to replace metering was an outcome of the Power of Choice review conducted by the Australian Energy Market Commission (AEMC) during 2012. This review recommended the implementation of a number of rule changes, including the Competition in Metering Rule Change. The Australian Energy Market Operator (AEMO) worked with industry to implement these changes by 1 December 2017. The Power of Choice reforms are now fully implemented which led to important changes to the way metering services are conducted in the electricity market.

The Power of Choice reforms require all new metering to be a smart meter. *Section 3.9 – network monitoring and smart meters* provides further discussion on smart meters and the benefits that are possible for Essential Energy.

Essential Energy has also waived connection fees for customers rebuilding after the bushfires and is contributing \$600 towards costs associated with reconnecting premises to Essential Energy's network over the next two years.

To avoid estimated meter readings and network access charges for sites destroyed by bushfire, Essential Energy backdated final readings for premises destroyed due to bushfires to the previous reading date. This means, customers will not pay network charges for the period between the most recent meter reading and the date of the bushfire.

Customer disconnections due to non-payment were also suspended during the NSW Emergency Declaration period.

To ensure the safe and rapid repair of damaged infrastructure Essential Energy replaced private assets (privately owned power poles) to habitable dwellings which had been damaged or destroyed by bushfire on a like for like basis. For customers with private assets and destroyed homes, Essential Energy will replace or repair private assets on a like for like basis for any that rebuild within the next two years.

Essential Energy suspended communications with customers regarding private asset defect rectification in bushfire-affected areas to avoid causing any further stress to impacted individuals.

An assessment is underway on existing private asset defects in bushfire-affected areas to determine ignition risk and electrical safety risk. Customer assistance is being provided to owners of these assets, if required, through Essential Energy's customer support policy.

Essential Energy's and Endeavour Energy's customer contact centres supported each other by advising customers outside their own jurisdiction who called during the South Coast bushfires. They were able to provide restoration times obtained from the other DNSP's website or relevant media releases as well as assisting life-support customer calls using 'warm' transfers (that is, providing relevant information as part of the call transfer so the customer does not have to repeat information). Essential Energy thanks Endeavour Energy for its assistance and support.

3.4 Operational work following bushfires

Essential Energy draws the distinction between the recovery period and ongoing restoration works.

Essential Energy has effectively restored power to all customers impacted by power outages from the 2019-20 bushfire season, who were able to have their power restored. For bushfire impacted customers who are in the process of rebuilding their homes (or not yet started) that have been destroyed - they need to engage an Accredited Services Provider (ASP) of their choice to undertake the connection work, as this activity is classified as a contestable service by regulation. Whilst customers are required to pay for contestable works, re-connections required as a result of these bushfires and completed by ASPs, will be reimbursed to the customer by Essential Energy. Essential Energy is working with ASPs to ensure they provide timely connection information.

As part of ongoing network restoration works, and consistent with obligations to maintain the safety of the network, Essential Energy is identifying, removing and disposing of bushfire damaged hazard trees. This work will take some time and is expected to cost approximately \$54 million. This is in addition to Essential Energy's regular risk assessments, of vegetation surrounding the electricity network, undertaken during planned maintenance of vegetation clearances. Vegetation to be removed is typically visually defective, such as dead vegetation, dying vegetation or vegetation that appears structurally unsound. This risk assessment and identification work is undertaken by qualified inspectors driving or walking, in areas of identified high bushfire risk, in preparation for contractors subsequently removing and disposing of the hazard trees.

3.5 Communications and stakeholder engagement

Over the bushfire season, Essential Energy implemented a comprehensive communication plan to keep customers, stakeholders and employees up to date with the bushfire response.

This involved daily updates to stakeholders, including local Members of Parliament, local councils, mayors, media and key business contacts in affected areas, relevant NSW and Commonwealth Departments and State and Commonwealth Ministers. Essential Energy's senior leadership team provided multiple updates to NSW Ministers, NSW Departments, including Treasury, and to the Federal Minister for Energy and Emissions Reductions.

This information was used by the media and EOCs to ensure consistent, accurate and up-to-date messaging and advice was being provided to communities in relation to their electricity restoration and assistance from Essential Energy.

As mentioned above, the collaborative approach with RFS, local councils, support agencies and community-based organisations was critical to supporting local communities. The embedding of staff in the RFS State Operation Command and EOCs was essential to a timely and safe response to restoring power.

Traditional media was used as well as social media platforms, primarily Facebook and Instagram. The Essential Energy website also had dedicated bushfire pages set up with links on the home page for customers to access information. To further assist the community, once the scope of damage to the network was ascertained following access to affected areas, estimated times for power restoration were provided via Essential Energy's Power Outages webpage.

To illustrate the level of media activity for a specific region, in relation to media for the South East NSW Bushfire Response, 1,621 articles were printed with 6,204 articles appearing on the internet.

3.6 Materials

There were more than 430,000 materials used for repairs and over 3,200 poles replaced in the Essential Energy network in the 2019/20 bushfire season.

As part of Essential Energy's Bushfire Management Plan, the business is assessing other fire-resistant pole materials. This includes comparing the fire resistance of composite fibre power poles to treated timber and concrete poles. Since composite fibre poles cost four times more than timber poles, an assessment is also underway on exploring other lower cost options, such as coating existing treated timber poles located in bushfire-prone areas with non-toxic fire retardant.

Essential Energy has been an early adopter of fibreglass crossarms. These were in service in the bushfire impacted areas and whilst entire timber poles were destroyed the crossarms often remained attached to the conductors with no sign of damage.

Essential Energy has an obligation to ensure expenditure decisions are prudent and efficient so that customers pay no more and no less than required. Careful assessment and consideration of available options to inform expenditure decisions is vital to achieving this obligation. For example, replacing all timber poles in the network with composite fibre poles would not provide the benefit to justify such a significant investment. It would also be unaffordable for our customers. However, replacing a small number of highly targeted poles in very high bushfire risk areas may provide some benefit to justify the smaller investment.

3.7 Undergrounding and Insulated Conductors

Sometimes Essential Energy will supply electricity underground – this can be an option taken to reduce bushfire risk. As discussed above, Essential Energy has an obligation to ensure all expenditure is prudent and efficient.

An underground network can be significantly more expensive to install than overhead lines. They are also generally more reliable than overhead lines. However, if an underground fault does arise, these faults are inherently more difficult to locate and repair thereby increasing the time taken to restore power. Undergrounding Essential Energy's network would be extremely expensive and would not provide the benefit to justify such a significant investment. Like the composite fibre example above, it would also be unaffordable for our customers.

However, Essential Energy does encourage private low voltage consumers' mains connections in rural areas be placed underground. In bushfire prone areas, Essential Energy requires customers to connect with underground lines. The NSW industry safety guideline *ISSC31 Guideline for Management of Private Overhead Lines*, the *Service and Installation Rules of NSW* and Essential Energy's private asset policy, promote the use of underground low voltage lines for new constructions or when replacing existing overhead at the end of their service life, recognising this has benefits beyond bushfire resilience.

Use of insulated conductors is specified in Essential Energy's Overhead Design Manual. Where an exemption from construction using underground is approved by Essential Energy, insulated overhead cable (Low Voltage Aerial Bundled Cable) must be used. The Design Manual requires consideration of insulated high voltage conductors rather than bare conductors where the area has been identified as having a very high bushfire risk and where assessment of the risk supports this. For example, the use of insulated (CCT conductor) or other equivalent rated conductors should be evaluated where the spans are located in:

- > areas of Essential Energy designated bushfire risk; or
- > spans with high density vegetation or hazard trees, for reduced fire risk and/ or reduced tree costs clearing costs; or
- > any other case where a positive cost benefit case supports the installation.

These requirements apply to both Essential Energy and external ASPs engaged by customers to construct lines.

3.8 Reclosers

In 2007 a working group of NSW electricity distribution network operators prepared a guideline for the Industry Safety Steering Committee referred to as *ISSC 33 Guideline for Network Configuration During Bush Fire Risk Days*. This was reviewed and amended following the Black Saturday fires in 2010.

The Victorian Powerline Bushfire Safety Taskforce created as a result of the 2009 Victorian Black Saturday fires.. undertook ignition risk testing from power lines including the role that recloser switches play. The Taskforce's research supported the view of the Victorian Bushfires Royal Commission that allowing reclosers to automatically re-energise lines after faults on high risk days increased the risk of fire ignition at a time when fires are harder to suppress.

For this reason, during total fire ban days, Essential Energy's System Operations group disable the auto-reclose functionality of protective devices and change protection settings within devices to make them more sensitive and faster operating, via remote telemetry. This puts the need to reduce fire ignition above that of reliability of supply on high risk days. Additionally, in the event that power line protection has activated, the power line is physically

patrolled by field staff to identify defects prior to re-energisation to reduce the likelihood of ignition. This means that restoration of power to customers will take longer on these days.

Additional precautions are adopted by employees to minimise the likelihood of starting a fire, such as suspension of planned works, and restrictions on operations of certain equipment.

3.9 Network monitoring and smart meters

As discussed above, the Power of Choice program led to changes to the National Electricity Rules that prevent Essential Energy from replacing customer meters. These Rules assign responsibility for customer meter replacements to Retailers and when a meter requires upgrading or replacement, a smart meter must be installed. A smart meter measures energy consumption and demand, and other attributes, in periods of five to 15 minutes.

There is significant scope for smart meter data to provide important insights into network conditions. For example, smart meters are able to provide data about voltage, consumption, exports and neutral integrity. This data may assist distributors to detect potential faults or prevent ignition of fires from electrical assets. Where obtainable, Essential Energy believes this data should be made available to DNSPs as it is a cost-effective way to provide important data and monitoring of the network on virtually a real time basis. This can assist Essential Energy in running a safer network.

The Power of Choice reforms may not have sufficiently considered the potential for smart meters to provide this important information as the information provided to networks is limited to that required to perform billing functions. All other data must be procured at a cost from the market which may lead to higher costs for network monitoring overall. This is not in the long-term interests of consumers.

One example of where useful smart meter data was not available to us during the bushfire response is information on where power outages had occurred in our networks. Smart meter data would have been invaluable in investigating which parts of the network were still energised and which had been damaged. Distribution networks should have access to this information to assist in emergency recovery and to target efforts to areas of the network we know are not energised and may be damaged.

4. Any other matters

4.1 Cost implications for customers in cost recovery

The damage to the Essential Energy network has been significant, and the bushfires have come at a substantial cost to Essential Energy.

Essential Energy is currently working through the process of collating and analysing the data on the financial impacts to date of the 2019-20 bushfires, as well as future costs related to the event. Working groups have been formed to coordinate this process and early indications are that it will take some time to achieve a full assessment of the financial implications as some data required is not currently available.

The current estimate of the additional costs incurred by the business relating the 2019-20 bushfire season are in the order of \$144 million. The financial impact on Essential Energy has been completed by assessing the damage of the Bushfires to our Assets as well as the surrounding Vegetation Corridor.

To calculate the financial impact, we have used a number data sets and data science techniques to complete predictive analytics. The data sets include using the electricity network system, including asset types and locations than layering this with external data sets from RFS Polygons and Satellite Imagery.

Whilst the business has been in discussions with the NSW Government about recovering these costs from the NSW Bushfire Recovery Fund, there is the potential to recover these costs from customers via higher network charges - if a cost pass through application is submitted to, and approved by, the Australian Energy Regulator (AER).

This cost was unforeseen in Essential Energy's 2019-24 regulatory proposal due to the unprecedented scale of the damage caused during the 2019-20 bushfire season. This current cost estimate includes approximately \$57 million in costs associated with asset inspection, repair and rebuild of the network, approximately \$54 million in vegetation management and disposal, and approximately \$33 million in Service Target Performance Incentive Scheme (STPIS)¹ penalties.

There are several options for cost recovery. The NSW Government announced a fund to rebuild communities affected by the bushfires and Essential Energy has commenced discussions with the NSW Government about accessing these funds to cover the additional costs of the 2019-20 bushfires on the business.

Essential Energy has also begun discussions with the AER around a cost pass-through for the bushfires. If approved by the AER, the additional costs would be recovered from Essential Energy's customers in the form of higher network charges in future years. The AER advised they have not had an application for the impact of bushfires on a network before.

Essential Energy's intention is to exhaust all avenues for bushfire cost recovery before a cost pass-through application is submitted. Essential Energy is reluctant to pass through price rises to its customers, given that many have already been impacted by drought and/or bushfires.

Discussions have also been held with the AER on the potential suspension of the STPIS scheme given the circumstances.

¹ The STPIS is an incentive scheme administered by the AER that provides financial rewards and penalties to network service providers depending on performance against network reliability and telephone answering targets

5. Preparation and planning for future bushfire threats and risks

Whilst no electricity network can be 100 per cent fire-proof, network safety and reliability are key priorities for the business. Essential Energy considers it important to highlight some operational considerations, including planning and design of the network, to potentially make the network safer for events such as bushfires. Essential Energy, as part of its business as usual bushfire preparedness processes, continually evaluates bushfire risk mitigation strategies. The following considerations provide examples of this:

> Investment in network maintenance and renewal

Essential Energy continues to invest in both maintenance and capital replacement of infrastructure at significant levels. This risk based investment is overseen by Economic and Safety Regulators and, balanced with community expectations for levels of service, affordability and safety. Essential Energy is putting significant effort into understanding and managing risks such as bushfires, to better target the ongoing repair and renewal investment.

> Research and learnings

The level of research into bushfire risk in Australia is significant. Essential Energy recognises the opportunity this provides to better understand and manage bushfire risk. Essential Energy continues to foster working relationships with organisations such as the Bushfire & Natural Hazards Cooperative Research Centre, NSW RFS, universities, technology innovation companies, and the Utility Arborist Association of Australasia. We also keep in regular contact with other power companies nationally for shared learning opportunities. Inquiries such as this one are also used as a source of learning.

> Proactive de-energisation

Currently, Essential Energy does not proactively de-energise its power lines unless otherwise directed, such as by the RFS if it is the emergency controller. However, in preparation for a total fire ban day, all feeders in the total fire ban area have their auto-reclose functionality disabled as explained in Section 3.8 - *Reclosers*. This results in de-energisation only after detection of a fault.

Proactive de-energisation is an area Essential Energy is currently assessing to mitigate the risk of network initiated fires however it is a complex issue with significant stakeholder engagement required. Essential Energy needs to balance the risk reduction resulting from de-energisation of the power line against the introduced impacts from loss of supply to customers. The impacts from loss of supply include impacting life support customers, impacting customers that use electric water pumps, and potential heat illness from elevated temperatures when customers cannot use their air-conditioning.

To determine the actual impact of de-energising a feeder, Essential Energy would need to engage with stakeholders such as residential and commercial customers and the RFS and local government, to validate assumptions around our risk assessment.

> Options analysis for different types of power poles

Section 3.6 – Materials provides an overview of Essential Energy's consideration of fire-resistant pole options, and how an options assessment must carefully balance the costs and benefits, so the long terms interests of customers are met. This means, in areas of high bushfire risk, poles that provide fire resistant capability may be deployed.

> Underground versus overhead networks

As discussed in *Section 3.7 – Undergrounding and Insulated Conductors*, underground networks can reduce bushfire risk but are also significantly more expensive than overhead networks. Essential Energy does encourage consumers' mains connections in rural areas be located in underground networks. In bushfire prone areas Essential Energy requires customers to connect with underground lines.

> Standalone Power Systems (SAPS)

There are significant benefits to removing network infrastructure from higher risk areas in the form of reduction in bushfire risk and enhanced network resilience. By removing network infrastructure from bushfire prone areas

there is a reduced chance of a network-initiated fire. Providing customers with SAPS in those areas means that even if a fire event does occur it is likely that fewer customers will be left without power, less network repairs will be required and the cost of responding to the natural disaster will be lower. See *Section 7 - Appropriate action to adapt to future bushfire risks* for a further discussion on this opportunity.

> **Embedded Generation and Battery Storage Systems**

The growth in embedded generation and battery storage technologies provide an opportunity into the future to reduce the impact of loss of grid supply to the community because of powerline damage caused by bushfires or in the case where Essential Energy needs to proactively isolate grid supply for bushfire safety.

6. Land use planning and management and building standards

As discussed in section 3.4 - *Operational work following bushfires*, Essential Energy is identifying, removing and disposing of bushfire damaged hazard trees. This work will take some time and is expected to cost in the order of \$54 million. It is also incredibly important to ensuring the safety of the public and our employees.

Access to property, including state and national parks and railway easements is beginning to present some challenges for post bushfire vegetation and hazard tree management. A review of long-standing arrangements and regulations is required to ensure that the risk of trees coming into contact with the network is minimised.

Essential Energy would like to raise a potential amendment to the Electricity Supply Act 1995 (NSW) for consideration. This change relates to network encroachments, where structures or other things are built in proximity to the electricity network and may pose a safety, reliability or other risk (including bushfire risk). Under the current drafting of section 49 of the Electricity Supply Act 1995 (NSW) a network operator can require a customer to alter the structure or thing and can recover the cost of the removal or modification of the structure or thing. However, in many cases it is more efficient and much more practical to move the existing network around the encroachment so that it no longer presents an issue. For example, it is easier to move a few electricity poles rather than demolishing an entire structure. There is currently no mechanism under the Electricity Supply Act 1995 (NSW) to recover the costs of modifying the network in this manner to remedy an issue with encroachment on the network.

Our objective is to be able to consider flexible solutions, including the alternative of requiring relocation of network assets around the structure rather than being limited to removing or relocating the structure itself. This is often the most practical and efficient solution. The current drafting of section 49 2(a) only refers to a network operator being able to require the removal or modification of the structure.

7. Appropriate action to adapt to future bushfire risks

In response to the South Coast bushfire event, Essential Energy has provided SAPS to 11 sites (including a large telecommunications tower with four customers) to restore supply. Initially these SAPS will be provided on a temporary basis. Feedback so far from customers shows that they are very happy with these arrangements and are willing to accept a change to their power supply via a SAPS on a longer-term basis. Over the course of the longer-term work to rebuild and potentially redesign our network in these areas, we may wish to provide some of the impacted customers with SAPS on a more permanent basis. There may be additional opportunities for SAPS as properties that have been destroyed by bushfires are rebuilt and customers seek reconnection.

SAPS are an increasingly viable solution to permanently supply power to some bushfire impacted communities. This would have dual benefits. First, the cost to supply these customers will fall, leading to a reduction in network charges for the entire customer base. The cost of rebuilding the lines to reconnect these customers to the grid, as well as ongoing maintenance, vegetation management and costs to restore power after a fault on the network are likely to be considerably higher than a SAPS solution.

Second, there are significant benefits from removing network infrastructure from higher risk areas in the form of reduction in bushfire risk and enhanced network resilience. By removing network infrastructure from bushfire prone areas there is a reduced chance that fires will be started in the first place. Off-gridding customers in those areas means that even if a fire event does occur it is likely that fewer customers will be left without power, less network repairs will be required and the cost of responding to the natural disaster will be lower.

The recent experience in the deployment of SAPS in response to bushfires, has highlighted some of the regulatory barriers to enhancing the resilience of electricity networks in remote and regional areas. There is an expectation for Essential Energy to be able to deploy appropriate solutions quickly, and at scale, during its disaster response. The regulatory framework that would allow distribution networks to transition customers to off-grid supply via a SAPS is currently being designed by the Australian Energy Market Commission (AEMC). The work conducted so far has not considered the issue of network resilience in any detail. Essential Energy believes that regulated networks should be permitted to take customers off-grid using systems such as SAPS in order to realise the benefits mentioned above and that there should be:

- > Flexibility in the regulatory arrangements governing SAPS provision to account for the wide variety of circumstances where a SAPS may be a viable alternative to traditional poles and wires.
- > Customer-focused rules that put customer experience and preferences at the centre of service provision.
- > Cost-reflective price signals so that SAPS are effectively utilised and costs are minimised.
- > A pragmatic approach that recognises the realities of SAPS provision in remote areas or parts of the network where access is difficult due to vegetation or terrain.

Essential Energy considers that the regulatory arrangements proposed by the AEMC will not lead to the best customer outcomes for regional and rural customers and are likely to slow the deployment of SAPS in areas of NSW where they could be most beneficial.

In advance of the changes to the national framework to include SAPS, the NSW government needs to ensure that the right jurisdictional arrangements are in place so that SAPS can be deployed as soon as changes to the National Electricity Law are passed. This includes changes to the NSW Electricity Supply Act that are currently under consideration by the Department of Planning, Industry and Environment. The NSW government framework should be agnostic to any future service delivery model and include:

- > extension of consumer protections to SAPS customers, regardless of whether a retailer is involved;
- > price protections for SAPS customers through a mechanism not related to retailers
- > jurisdictional reliability standards that are appropriate for SAPS customers;
- > ability for distributors to recover the efficient costs of SAPS provision (regardless of whether the SAPS is owned by the network or provided by a third party); and
- > appropriate safety and technical standards.

In addition, the current work by the AEMC has been requested by the COAG Energy Council's Senior Committee of Officials (SCO) Stand-alone and Embedded Networks Working Group on embedded networks and SAPS. This forum may provide an opportunity for NSW to advocate for appropriate changes to the package of law and rule changes to address any NSW-specific issues.

8. Emergency responses to bushfires, including overall human and capital resourcing.

Whilst Essential Energy is not an emergency responder, we are a key component of the emergency response including supply isolation and power restoration. Essential Energy crews do not go into an emergency area unless full safe clearance is provided for Essential Energy personnel by the appropriate emergency authority. Essential Energy works closely with the RFS to gain safe access to assess damage to our network in bushfire-affected areas.

The priority for Essential Energy is safe and steady power restoration and that the appropriate time is taken to fully assess conditions (particularly hazardous trees) and undertake any necessary work to minimise safety risk for members of the public and our people. We give priority to critical services in bushfire-affected areas, including hospitals, water pumping stations, nursing homes and petrol stations.

Essential Energy collaborates with the RFS and other authorities to provide alternative generation to emergency centres and critical infrastructure during a bushfire emergency. Work is also undertaken with the RMS to clear damaged network assets from major roads to ensure they can safely reopen for public use.

9. Government co-ordination and collaboration

As mentioned above, Essential Energy and EUSFAC co-ordinated their activities at state level. The EUSFAC co-ordinates Energy and Utility Services Functional Area support and resources for emergency management with agreement and participation from supporting organisations.

The collaborative approach with RFS, local councils, support agencies and community-based organisations was critical to supporting local communities. The embedding of staff in the RFS State Operation Command (SOC) and Emergency Operation Centres (EOCs) was essential to a timely and safe response to this season's bushfires.

The SOC were necessary for co-ordination with other NSW emergency services. Having an embedded staff member at SOC gave Essential Energy direct access to up to date information about developing situations, and the outlook for the days ahead. This in turn assisted Essential Energy to make considered, strategic decisions. The embedded staff member also served as a valuable facilitator and conduit across other government agencies who were also embedded in the SOC, for example the NSW Police Service, RMS and the SES.

For future co-ordination and collaboration in recovery, it is recommended that the decision making process as to who can give authority to enter affected areas needs to be clear and this may mean authority beyond the level of the RFS. Whilst the collaborative relationship with EUSFAC enabled Essential Energy to be a part of the State Operation Centre, there was no formal structure or process for this. It would be useful to consider a more formal process for the future to enable co-ordination of the various entities involved in the response.

Whilst there also may be a role for the Australian Defence Forces (ADF) to assist, for example, in vegetation clearance to get access to lines, rebuilding the network is a process that requires specific skills and propriety knowledge that is best served by Essential Energy.

As discussed in *Section 3.3 Supporting customers impacted by bushfires as they recover and reconnect to the network*, Essential Energy provided generators to impacted customers. this is another area of interest in co-ordination and collaboration.

There is merit in DNSPs, whose job it is to provide electricity and distribution, and who have the knowledge, capacity, data, expertise and understanding of restoration time, to undertake this role but with consideration by Government of the cost of undertaking this work. A more formal process to co-ordinate the various entities involved in the response – clarity on the roles and responsibilities of different agencies in these areas would be helpful.

If there are governmental and community expectations that the business should undertake these types of activities in emergency situations, then changes to the regulatory frameworks that Essential Energy operates in is recommended so that regulatory bodies can include them in future regulatory determinations for Essential Energy.

10. Safety of first responders.

Essential Energy has not provided a response on this topic.

11. Public communication and advice systems and strategies

UHF, mobiles, radio communications and satellite phones allowed system operations and depots to remain in contact with field crews. Radio communications were most reliable in emergency conditions. Satellite phones were less reliable due to smoke interference. It is important that a variety of communication methods are available in emergencies.

Essential Energy supplies power to a number of telecommunication towers used by mobile phone providers such as Telstra and Optus, and critical services involved in the bushfire recovery; including the RFS, RMS and NSW Police. Bushfires meant that power supplies were cut to some of these sites, which are often located in remote areas with steep and difficult terrain, meaning restoration times are often lengthy. In order to ensure that this restoration was prioritised, as discussed in *Section 7 - Appropriate action to adapt to future bushfire risks*, Essential Energy arranged for the provision of SAPS to support these critical pieces of infrastructure. The ability for the business to deploy SAPS in emergencies, or preferably in advance, based on the risk of the location (as discussed in *Section 5 - Preparation and planning for future bushfire threats and risks*) is a strategy that Essential Energy would support. This is evidenced by recent submissions to regulatory bodies.²

² https://www.aemc.gov.au/sites/default/files/documents/review_submission_emo0038_-_essential_energy_20200213.pdf

NSW Independent Bushfire Inquiry – Terms of Reference

Published 10th February, 2020³

The Inquiry is to consider, and report to the Premier on, the following matters.

1. The causes of, and factors contributing to, the frequency, intensity, timing and location of, bushfires in NSW in the 2019-20 bushfire season, including consideration of any role of weather, drought, climate change, fuel loads and human activity.
2. The preparation and planning by agencies, government, other entities and the community for bushfires in NSW, including current laws, practices and strategies, and building standards and their application and effect.
3. Responses to bushfires, particularly measures to control the spread of the fires and to protect life, property and the environment, including:
 - immediate management, including the issuing of public warnings
 - resourcing, coordination and deployment
 - equipment and communication systems.
4. Any other matters that the inquiry deems appropriate in relation to bushfires.

And to make recommendations arising from the Inquiry as considered appropriate, including on:
5. Preparation and planning for future bushfire threats and risks.
6. Land use planning and management and building standards, including appropriate clearing and other hazard reduction, zoning, and any appropriate use of indigenous practices.
7. Appropriate action to adapt to future bushfire risks to communities and ecosystems.
8. Emergency responses to bushfires, including overall human and capital resourcing.
9. Coordination and collaboration by the NSW Government with the Australian Government, other state and territory governments and local governments.
10. Safety of first responders.
11. Public communication and advice systems and strategies.

³ <https://www.nsw.gov.au/improving-nsw/projects-and-initiatives/make-a-submission-to-the-bushfire-inquiry/nsw-independent-bushfire-inquiry-terms-of-reference/>