SA Power Networks Protocol for vegetation management near powerlines 2019–2021

A process for consultation between SA Power Networks and SA Councils, landholders and the community

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Endorsed and developed in consultation with the LGA





SA Power Networks Protocol for vegetation management near powerlines 2019–2021

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Vegetation and trees form a fundamental part of our urban and rural landscape and provide a wide range of aesthetic and environmental value and benefits on both private and public land. However, there are risks associated with trees in relation to their proximity to powerlines. Consequently, SA Power Networks is required to undertake vegetation clearance to ensure community safety and the delivery of a reliable electricity supply to customers.

The management of vegetation is a significant operational cost for SA Power Networks and for electricity consumers who fund the costs of the program through the network charges component of their electricity bill.

Managing vegetation under powerlines is also a complex community issue, particularly as community expectations have changed over time, from a risk-based focus, particularly on minimising fire starts and maintaining reliability, to one that seeks to balance managing those risks with ensuring the health and appearance of trees in our urban and regional communities.

Over the past few years, SA Power Networks has moved towards a longer-term vegetation management approach that is more sustainable and customised to different regions and environments. This has involved working with our key stakeholders to develop partnerships and improve how vegetation near powerlines is managed.

A Working Group was established in late 2013 with the Local Government Association (LGA) and several representative councils to develop a long-term strategy to improve vegetation management and an Independent Arborist Reference Group was established in January 2014 to provide ongoing advice and input into key strategic initiatives. The development of a protocol outlining our approach for vegetation management and opportunities for partnerships with Councils was one of the key initiatives undertaken by these two groups. SA Power Networks will continue to work with these consultative groups going forward to deliver improved outcomes for vegetation management.

The key goals of improved vegetation management are:

- Maintaining community safety in urban and regional settings.
- Minimising the risk of fire starts in bushfire areas.
- Ensuring achievement of regulated standards for reliability of electricity supply.
- Reducing the visual impact of tree trimming, particularly in high amenity areas.
- Encouraging appropriate species selection under or near powerlines.
- Improving co-operation amongst the various organisations whose activities influence the health and visual appearance of trees.
- Reducing costs in the longer term for the community in managing trees around what is essential community infrastructure.
- Community education and awareness of our legislative requirements.

This protocol outlines the current approach for vegetation management that applies to the bushfire and non-bushfire risk areas. It outlines the baseline programs for vegetation management for which funding is currently provided. If an individual Council requires specific approaches that are above the baseline SA Power Networks programs, the Council will need to contribute funding for their specific programs/approaches. Under current legislation, Councils also have the option to take over trimming in their Council area (with the associated liability).

The protocol was reviewed during 2018 and this protocol reflects feedback from our consultative groups, the Arborist Reference Group and LGA Working Group, and other key stakeholders on what's working and opportunities for improvement and/or greater collaboration. The review included a survey and respondents on the whole felt our performance in relation to vegetation management was improving and there was an opportunity to continue to work with Councils to deliver improved outcomes for the community.

The protocol is intended to provide a basis for working with key stakeholders to improve outcomes and develop a more sustainable approach that balances the need to manage risk with retaining the value and amenity of trees.

Glossary

Aerial Bundled Cables (ABC)

The bundling together of a number of individual conductors for use in an overhead scenario. ABC can be used to reduce vegetation clearance requirements.

Buffer Zone

The additional area around a clearance zone in bushfire risk areas. It defines the maximum extent to which the vegetation may be trimmed.

Bushfire risk areas

An area where a fire could start and readily escape to an unrestricted area of flammable material causing Moderate Consequences. The relevant parts of the state are shown in the maps in Schedule 4 of the *Electricity (Principles of Vegetation Clearance) Regulations 2011*.

Clearance Zone

The minimum safe distance between vegetation and powerlines. The space is shown in Schedule 1 of the Regulations to the Act.

Conductor

Cable or wire used to conduct electricity – it may be bare, partially insulated or fully insulated. In SA Power Networks, the term 'conductor' usually applies to an overhead wire only. Underground conductors are termed 'Cables'.

Cyclic program

The programmed cutting repeated at no longer than 3-year intervals, whereby all vegetation identified for clearance is to be cut back far enough from the clearance zone to ensure that no vegetation grows or is likely to bend into that zone before the next programmed cycle cutting.

Emergency cutting

Vegetation clearance work undertaken without notice or programming caused by unforeseen circumstances such as damage to trees or powerlines by storms, or falling limbs resulting from heat stress.

Fire Danger Season (FDS)

CFS declared start and end dates of the Fire Danger Season for each of the CFS Fire Ban districts.

High voltage (HV)

Voltage of 1,000 volts (1 kV) or more.

Landholder

The property owner or occupier of land subject to clearance requirements.

Low voltage (LV)

Voltage less than 1,000 volts.

Native vegetation

Any naturally occurring plant species which are indigenous to South Australia, including trees, shrubs and grasses.

Naturally occurring vegetation

Any vegetation that has not been planted or nurtured by any person at any time. Although this definition is intended to cover native vegetation of a locality it also includes anything self-grown, such as pine and ash, as well as suckers from plants such as poplars and elm.

Non-bushfire risk areas

Areas defined as non-bushfire risk areas in the *Electricity* (*Principles of Vegetation Clearance*) *Regulations 1996*, Schedule 3.

OTR

The Government of South Australia Office of the Technical Regulator – government agency responsible for administering the *Electricity Act 1996* and its Regulations, the *Electricity (Principles of Vegetation Clearance) Regulations* 2010.

Prescribed area

Each non- bushfire risk area of the greater metropolitan area as shown in the maps in Schedule 3 of the Regulations.

Pruning

The practice of removing parts of a tree, such as branches or buds. In relation to powerlines pruning refers to the removal of parts of a tree to maintain legislated clearances.

Pruning cycle

The frequency of the pruning cycle – currently annual in bushfire risk areas and three year cyclic in non-bushfire risk areas.

Regrowth Zone

The area around a clearance zone in a non-bushfire risk area. It defines the indicative extent to which vegetation can be trimmed.

Sapling

For the purpose of vegetation management near powerlines, a tree sapling is defined as:

- An immature or young tree with a slender trunk.
- Typically, less than 4 years old.
- A stem diameter up to 80mm.
- A height range of up to 2000mm.
- Does generally not produce fruit or flowers in this age range.
- Is likely to or will grow into the Clearance Zone.

Scoping

The inspection of feeders for the purpose of designing annual, cyclic and pre-summer cutting programs.

Span

The distance between Stobie poles measured in metres (m).

Vegetation clearance

The clearance of vegetation under powerlines to meet legislative requirements.

Overview

Why do we prune vegetation?

The key drivers for managing vegetation near powerlines are to:

- mitigate bushfire risk
- maintain reliability of electricity supply
- ensure public safety
- ensure legislative compliance.

Trees are pruned to meet the clearance zones defined under the legislation. This is determined by whether the vegetation is in a bushfire risk area or a non-bushfire risk area, the voltage of the conductor, span length, whether the line is insulated or bare, and if the line is on public or private land. Clearance zones also consider the movement of the trees and the growth and regrowth rates of the trees during the cyclic interval.

When do we prune vegetation?

- In bushfire risk areas, we currently undertake a one to three year vegetation clearance program based on risk and an annual pre-summer patrol in high risk areas.
- In non-bushfire risk areas, we currently undertake a three-year cyclic program of vegetation clearance.
- In the metropolitan area, 33kV/66kV lines are patrolled annually.

Who prunes the vegetation?

Our vegetation management program is undertaken by our vegetation contractors who operate to specific legislated and contracted requirements. Our current contractor for vegetation clearance is Active Tree Services.

How do we prune?

A detailed operational plan is developed to outline the annual clearance program in bushfire risk areas, the threeyear cycle in metropolitan Adelaide (prescribed area) and non-bushfire risk areas, and the metro 33/66kV program.

The contractor inspects the feeders for the purpose of scoping annual, cyclic and pre-summer cutting programs. The amount of vegetation that needs to be trimmed is determined by the requirements set by legislation.



Introduction

Vegetation and trees form a key part of our urban and rural landscape and provide a wide range of aesthetic and environmental benefits and values.

SA Power Networks delivers electricity to approximately 860,000 residential and business customers across South Australia and our network includes more than 71,000km of overhead powerlines. Managing trees and vegetation near these overhead powerlines is critical to mitigating bushfire risks and providing a reliable and safe supply of electricity to our regional and metropolitan customers.

Our vegetation management practices have, at times, resulted in complaints from Councils and the community in relation to the visual impact of pruning activities when the clearance distances are applied as defined under the legislation.

This protocol outlines the practices SA Power Networks will employ to manage vegetation near powerlines to help us improve outcomes to address community concerns while meeting our legislated obligation to minimise risk.

1.1 Purpose

The purpose of the protocol is to:

- Outline SA Power Networks' approach and the practices to be employed to manage vegetation near powerlines.
- Provide a shared vision for vegetation management near powerlines in meeting our legislation.
- Provide guidance on how vegetation around powerlines should be managed.
- Outline responsibilities of other stakeholders in relation to managing vegetation near powerlines.

The protocol is intended to act as a high level document outlining our commitment to improving how we manage vegetation and working more collaboratively with key stakeholders. The protocol will be supported by more detailed Fact Sheets and Technical Reports as required. SA Power Networks has also developed a Discussion Paper that outlines our long-term plan for vegetation management.

SA Power Networks is keen to work with Councils to develop programs more tailored to suit regional differences and needs, including location and species-specific pruning programs and detailed work plans for individual Council areas.

The key objectives of the protocol are to:

- Outline our current responsibilities in relation to vegetation management near powerlines.
- Work with Councils and key stakeholders to improve our approach to vegetation management.
- Improve community understanding of our vegetation clearance obligations.
- Outline the alternatives to pruning vegetation near powerlines.
- Balance our legislative requirements with community expectations.

1.2 Vision and long-term objective Vision

Vegetation and trees form a fundamental part of our urban and rural landscape and provide a wide range of aesthetic and environmental benefits and values on both private and public land.

SA Power Networks' long-term vision in relation to vegetation management is to reduce the level of vegetation clearance over time and implement strategies that recognise regional differences. As an organisation, we want to continue to work with key stakeholders to develop partnerships and improve how we manage vegetation near powerlines.

Managing vegetation under powerlines is complex and it will take time to balance the legislative requirements with community expectations. Community education and awareness, undertaking trials with Council and ongoing research and development will be fundamental to achieving this balance.

While vegetation and trees have a wide range of values in the landscape, there are risks associated with trees in relation to their proximity to powerlines. SA Power Networks is required to undertake vegetation clearance to ensure community safety and ensure the delivery of a reliable electricity supply to customers.

Directions for Vegetation Management – SA Power Networks long-term plan for managing trees near powerlines

SA Power Networks has developed a long-term plan for vegetation management that aims to create a more sustainable environment and reduce the need for tree trimming over the next 10-15 years.

The plan identifies a range of initiatives that it wishes to develop in partnership with Local Government, the community, private landholders and other organisations.

1.3 Key challenges

SA Power Networks has a number of challenges that impact on our approach to managing vegetation near powerlines.

Financial considerations

SA Power Networks funding is approved by the Australian Energy Regulator (AER) in five-year cycles, with the most recent determination being for July 2015 to July 2020. Funding provided is based on the efficient costs to meet regulatory obligations, including vegetation clearance.

The management of vegetation is a significant operational cost for SA Power Networks and for electricity consumers who fund the costs of the program through the network charges component of their electricity bill. SA Power Networks currently undertakes a program of vegetation clearance in bushfire and non-bushfire risk areas and this program is funded out of revenue approved by the AER to comply with the legislative requirements.

SA Power Networks is keen to work with Councils and key stakeholders to implement initiatives that reduce the costs over the long term and deliver improved outcomes.

Agreements with stakeholders, including responsibilities/ allocation of costs and opportunities for partnership are discussed in Section 4.

Tree removal

The current South Australian legislation puts significant barriers on clearing vegetation beyond the buffer zone and we are currently the only State in Australia with no provisions for tree removal under the legislation. As a result, SA Power Networks relies on developing partnerships to gain agreement with Councils and private landowners to remove trees provided the removal is not contrary to any other legislation (native vegetation).

Tree removal and replacement programs are critical to developing a sustainable least cost vegetation management plan that reduces the need for tree trimming over time and removing unsightly stumps of trees left after some clearances. The removal of 'inappropriate' trees in consultation with local government and the community is one alternative to the current ongoing clearing of inappropriate trees to achieve our legislated clearance obligations. There is also growing support from Councils and the community that this approach is preferable to excessive and ongoing cutting.

Tree removal and replacement is discussed in more detail in Section 6.1.

Visual amenity

SA Power Networks needs to balance legislative and regulatory drivers with often competing stakeholder interests. These include safety, risk mitigation, cost implications, reliability of supply, environmental considerations and community expectations.

Introduction

Visual amenity of vegetation near powerlines is important to local government and landowners in both metropolitan and rural areas and SA Power Networks recognises the tensions between community expectations and ensuring full compliance with the clearance obligations.

SA Power Networks is working with key stakeholders to improve visual outcomes. Further information is provided in Section 5.4.

Inappropriate species selection and legacy planting

One of the major challenges of growing trees in the urban landscape is the competition for space with infrastructure such as service utilities, including overhead powerlines. Inappropriate trees planted beneath powerlines can create unnecessary, ongoing maintenance work.

Much of the clearance work is a result of a legacy of planting species under powerlines that grow to an inappropriate height at maturity, resulting in conflicts with powerlines. One option for reducing or avoiding the impacts of tree trimming is to ensure tree species planted under powerlines are appropriate for the location.

Road engineering and design needs to be mindful of these constraints and the limitations this places on species selection in urban areas.

Further information on planting limitations and powerline friendly species is provided in Section 3.3.

Urban Heat Island

Due to a changing climate many urban areas are experiencing longer, hotter and more frequent heatwaves which will have an impact on the health and wellbeing of the community. Trees in the urban area have a significant role to play in cooling urban areas and mitigating the effects of urban heat island.

To address this the State Government's *30 Year plan for Greater Adelaide 2017* includes a target of increasing green space in the metropolitan Adelaide by 20% by 2045. This includes planting street trees which may conflict with our infrastructure. Urban forests have proven to be one of the most effective methods for mitigating heat retention in urban areas. As a result, many Local Governments are undertaking urban heat island mapping and building mitigation strategies into their management plans.

The cooling of our urban areas provides positive benefits to SA Power Networks as one of our challenges is managing peak demand from air conditioning during the summer months and trees and their cooling effects may reduce demand.

We understand that the objective to increase canopy target is generally in conflict with species selection under powerlines, which limits trees to a 6m height in urban areas. One option is for Councils to consider redesigning roads and streetscapes to consider urban heat island effects going forward.

Urban infill

Urban infill and development is a growing issue for urban Councils with an estimated 85% of all new housing to be built in metropolitan Adelaide by 2045 to be within the established urban areas. As blocks are subdivided to accommodate medium or high density living, trees are often removed to facilitate this development, resulting in greater value being placed on the street tree for amenity, shade and environmental value. The reduction in trees also has an impact on urban heat island effects.

Access to property and customer notification

There are a range of reasons SA Power Networks may enter private property, with scoping, cutting and auditing for vegetation management being some of those reasons.

Under the legislation, SA Power Networks must provide at least 30 days written notice to land occupiers/Councils prior to vegetation clearance works commencing. The current approach has several limitations particularly in rural and regional areas, as we have no way of knowing who the owner/occupier is and therefore no way of efficiently or effectively notifying. SA Power Networks is investigating new and innovative ways to notify customers.

Biosecurity and the risk of weed spread is one of the concerns of rural landholders. SA Power Networks has work procedures in place relating to property access to prevent the spread of noxious weeds and manage bio-security concerns.

Further information on our customer notification requirements is provided in Section 3.2 and biosecurity is discussed in Section 7.1.

Community awareness

There are large parts of the community that have limited understanding or awareness of our legislative requirements for vegetation clearance near powerlines and the risks associated with vegetation near powerlines.

SA Power Networks has a key role to play in educating the community through a range of tools and approaches on why we manage trees, the risk associated and our requirements under the legislation.

Further information on community information and education is provide in Section 3.3.

Balancing interests

Local Councils are trying to balance different and often competing requirements in relation to infrastructure and services from a number of organisations, including SA Power Networks, DPTI and SA Water. Local Government is faced with the conflict and tension of managing risks against competing considerations and these all place limitations on tree planting in urban areas.

1.4 Key stakeholders

There are a number of organisations that undertake tree pruning and there are many influences on street trees, with powerlines being just one asset that impacts vegetation management. For example:

- Local Government street tree pruning and maintenance, road works and underground works (affects root systems).
- Department of Planning, Transport and Infrastructure (DPTI) road works, underground works and roadside clearance.
- SA Water and other utilities clearance around assets and infrastructure, and underground works.
- Department of Environment and Water/Native Vegetation Council (NVC)/Natural Resources Management Boards (DEW) – protected areas, native vegetation, roadside vegetation and woody weed management.
- Telstra, Optus, NBN data/network cables.

Clearly, a range of key stakeholders have an interest or role in managing vegetation near powerlines. SA Power Networks will work closely with these stakeholders and develop partnerships to improve how vegetation near powerlines is managed. SA Power Networks facilitated a Government Agency Workshop in September 2016 to discuss current issues associated with vegetation clearance and management, explore opportunities for partnerships or collaboration and build relationships to improve communication and outcomes. Similar workshops should be held on an annual or bi-annual basis to encourage open discussion on vegetation management and develop effective relationships with our stakeholders.

Local Government

Local Government is a key stakeholder in relation to vegetation management and SA Power Networks will work collaboratively to improve vegetation management outcomes.

Landholders

Private landholders/occupiers are responsible for the clearance of all vegetation they have planted or nurtured on their property around their private supply lines. This includes vegetation overhanging from a neighbouring property.

SA Power Networks is responsible for establishing and maintaining clearances around public supply lines and for clearing naturally-occurring, non-nurtured vegetation on private land.

Community and residents

The wider community and residents have an interest in vegetation management near powerlines for a number of reasons – including visual amenity, health and value of trees, conservation and community safety. Residents and landholders can get involved either through their relevant Council or direct liaison through SA Power Networks.

Customers

A customer is any person who has a supply of electricity available from the distribution network for consumption by that person, including the occupier of a place to which electricity is supplied or a person seeking an electricity supply. SA Power Networks currently supplies electricity to about 860,000 residential and business customers.

Government agencies

There are a number of agencies that have specific legislative responsibilities in relation to vegetation management. These include the Department of Environment and Water, Native Vegetation Council and Natural Resources Management Boards and their key interests include native vegetation, national parks and environmental requirements.

The Department of Planning, Transport and Infrastructure (DPTI) undertake vegetation clearance along the DPTI managed roads to maintain the required clearance envelope. There are opportunities to work with DPTI to identify problem or hazard trees that could be removed to provide benefit to both organisations and improve road safety and visual amenity.

The South Australian Country Fire Service (CFS) is the state government agency responsible for fire prevention and bushfire management and planning. The Metropolitan Fire Service (MFS) provides services to metropolitan Adelaide and several regional centres across the state.

In addition, there are a number of regulators that regulate the energy industry. The Essential Services Commission of South Australia (ESCoSA) regulates the energy industry in SA, including the licensing of electricity operations and establishment of performance targets. The Office of the Technical Regulator (OTR) administers the Electricity Act 1996 and its Regulations, the Electricity (Principles of Vegetation Clearance) Regulations 2010. The OTR is responsible for initiating any changes to the Act and Regulations. At the national level, the Australian Energy Regulator (AER) is the economic regulator for electricity distributors and determines funding levels based on regulatory periods.

Introduction

1.5 Engagement with stakeholders

The International Association for Public Participation (IAP2) has developed a Public Participation Spectrum to outline the possible types of engagement can be undertaken with stakeholders and customers as part of the public participation process. As the public progress through the spectrum there is an increase in the expectation of participation and types of engagement tools that can be implemented along the spectrum from inform to empower. A copy of the spectrum is provided as Appendix A.

Based on the IAP2 Spectrum for Public Participation, the proposed levels of engagement and participation for vegetation management near powerlines are outlined in the table below. The intent is to outline the way we propose to engage rather than the engagement program. Over time the level of engagement may shift, for example from consult to involve, to reflect a change in the intent or a maturing process. For each section of the protocol, the level of proposed engagement with stakeholders is identified. This will provide stakeholders with guidance on where there are opportunities to work in partnership with SA Power Networks to improve vegetation management and areas where we are just informing stakeholders of our vegetation clearance activities.

In 2016, we developed a Stakeholder Engagement Strategy which reflects our commitment to continue to work with our stakeholders, build on past engagement experiences and continue to embed effective stakeholder engagement practices across the business.

Based on our understanding of the key challenges facing SA Power Networks a number of topics were identified as priority areas for engagement over the 2016–2020 period. Vegetation management in terms of continuing to improve outcomes for the community as well as meeting legislated clearance requirements was one of the priority areas identified.

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
Stakeholder/ customer participation goal:	To provide stakeholders/ customers with information on our legislative requirements for vegetation clearance and our obligations	To obtain feedback from stakeholders/ customers on strategies and initiatives for vegetation management and on our clearance program	To work directly with key stakeholders to ensure issues and expectations are understood and considered in developing strategic vegetation management initiatives	To partner with key stakeholders during all stages of the process, including the development of alternatives and solutions for vegetation management	To place the final decision making in the hands of key stakeholders
Commitment to stakeholders/ customers:	We will aim to keep you informed	We will aim to keep you informed, listen and acknowledge concerns and provide feedback on how influenced decision or process	We will aim to work with you to ensure that your concerns and expectations are reflected in initiatives and provide feedback on how influenced decision or process	We will aim to seek direct advice in developing solutions and incorporate your input into decision or the process as far as practicable	We will implement what you decide
Example of opportunities or initiatives implemented in vegetation management:	 Vegetation management material – website, brochure, banner & poster Fact Sheets, and OTR Brochure 'Vegetation management' DVD Talking Power website Media Releases Animated DVD 	 Information and feedback sessions Regional and Council presentations Post clearance surveys 	 Local Government Forums Workshops on key topics eg. species selection, regulatory amendments Directions for Vegetation Management Discussion Paper Scoping and provision of scoping data Early and ongoing engagement with Councils 	 Joint partnerships in initiatives with local government and communities LGA Working Group Arborist Reference Group Developing different pruning regimes (amenity pruning) and strategies 	 Final decision- making Not proposed due to level of risk and liability ultimately carried by SA Power Networks

Table: IAP2 participation spectrum and how it may be applied for vegetation management near powerlines



INFORM

Background

Commitment to stakeholders

We will aim to keep you informed of our vegetation clearance obligations

SA Power Networks is required to undertake vegetation clearance to ensure community safety and deliver a reliable electricity supply to customers.

2.1 Legislative requirements

Section 55(1) of the *Electricity Act 1996* imposes a duty on SA Power Networks to take reasonable steps to:

- keep vegetation of all kinds clear of public powerlines under its control; and
- keep naturally occurring vegetation clear of all private powerlines under its control in accordance with the principles of vegetation clearance.

These principles are set out in the *Electricity (Principles of Vegetation Clearance) Regulations* which provide a mandatory and prescriptive program and regime for the clearance of vegetation in both bushfire risk and non-bushfire risk areas. These include:

- a cyclic cutting program of not more than three years; and
- defined 'clearance zones', with specific references to clearance distances for use in making judgements on the extent and nature of cutting required.

SA Power Networks has a duty of care to take 'reasonable steps' to clear vegetation from its powerlines in accordance with the legislation. This includes considering factors such as the characteristics of the powerlines, surrounding vegetation and industry best practice¹.

While 'reasonable steps' could be assessed objectively, taking into account, for example, the characteristics of the powerlines, surrounding vegetation and industry best practice, in terms of our vegetation clearance program it refers to the following principles:

- Development of a clear plan and schedule for inspections.
- Establishing clear compliance standards.
- Establishing 'good electrical industry practice'.
- Establishing and incorporating data capture mechanisms into reporting processes.
- Ensuring all training requirements are met (internally and externally).

¹ Industry best practice refers to relevant interstate standards and operational experience, as well as recent findings or learning's in relation to powerline clearance, such as outcomes from a Royal Commission.

- Establishing appropriate KPIs and contractual arrangements.
- Developing appropriate measurement techniques for communication of program performance.
- Developing and recording continuous improvement initiatives.

To achieve this, SA Power Networks has a set of criteria underpinning its legislative obligations under the *Electricity Act 1996*, including:

- Establishing clear compliance standards.
- Development of a clear plan and schedule for powerline inspections.
- Establishing and incorporating data capture mechanisms into reporting processes.
- Establishing 'good electrical industry practice'
- Ensuring all training requirements are met (internally and externally).
- Establishing appropriate KPIs and contractual arrangements.
- Developing appropriate measurement techniques for communication of program performance.
- Developing and recording continuous improvement initiatives.

The extent of the clearance zones varies according to whether the vegetation is in a bushfire risk area or a nonbushfire risk area, the voltage of the conductor, swing and sag of the conductor, and whether the line is insulated or bare. Clearance zones take into account movement of the trees and the growth and regrowth rates of the trees during the cyclic cutting interval.

The provisions of the Electricity Act and the Electricity (Principles of Vegetation Clearance) Regulations place a significant and demanding obligation on SA Power Networks to ensure that vegetation is kept clear of our State's electricity infrastructure in order to protect life, property and the electricity network. The specific clearance requirements were legislated following Ash Wednesday to address risks in both bushfire and non-bushfire risk areas. Failure to adhere to the requirements not only puts the community and our infrastructure at risk, it also has implications in terms of associated liabilities.

SA Power Networks understands its risk and key liability risks in regard to vegetation management include bushfire and failure to supply (reliability). To manage these risks, a vegetation clearance program is undertaken in accordance with legislated clearance requirements as part of the bushfire risk mitigation measures and procedures are in place to minimise interruptions to supply.

Figure 1: Risk-based approach for vegetation clearance around LV lines

Existing legislation (Non-bushfire risk areas)

Clearance zone – Vegetation must be clear from inside of legislated Clearance Zones



Low Voltage (LV)

LV and High Voltage (HV)

Proposed 'risk-based' legislation (Non-bushfire risk areas)

Trees allowed to 'grow through' Low Voltage powerlines based on a risk assessment

- Key considerations: 1. Availability of emergency services
- 2. Population density (>10,000) 3. Built-up areas
- 4. Non-bushfire risk area

INFORM

NVOLVE



Low Voltage (LV)

LV and High Voltage (HV)

10 year review of Regulations

The current Regulations expire on 1 September 2021. SA Power Networks is exploring a number of amendments to those regulations that would deliver improved outcomes to the community, improve or maintain safety outcomes and reduce costs.

In identifying possible amendments, we need to ensure the Regulations:

- Enable cost efficient delivery of the program.
- Continue to deliver public safety outcomes.
- Reflect 'actual' risk vs one size fits all.
- Meet community expectations for improved visual outcomes.
- Integrate with other legislation to reduce conflicts.
- Reduce 'perceived' unnecessary cutting.

The amendments relate to tree removals, customer notifications, visual amenity, bushfire/non-bushfire boundaries and mapping requirements, risk-based approach and the species list. A Discussion Paper was developed in June 2018 and a series of workshops were held in October 2018 to seek stakeholder input on our proposed amendments.

Risk-based approach

In 2010, the legislation was amended for metropolitan Adelaide recognising the lower level of risks associated with vegetation around low voltage (LV) powerlines. The legislation allows vegetation to grow through LV powerlines improving visual amenity.

In 2015 SA Power Networks sought an amendment to adopt this risk-based approach in a number of major regional centres where risk factors (eg. bushfire risk, availability of emergency services, population density and built up areas) determine that the level of risk allows reduced clearance requirements. Based on this criteria, this approach will be applied in the Cities of Mt Gambier, Port Pirie, Port Lincoln, Port Augusta, Whyalla, Victor Harbor and Murray Bridge, and the towns of Gawler, Goolwa and Mt Barker. Figure 1 shows the risk-based approach. SA Power Networks understands that the risk-based approach requires considerable community education and awareness and will undertake a range of community engagement activities prior to implementation, in consultation with the affected Councils.

As part of the 10-year review of the Regulations, SA Power Networks will investigate and develop criteria for other areas suitable for the adoption of the 'risk based' approach, for example, the Riverland towns.

Hazard tree legislation

In October 2017, an amendment to the *Electricity Act 1996* was gazetted in relation to our powers in relation to vegetation clearance in respect to hazard trees.

Section 55AA—Powers of electricity entity in relation to vegetation clearance

- (1) An electricity entity with a duty under this Part to keep vegetation clear of powerlines may clear vegetation that is within the bushfire risk area if the entity is satisfied that the vegetation is *likely to fall onto a public powerline* or private powerline under the entity's control so as to damage the powerline, or give rise to a risk of fire, electric shock, or interruption of electricity supply, despite the entity not having a duty under this Part to carry out such work (but the entity incurs no liability for failure to clear such vegetation).
- (2) An electricity entity must, before clearing vegetation under subsection (1), obtain a report on the extent of clearance necessary to prevent the vegetation from falling onto a powerline from a person who holds qualifications prescribed by the regulations.

Background

The new powers given to SA Power Networks resulted in some concerns being raised by Council and the community. The development of training for both internal staff and our contractors scopers to improve the identification of hazard trees should provide stakeholders with some degree of assurance that appropriate processes are in place.

2.2 Australian Standard AS4373 – Pruning of Amenity Trees

There is some Council interest in the inclusion of Australian Standard AS4373 (Pruning of Amenity Trees) in the Regulations. The Standard however is not easy to apply and is vulnerable to diverse interpretations. Application of this Standard to trimming around powerlines would raise serious doubts in terms of determining the limits of SA Power Networks' legal liability in respect of a fatality, injury or property damage resulting from a fire caused by the interaction of vegetation with electricity infrastructure.

The current cutting approach under the Act and Regulations with respect to liability is based on compliance with the Principles of Vegetation Clearance. Compliance is based on meeting specifically defined clearance distances and these are well understood by all involved in vegetation scoping and cutting and compliance with them is clearly demonstrable. This provides a large element of certainty in an environment where a bushfire, for example, could be started by any number of factors, and places reasonable and defined limits on SA Power Networks' liability.

From a vegetation clearance perspective, AS4373 pruning standards limit the flexibility needed for better management of some species and trees with a long history of clearance pruning.

The stated intention of AS4373-2007 Pruning of amenity trees is to –

"... encourage pruning practices and procedures that reduce the risk of hazard development, branch failure, pathogen infection and premature tree death."

Line Clearance (Class L) pruning is specifically included in the scope of AS4373 and is listed as a pruning class–

7.3.6 Line clearance (L)

Line clearance is pruning to maintain clearances around overhead services and is an application of reduction pruning (see Clause 7.3.2).

NOTES:

- 1 *References should be made to relevant state legislation for line clearance.*
- 2 Formative pruning should be used to establish a suitable framework (see Clause 7.2.5).
- 3 The amount to be removed should consider the character of the species, growth rate and response to pruning. The potential impact of the pruning on the health, structure and amenity of the tree should be considered.

One of the challenges utility arborists face is negotiating the

practicalities of utility vegetation management in line with the general requirements in AS4373 for reduction pruning. Developing more specific guidance for utility works in the standard would help to establish consistent best practice nationally, credibly communicate with stakeholders and alleviate some of the subjectivity which may arise through different interpretations.

Victoria is the only state with reference to AS4373 in its legislation, *Victorian Electricity Safety (Electric Lines Clearance Regulations) 2015*, which states: "...A responsible person cutting a tree under Division 1 must, as far as practicable, cut the tree in accordance with AS4373 as published or amended from time to time."

Whilst there is support for the legislation to consider visual amenity, there are questions as to how this could be incorporated in to the legislation given the subjectivity of what is visually acceptable. As part of the 10-year review of the Regulations we are investigating how the Regulations could meet community and Council expectations for improved visual and amenity outcomes.

2.3 Typical clearance requirements

The clearance distances between vegetation and powerlines are a legal requirement defined in the *Electricity (Principles of Vegetation Clearance) Regulations 2010.*

A clearance zone is the minimum safe distance between vegetation and powerlines. It allows the powerlines to safely swing in windy conditions without being damaged or starting fires. It is a legal requirement for the clearance zone to be kept free of vegetation.

A buffer zone is an additional area around a clearance zone in bushfire risk areas. It defines the maximum extent to which the vegetation may be trimmed. Trimming beyond the buffer zone is not permitted. Trimming vegetation within the buffer zone is intended to ensure the clearance zone remains clear until the next trimming is due.

A regrowth zone is the area around a clearance zone in a non-bushfire risk area. It defines the indicative extent to which vegetation is likely to be trimmed. Trimming beyond the regrowth zone is not permitted, without consent from the owner of the tree. The extent of trimming within the regrowth zone will usually be dependent on factors such as the species of tree, the local climate, and the regrowth rate of the tree, to ensure any vegetation remains outside the clearance zone until the next trimming is due (currently cannot exceed three years). In bushfire risk areas, a clearance zone of 0.1 m is required for fully insulated low voltage powerlines and for uninsulated low voltage powerlines. For all other powerlines, the clearance zone depends on the voltage and length of span of the powerlines.

It is important to note there is no ceiling for the clearance zone above uninsulated powerlines in bushfire risk areas. The middle sections of a conductor between two poles can swing or sag more than the sections closer to the poles and require greater vertical and horizontal clearances.

Figure 2.1: A typical clearance zone and buffer zones for an 11,000 Volt (11Kv) overhead powerline between 100-150m in length in a bushfire risk area



Non-bushfire risk areas (including prescribed areas)

In non-bushfire risk or prescribed areas, a clearance zone of 0.1m is required for fully insulated powerlines (all voltages) and uninsulated low voltage powerlines. For uninsulated high voltage powerlines, the clearance zone depends on the voltage and span of the powerlines.

A typical clearance zone and regrowth zone for an 11kV overhead powerline in the prescribed area (metropolitan Adelaide) is shown below. The regrowth area, while not defined in the Act, refers to the area around a clearance zone in a non-bushfire risk area. It defines the indicative extent to which vegetation can be trimmed.



Figure 2.2: A typical clearance zone and regrowth zone for an 11kV overhead powerline in a non-bushfire risk area



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Background

Figure 2.3: Uninsulated powerlines in non-bushfire risk areas (private land)



Regrowth zone

View of the clearance zone from the side



View of the clearance zone from above



Consultation, notification, comunication and decision

Consultation, notification, communication and decision

Commitment to stakeholders

We will aim to keep you informed, listen to and acknowledge concerns and provide feedback on how it influenced the decision or process

This section outlines the process undertaken by SA Power Networks and its contractors in respect of notifying or consulting with affected parties in relation to vegetation management near powerlines. It also outlines opportunities to improve how we inform stakeholders of our vegetation clearance program and how we will continue to engage with our key stakeholders.

3.1 Customer engagement

SA Power Networks has a strong focus on proactively engaging with customers and stakeholders. The SA Power Networks Customer Strategy (refer *Table 3.1*) sets out the strategies used to increase organisational understanding of customer expectations for use in decision making to increase the value in services provided by the distribution network.

As part of the Customer Strategy, customers and stakeholders were consulted through an extensive stakeholder engagement program throughout 2017–2018. Vegetation management — improving outcomes, was one of the key areas of importance identified by our customers and stakeholders.

SA Power Networks draft levels of service have been developed around the areas of importance identified by customers. From a vegetation management perspective, under the aesthetics level of service, a performance measure has been included to measure the proportion of customers satisfied with vegetation clearance through targeted surveys. Further information on customer satisfaction and our clearance surveys is provided in Section 8.2.

3.2 Customer notification

How we engage with landholders and Councils and the notification/consultation process is critical as a significant proportion of customer and community complaints are in relation to the current notification process.

Our legislative requirements

The following table outlines our legislative requirements in relation to notification requirements under the Act.

Simplify	Personalise	Connect
Be easy to deal with Reduce effort Ensure consistency 	Keep customers informedKnow our customersMake all communication timely and	Put yourself in the customer's shoes Engage with the customer Show empathy
Empower the customerCommunicate clearlyKeep it simple	relevant • Provide value for customers • Be flexible in our solutions • Common where possible, custom where it counts	 Do what is 'the right thing to do' Be considerate of the customer Become a trusted adviser Co-design services with customers
 Transform services Simplify services Quick resolution Customer journey mapping Make services available via channels that customers want to use, when they want to use them 	 Deliver on commitments Keep promises Be accurate – get it right first time Follow up on issues or feedback Recover with flair Be proactive – anticipate and fix issues before they occur Establish trust by doing what we say we are going to do 	Customers are everyone's business • Integrated service delivery • Make decisions • Eliminate barriers • Represent SAPN as 'one team' • Be fair • Show commitment to community
	Dedicating our operau to what customers val	

Table 3.1: Customer strategy

Table 3.2: Notification requirements

Notice	Requirement under legislation	Process or potential improvements
Scoping/Inspection	SA Power Networks shall provide notice of intent to scope/ inspect for the purposes of vegetation clearance.	SA Power Networks will liaise with the relevant Council prior to any scoping work commencing.
Notice of Intent to Cut – "Notice of Vegetation Clearance Required"	SA Power Networks shall provide at least 30 days written notice to private landholders/ occupier of the land prior to vegetation clearance works commencing. This does not apply to works undertaken prior to or after an emergency.	Notices are sent to the private landholders/ occupier of the land where vegetation cutting is required to inform them of the obligations to cut or remove interfering vegetation. The owner/occupier has 21 days to object in writing to the OTR.
Notice of Intention to Enter Council Land to Clear	SA Power Networks must provide at least 30 days written notice to Council prior to vegetation clearance works commencing, including details of when and where clearance will occur under the program. This does not apply to works undertaken prior to or after an emergency.	SA Power Networks provides notice to Council and dataset of trees identified for pruning to Council contact. The 30-day notice can be waived if a Vegetation Clearance Agreement (VCA) is in place. No agreements are currently in place with Councils.
Emergency cutting or special purpose	In an emergency, SA Power Networks may exercise a power of entry at any time and without prior notice. This includes in the event of outages, a threat to life or property or cutting vegetation to re-establish clearances. Contact must be made with the occupier prior to or after the emergency to inform the occupier of what was done and why (verbal or written).	Cutting is undertaken and SA Power Networks informs occupier of work undertaken.
Inappropriate species	Where species contrary to the Regulations to the Electricity Act have been planted, SA Power Networks may advise the occupier of this in writing by letter ' <i>Vegetation</i> <i>Planted or Cultivated Near Powerlines</i> '.	The occupier is given the option of either removing the vegetation, liaising with SA Power Networks regarding tree removal or applying for an exemption under the Act. Notification of the occupier's responsibility to remove the vegetation shall nominate a realistic date by which this is to be done. The OTR must be notified of any instances where the occupier wishes to retain inappropriate species and an exemption may be provided. A copy of the exemption is provided to SA Power Networks.

Our commitment to effective notification and communication

While a number of requirements are placed on SA Power Networks under the legislation, there are opportunities to improve our notification process to maximise coverage and community awareness of our vegetation clearance program in both bushfire and non-bushfire risk areas.

Timing of notification

SA Power Networks will provide Councils with 30 days between notification and cutting to enable Councils to provide information to residents and review the scope of pruning and where required, identify alternative approaches to clearance, such as tree removal or insulating powerlines.

Maximising the notification process

To maximise coverage and community input, SA Power Networks will undertake a mixture of the following methods to notify landholders and residents when we will be undertaking clearance. Whilst this will depend on the area and specific Council requirements may include:

- Advert(s) in local paper(s) outlining when pruning being undertaken in your Council area
- The use of social media via Facebook
- Power@MyPlace[™] and via SMS (if registered at Power@ MyPlace)
- Online via our website www.sapowernetworks.com.au
- Provide information on vegetation clearance program to publish on Council websites, Council newsletters, Council forums or community meetings.

The current notification process causes concerns for some customers, particularly in rural and regional areas, as we have no way of knowing who the owner/occupier is and therefore have no cost-effective way of efficiently or effectively notifying.

As part of the 10-year review of the Regulations, SA Power Networks is keen to transition from paper based notification and adopt more innovative and different ways to notify customers. This could include SMS, social media, adverts and an opt in/out approach for landowners where landowners can register to receive/not receive notifications.

Consultation, notification, communication and decision

3.3 Community information and education

One of the key drivers for vegetation clearance is to ensure community safety and deliver a reliable electricity supply to customers. Educational material and information on why SA Power Networks undertakes its vegetation management program assists the public with understanding the clearance parameters and our legislative requirements.

SA Power Networks has developed a range of vegetation management material to improve how we engage and inform our stakeholders on our clearance program and legislative requirements. This includes:

- 'Managing trees around powerlines' brochure, poster and banner – a range of material available to Councils interested in holding a display in their foyer prior to vegetation clearance commencing in their Council area or to inform customers on our vegetation clearance program.
- **Webpage** dedicated webpage on our corporate site for Trees and Powerlines to educate our customers on how and why we manage trees around powerlines.
- Plant Selector Tool a comprehensive online resource to improve the selection of appropriate species near powerlines.
- Right Tree, Right Place poster a poster developed in consultation with the Nursery Industry Association of SA to encourage appropriate species selection near powerlines and outline some of the key considerations that should be made before planting near a powerline.
- Vegetation management DVD the DVD explains how we meet our legislated requirements to manage vegetation around powerlines.

The material has been designed to be customer friendly and provide clear and consistent messages to customers on how we manage vegetation near powerlines, as well as providing a resource for Councils to inform their residents about our clearance program and legislative requirements.

An animated video has been developed to help educate the public about managing the risk of trees around powerlines. The DVD stars Trev the Tree who exists in harmony with his friend Stan the Stobie and tells the story about caring for him and his mates under powerlines. The DVD will be used to highlight the importance of bushfire safety, vegetation management and appropriate species selection under powerlines.



Stan the Stobie and Trev the Tree animated video

The animation is available on the SA Power Networks website: sapowernetworks.com.au/trees and YouTube channel: https://www.youtube.com/ watch?v=5W6mQsrEC98

A shortened version of the DVD has also been developed for Social Media and is available at: https://www.youtube.com/watch?v=j15uKaQVZKM

SA Power Networks and the LGA urge all Councils to share this DVD with members of their local community to highlight our approach to vegetation management under or near powerlines.



Customer friendly vegetation management information

- Approved Tree List provides a list of species considered appropriate for bushfire and non-bushfire risk areas for planting under powerlines.
- **Tree Trimming near Powerlines** provides an overview of tree trimming around powerlines (eg. responsibilities, considerations and legal requirements).
- **Bushfire Safety** outlines our approach to bushfire safety and measures to mitigate risk.
- Access to your property outlines the main reason SA Power Networks may enter your land and your rights and responsibilities.
- Alternatives to Clearance outlines some of the key options available as an alternative to our regulated and legislated vegetation clearance.
- **Trees and Powerlines** booklet produced by the Office of the Technical Regulator to outline the legislative requirements for vegetation near powerlines.

Information and copies of the Fact Sheets are available on the SA Power Networks website, sapowernetworks.com.au or by calling General Enquiries on 13 12 61.

To improve the approach to community information and education, the following initiatives will be pursued:

- Promote the use and distribution of our vegetation management material eg. Shows, Field Days, displays.
- Use of various media to improve community education/ awareness on fire mitigation, especially pre-bushfire season.

Appropriate Species List – 'Powerline friendly species'

There are limitations regarding the type and location of trees and vegetation that can be planted under or near powerlines.

Under the Regulations, there is an appropriate species list (available on the website and via the OTR) that provides guidance on the types of trees appropriate for planting under powerlines:

- Table 2: Bushfire risk areas or areas where lines are uninsulated under powerlines up to mature height of 3m.
- Table 3: Non-bushfire risk areas or areas where lines are insulated under powerlines mature height more than 3m but less than 6m.

Plant Selector Tool

The Botanic Gardens has developed a comprehensive online resource to help achieve more sustainable urban landscapes through improved plant selections. The Interactive Plant Selector Tool is a valuable resource for landholders, Councils and the general public regarding appropriate species selection.

The tool provides detailed information about each plant including suitability for different landscape types, soil and light preferences, physical appearance, growth habits, attraction for native fauna, common landscaping uses and other qualities and cautions. Additional information about trees includes suitability for a variety of urban placements and purposes.

SA Power Networks has funded the development of additional capability for this online tool specifically to highlight plants suitable for growing under powerlines. The database has about 800 trees or plants that are considered appropriate for planting under powerlines, based on their bushfire boundary designation. There are also a number of species of trees that while they may require cyclic pruning are considered appropriate by some Councils and will perform successfully under powerlines in non-bushfire risk areas such as pear trees or crepe myrtles. The appropriate species list has subsequently been reviewed and the OTR is seeking an amendment to the existing lists within the Regulations.

The online tool will need to be used by Councils in conjunction with their Tree Management Plans in relation to species selection that suits and meets Council and community requirements.

The link for Plant Selector+ is: plantselector.botanicgardens.sa.gov.au

Consultation, notification, communication and decision

Powerline friendly list of species for urban street tree planting

Feedback from Councils and other stakeholders highlighted that the current OTR list was considered too large and did not provide adequate guidance to assist with species selection under powerlines. SA Power Networks want to ensure appropriate species are planted under powerlines and that a list is available that meets Council's objectives for street tree planting, provides guidance on trees that are both available and suitable for South Australian conditions, and minimise pruning requirements.

SA Power Networks engaged Seed Consultancy in 2018 to develop a list of suitable trees to plant under powerlines in non-bushfire risk areas and towns by the following five climate zones:

- metropolitan (prescribed area)
- cool temperate eg. South East
- warm temperate eg. Barossa Valley
- arid lands eg. Pt Augusta
- coastal

The list was developed in consultation with the Arborist Reference Group, LGA Working Group, key local government representatives and the nursery industry. A stakeholder workshop and five Council workshops were held in April and May 2018 to seek input in to the development of the list. Whilst the list does not replace the current OTR list it provides a more user-friendly list that focuses on species that grow well in non-bushfire risk areas within the State's different climate zones.

Consultation with the OTR will also be required to understand how the list will be incorporated in to the legislation going forward, with the aim of developing a more flexible approach to plant selection and not having a list embedded in legislation.

Engagement

SA Power Networks will continue to liaise with key industry and community groups, including the Nursery Industry Association of South Australia (SA) regarding opportunities to work together to improve appropriate species selection near powerlines.

3.4 Community and stakeholder engagement

SA Power Networks will continue to work with the community and develop partnerships to improve vegetation management. Community and stakeholder engagement is crucial to developing a long-term plan for vegetation management and improving customers understanding of our vegetation clearance requirements.

Consultative Groups

To improve how we work with our stakeholders we established the following:

- Arborist Reference Group— an independent group has been established to provide horticultural and arboricultural expertise on strategic vegetation management initiatives.
- LGA Working Group a working group with the LGA and several member Councils has been established to improve how we manage vegetation near powerlines and develop a long-term plan for implementation.
- Annual Local Government Forums or workshops to bring local government together and discuss key vegetation management issues or topics.

Council engagement

SA Power Networks has developed a consultation approach for how we propose to engage with Councils to ensure opportunity for discussion on the clearance program and adequate lead in time is provided.

The process includes:

- Notification of Indicative Clearance Plan to Council to allow adequate lead-in time eg allocation of budget or resources.
- Pre-clearance engagement with Council to discuss program, understand special/sensitive areas, stakeholder or environmental issues and opportunities for collaboration.
- Post clearance surveys with sample of residents/ landowners in selected Council areas.
- Offer to present to Council's Elected Members and key staff.
- Package of vegetation management material, including brochures, banner and website, to improve community awareness and understanding of our program and legislative requirements.
- Adverts on Council/SA Power Networks webpage and social media coverage.
- Council provision of information on possible trees for removal as part of clearance program.
- Provision of scoping data for Council review.

Engaging with the local community

In 2017, SA Power Networks attended three Field Days – South East, Riverland and Yorke Peninsula – as well as having a helicopter display and stand at the Royal Adelaide Show. The Field Days provided the opportunity to talk directly with our customers on a range of topics, including vegetation management and talk with landowners regarding opportunities to remove trees that require ongoing pruning around powerlines on private property.

SA Power Networks participated in the Field Days, country shows and Royal Adelaide Show again in 2018. Community feedback on our presence at such events has been positive and it is intended to continue to have a presence at these events over the coming years.

In addition, SA Power Networks will undertake the following activities to engage with our stakeholders and community:

- Ongoing liaison and partnerships with Councils and stakeholders.
- Bi-annual presentations to Regional Council Groups to keep informed on key initiatives and improvements.
- Post clearance surveys send feedback form and letter to sample of residents/landowners in selected Council areas to understand their level of satisfaction and identify areas for improvement. The survey is available hard copy or online at: sapowernetworks.com.au/treessurvey.
- Developing partnerships with key organisations eg educational and research institutions and government agencies, such as NRM Boards.
- Investigate working with schools and educational opportunities.
- Working with the Nursery Industry Association (NIASA) and other industry bodies to identify opportunities for partnerships.
- Explore further opportunities for engaging with landholders and customers, including the use of negotiators to directly engage with residents/ landowners.
- Work with the CFS to improve community education/ awareness on fire mitigation.
- Visibility Tool an online tool is being developed to map the vegetation clearance program to improve visibility of the program in the broader community. The tool will show the status of the clearance program throughout the year and provide an opportunity for interactive customer feedback.

3.5 Decision making Management of customer issues

SA Power Networks has a Customer Charter that outlines our commitment to customers in relation to how we will provide our services, including requirements in relation to vegetation clearance, the obligations of property owners/ occupiers, our pre-summer bushfire mitigation preparations and property access requirements.

SA Power Networks values community feedback, which can be made via the following:

- General enquiries service 13 12 61 (Mon Fri 9.00am-5.00pm, closed public holidays)
- Email customerrelations@sapowernetworks.com.au
- Website www.sapowernetworks.com.au/trees
- Mail Customer Response SA Power Networks GPO Box 77 Adelaide SA 5001

Dispute resolution

Disputes may arise from decisions made by SA Power Networks in carrying out its responsibilities to maintain safe clearances around powerlines.

Resolving customer grievances is important to SA Power Networks and we will endeavour to resolve any dispute with those affected in accordance with our Complaint Management Process.

SA Power Networks aims to respond to or acknowledge all complaints or enquiries within five business days via the most practical and time efficient medium, whether this be via written correspondence, email, telephone, or social media.

If you are not satisfied that SA Power Networks has satisfactorily resolved an issue, the matter can be referred to the Energy and Water Ombudsman of South Australia:

Energy and Water Ombudsman SA

Level 12, 50 Pirie Street Adelaide SA 5000 GPO Box 2947 Adelaide SA 5001 Tel: 1800 665 565 Email: contact@ewosa.com.au Website: www.ewosa.com.au

The Energy and Water Industry Ombudsman is a totally independent industry body and will act as a mediator between the customer and SA Power Networks. This service is free of charge.

Consultation, notification, communication and decision

3.6 Opportunities to improve how we engage with our customers

There are a number of opportunities to improve how we engage and work with our key stakeholders in regard to vegetation management.

These include, but are not limited to:

- Availability, in various formats, of improved community information and education materials.
- Closer engagement with key stakeholders and community representatives, including:
 - Arborist Reference Group
 - LGA Working Group
 - Local Government Forums
 - Post clearance surveys
 - Presentations to Regional Council Groups
 - Presentations to individual Councils
 - Workshops on specific topics or areas of interest eg. species selection, regulatory amendments
- Presentations to Council depot/operational staff.
 Improved notification process including written notification, incorporating a contact person, and
- followed up with a face to face meeting.
 Partnerships with community and interest groups with a particular interest in vegetation management and wildlife management, including Trees for Life, Landcare, and wildlife groups.
- Opportunities to work with local schools on education programs or replanting programs.
- Opportunities to work with Councils and customers to ensure vegetation originating on their properties, encroaching into the street or over neighbour's fences, is managed and controlled by the customer.
- Online complaints email or customer service number for addressing vegetation management issues or concerns.

In addition, SA Power Networks will continue to work with the LGA Working Group and Arborist Reference Group to enhance the overall quality and sustainability of vegetation management and implement key strategic initiatives.

Agreements with Councils, community, landholders and other land managers

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Agreements with Councils, community, landholders and other land managers

Commitment to stakeholders

We will seek direct advice in developing partnerships and opportunities for vegetation management improvements and seek your input into location or zone specific pruning programs

Working with Councils, landholders and other land managers to understand who is responsible for vegetation management, including pruning, tree removal and replacement, and species selection and the different roles they play, is fundamental to improving vegetation management near powerlines.

4.1 Interface between Council and SA Power Networks tree pruning and programs

There are a number of opportunities for improved coordination between Councils and SA Power Networks in relation to pruning activities and tree replacement/ renewal programs.

Councils' Management Plans Street Tree Management Plans

The majority of Councils have a Tree Management Framework, Policy or Plan in place to provide vision and direction for the management of trees within their Council area, including street trees.

Species selection and tree removals and replacement will need to align with Councils endorsed management plans and improved alignment with our vegetation management objectives.

Roadside Management Plans

Since the introduction of the *Native Vegetation Act 1991*, local councils in South Australia have been required to manage vegetation on roadsides by either applying guidelines issued by the Native Vegetation Council (NVC), or by developing a Roadside Vegetation Management Plan (RVMP) approved by the NVC. Powerline clearance is identified as a threat to roadside native vegetation, however there is an opportunity for SA Power Networks and its contractors to work with local councils to coordinate activities, including weed and sapling removal, along roadsides to deliver improved outcomes.

Pruning work

There are opportunities for Councils and SA Power Networks to work more collaboratively to improve vegetation clearance outcomes. These could include:

- Joint scoping to identify opportunities or alternatives to clearance.
- Additional pruning being undertaken by Councils following line clearance by SA Power Networks to achieve a better visual outcome.
- Formative pruning being undertaken by Council.

Street tree reviews

There are a number of Councils with ageing tree stocks and plans to replace these trees in the future, depending on life expectancy and other factors.

SA Power Networks and Councils should work together to identify aged trees, review and where possible align replacements with Councils' Tree Management Plans while supporting improved community outcomes and management of trees around powerlines. The aim should be to determine suitable replacement options over a one to 10-year timeframe.

Street renewal and replacement programs

A number of Councils undertake streetscape renewals, which involves replacing entire streets of trees, generally considered aged or inappropriate, with new species. There are opportunities for SA Power Networks and Councils to work together on replacement options and timeframes.

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An example of a project is Verdun township where 36 Ash trees were removed and replaced with semi-mature Maples that are appropriate for planting under powerlines in 2017. The Ash trees were not suitable for under powerlines due to their vigorous growth, requiring regular and substantial trimming to reduce the potential for power outages and fire starts in this high bushfire risk area. A partnership with Adelaide Hills Council was undertaken to deliver an improved outcome for the community.

Management of culturally significant trees

SA Power Networks will consult with the relevant stakeholder prior to undertaking any pruning work on culturally significant trees. This includes:

- Native Vegetation Council roadside vegetation of environmental significance or protected native vegetation.
- Local Council heritage and national trust trees, culturally significant trees, avenues of honour.
- Local Council significant trees (defined under the *Development Act* metropolitan Adelaide).
- Local Council/ DEW trees that are particularly large, native to the area and/or significant.
- National Trust of SA maintain a Register of Significant Trees to help identify and conserve trees of importance, including trees with historic or cultural value, environmental or botanical significance and avenues of honour.

4.2 Responsibilities/allocation of costs

In South Australia, SA Power Networks accepts the costs and liabilities associated with vegetation clearance in bushfire and non-bushfire risk areas and on private or public lands, in accordance with the *Electricity Act 1996* and the *Electricity (Principles of Vegetation Clearance) Regulations.*

SA Power Networks currently undertakes a program of vegetation clearance in bushfire and non-bushfire risk areas. This program is funded to comply with our legislative obligations.

The protocol outlines the baseline programs for vegetation management for which funding is approved by the Regulator. Vegetation management is funded through our operating expenditure and the AER currently funds us to undertake a mix of one, two and three year cycles in bushfire risk areas and a three year cycle in non-bushfire risk areas.

SA Power Networks would support proposals from Councils to introduce a different pruning regime or tree treatment as long as it meets our legislative and risk obligations, or for which funding is provided. Furthermore, under current legislation Councils have the option to contribute to additional programs or to take over trimming in their Council area (with the associated liability). If an individual Council requires specific approaches that are above the baseline program, Councils will need to contribute funding for their specific programs/approaches. The additional programs could be based on either a trade-off within a Council area or funded by Councils. For example, to reduce clearance costs within a Council area, Council might opt for removals in one location for more advanced pruning or additional pruning in another area.

4.3 Opportunities for partnerships with Councils

There are a number of opportunities for partnerships with Local Government. Councils are responsible for managing street trees under their control to improve streetscape value and appeal and enhance biodiversity and habitat value. A large number of Councils have Tree Management Policies and Plans in place to protect their street trees and provide a framework for their management.

SA Power Networks is also keen to work with Councils to develop location and species specific pruning programs. For example, Council might nominate different zones within its Council area where different pruning regimes and strategies could apply. SA Power Networks and the LGA would need to liaise with Councils on their concept of zones for different pruning regimes and strategies. There are also opportunities for Councils and SA Power Networks to develop cost-effective solutions to reduce clearance costs.

SA Power Networks has developed a proposed consultation approach for how we will engage with Councils, with a key objective being to provide adequate lead-in time for Councils to allocate funding and liaise with SA Power Networks regarding alternatives to clearance or alternative approaches to vegetation clearance in their Council area. Early and ongoing consultation will also enable Council to provide a list of possible trees for consideration for removal/ replacement as part of clearance program and allocate budget or resources to develop partnerships.

The following table provides some examples of different zones where different regimes and strategies could apply.

Some specific opportunities for partnerships with Council include:

- Developing partnerships to investigate alternatives to pruning such as tree removal and replacement, asset modification or implementing spacers.
- Data sharing opportunities between Councils and SA Power Networks, including scoping data, GIS information on street trees or native vegetation.
- Undertaking joint scoping with Councils to improve vegetation management outcomes.
- Developing location and species specific pruning programs in partnership with individual Councils.
- Opportunities for trade-offs within a Council area and developing detailed work plans for individual Council areas in consultation with Council.
- Collaborative approach to planting under and near powerlines.
- Better communication on upcoming pruning programs.

Agreements with Councils, community, landholders and other land managers

Table: Different zones for different pruning regimes

Notice	Possible strategies
Zone A - HBFRA eg Mount Lofty Ranges (Stirling, Gumeracha)	 Tree removal/ replacement Species specific removal programs eg. fast growing species (Ash trees) Span by span strategies eg. multiple cutting on targeted spans Woody weed removal Sapling removal
Zone B – BFRA, high rainfall (>400mm) eg. South East	 Tree removal/ replacement Species specific removal programs eg fast growing species Span by span strategies eg. multiple cutting on targeted spans Woody weed removal Sapling removal
Zone C – BFRA, 250mm-400mm rainfall eg. Riverland	 Cycle frequency Tree removal/ replacement Species specific removal programs eg. fast growing species Woody weed removal Sapling removal
Zone D – BFRA, low rainfall and limited trees (<250mm) (above the Goyder line) eg. Ceduna, Roxby Downs	 Cycle frequency Tree removal and replacement – arid appropriate species Woody weed removal
Zone E – NBFRA, High amenity areas (tourist/ historical precincts, high traffic areas, main streets and shopping centres, near schools or community centres) eg. Hahndorf, Glenelg, Port Elliot, Clare, McLaren Vale	 Staged removal/ replacements Amenity pruning Growth regulator Species specific pruning techniques Individual tree removal and replacement Species specific removal programs eg fast growing species (Ash trees) Street tree renewals Asset modification eg. insulating the powerlines, undergrounding
Zone F – NBFRA, rural townships eg. Cummins, Melrose	 Tree removal/ replacement Amenity pruning Growth regulator Individual tree removal and replacement Street tree renewals Asset modification eg insulating the powerlines, undergrounding
Zone G – Natural/ environmentally sensitive areas eg. protected areas, environmentally sensitive areas, RMS sites	Sapling removalWoody weed removalMore advanced horticultural techniques
Zone H – Low visibility areas eg. areas where tree removals relatively easy to implement or woody weeds, industrial areas, rural areas, low traffic areas	Tree removal/replacementSapling removalCycle frequency
Zone I – No Tree Zone , areas where there is significant service utility infrastructure (water pipeline, gas pipeline, sub transmission (66kV) and transmission (132kV and 275kV) powerlines exist) eg. areas where trees should not be replanted if trees are removed	Tree removalSapling removal

Pruning and vegetation clearance

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Pruning and vegetation clearance

Commitment to stakeholders

We will aim to keep you informed, listen to and acknowledge concerns and provide feedback on how your issues and concerns have influenced the decision or process

5.1 SA Power Networks vegetation clearance program

SA Power Networks vegetation clearance program consists of the following programs to manage vegetation near powerlines:

- Annual cyclic program in high bushfire risk areas and risk-based approach in medium bushfire risk areas (approximately 430,000 line spans across the state).
- Pre-fire danger season program in high bushfire risk areas repatrol all spans that were inspected as part of the annual cyclic program prior to 1 May in that year.
- Three-year cyclic program in non-bushfire risk areas.
- Metropolitan Council program three-year cyclic program.
- Metropolitan 33kV/66kV Pre- Fire Danger Season Program – preventative maintenance program on high voltage feeders.

The vegetation services contractors are responsible for undertaking the inspection of feeders for the purpose of scoping annual, cyclic and pre-summer cutting programs. Inspection is done using a 4WD vehicle to traverse the line, checking every span for potential and existing vegetation infringements. The required clearance under the Act (Section 6) is then determined for the cutting crew.

SA Power Networks is responsible for liaising with Council pre-inspection to gain their input into the scoping process. This allows Councils to provide information on:

- Trees suitable for removal.
- Culturally sensitive trees.
- Opportunities for integration with Council or other agency (eg DPTI, developers) pruning work.
- Stakeholder/community issues or concerns.
- Council inspect trees for consideration of options.
- Trees under stress eq. health, old age, decay, disease.
- High amenity areas.

SA Power Networks will:

- Provide Councils with 30 days notice of their intent to scope.
- Provide Councils the scoping data 30 days prior to cutting to allow Council review, consultation and identification of alternatives.
- Identify potential trees for removal eliminate span, extend time between cuts or visual amenity.
- SA Power Networks will develop an indicative schedule for the clearance program to provide advanced notice of when tree trimming is likely to occur in Council areas.
- Meet with Council on-site to discuss the proposed program following the provision of cutting data and prior to the commencement of tree trimming.

Weather analysis implications

The SA Power Networks annual vegetation management program scope can vary significantly from year to year depending on a range of factors. In particular, the weather patterns experienced in the lead up to, and during the works program influence vegetation growth - years with favourable growing conditions having the potential to increase the number of spans requiring cutting works and therefore also annual works program costs. Qualitative analysis on weather is now undertaken to provide a predictive analysis of find rate projections and implications for the annual vegetation management program.

5.3 Pruning techniques

Pruning is the directed and purposeful cutting of a plant towards a pre-determined end, which in the case of SA Power Networks vegetation clearance program is to prune the branches of trees which do or may interfere with powerlines, in accordance with the legislation.

A number of specific issues have been identified by Local Government in relation to pruning, including:

- Pruning needs to be more species and location specific.
- Native vegetation management requires different pruning approach.
- One size fits all approach but different species have different regrowth and other factors need to be considered eq rainfall, weather.
- Provide information on the extent of pruning to be undertaken per tree.

It should be noted that improvement in these areas requires additional data being captured. There is a range of data that needs to be collected at the line span level to enable effective strategic planning and improve future optimisation of the program. SA Power Networks is working to improve its data capture to improve our understanding of different species, growth rates and regional differences.

The following table outlines the different pruning techniques and their application for managing vegetation near powerlines.

The definitions for the pruning techniques have largely been sourced from the Australian Standard AS 4373 for the Pruning of Amenity Trees. Line clearance is defined as pruning to maintain clearances around overhead services, such as powerlines, which should involve formative pruning, reduction pruning or remedial pruning.

Pruning and vegetation clearance

Pruning Technique	Description of pruning technique	Application of technique	Illustration of pruning techniques
Formative pruning	Formative pruning consists of the selective removal of specific branches to enhance form and improve structure, or to directionally shape the young tree. One of the aims of formative pruning is to accommodate site constraints and reduce encroachment on powerlines as the tree grows. Future conflicts between vegetation and electricity infrastructure can be reduced by ensuring vegetation planted on Council controlled land is appropriately selected and formatively pruned during development.	SA Power Networks is looking for Councils to undertake formative pruning to shape trees or improve the visual aesthetics of trees over time. Formative pruning techniques should generally be used for Council street trees to reduce conflict with powerlines over time.	
Selective pruning	Selective pruning is the removal of identified branches that are causing a specific problem.	Selective pruning aims to reduce the height of the tree and maintain the required clearance zone.	
Directional pruning	Directional pruning involves removing limbs growing into the powerlines and encouraging growth away from the powerlines. Directional pruning leaves trees healthier and ultimately reduces clearance costs over the long-term.	Whilst directional pruning may not always improve the trees appearance it is the preferred method for managing trees near powerlines.	

Pruning Technique	Description of pruning technique	Application of technique	Illustration of pruning techniques	
Reduction pruning	Reduction pruning reduces the size of the crown of the tree in the height or spread. The ends of the branches are removed to internal lateral branches or stems.		Before After	
Pollarding	A pruning technique that establishes branches ending in a pollard head of buds and vigorous shoots. In urban areas this would require annual pruning to be done effectively and the current pruning cycle is 3 years.		Before After	
Tree removal	If the degree of pruning required is such that a satisfactory appearance cannot be maintained, then it may be preferable to remove the tree.	Under the current legislation there are no provisions for tree removal for visual or health reasons. SA Power Networks relies on working with Councils and landholders. As part of the 10 year review of the Regulations, SA Power Networks is seeking the powers to remove trees under certain parameters in the bushfire risk areas.		

SA POWER NETWORKS PROTOCOL FOR VEGETATION MANAGEMENT NEAR POWERLINES 2019–2021

Pruning and vegetation clearance

5.4 Visual amenity and amenity pruning

Visual amenity of vegetation near powerlines is important to local government and landowners in both metropolitan and rural areas and SA Power Networks recognises the tensions between community expectations and ensuring full compliance with the clearance obligations. Our customer engagement has shown that the SA community is placing increasing importance on managing community safety from bushfires, and there is a willingness to address the severity and frequency of pruning that may severely impact tree health and visual amenity.

There is some Council interest in the inclusion of Australian Standard AS 4373 (Pruning of Amenity Trees) in the Regulations. The Standard however is not easy to apply and is vulnerable to different interpretations. Application of this Standard to trimming around powerlines could raise serious doubts in determining the limits of SA Power Networks' legal liability if a fatality, injury or property damage resulted from a fire caused by the interaction of vegetation and electricity infrastructure.

The current cutting approach under the Act and Regulations with respect to liability is based on compliance with the *Principles of Vegetation Clearance*. Compliance is based on meeting defined clearance distances and these are well understood by all involved in vegetation scoping and cutting and compliance with them is clearly demonstrable. This provides a large element of certainty in an environment where a bushfire, for example, could be started by any number of factors, and places reasonable and defined limits on SA Power Networks' liability.

As part of its regulatory reset proposal for the regulatory control period 2015-2020 SA Power Networks sought additional funding for a number of improvements, including more advanced pruning techniques and a shift from a three year to a two-year cycle in high amenity areas to improve outcomes.

The AER in its Final Determination (November 2015) noted that visual amenity is not a requirement for the AER to consider and needs to be progressed through state based legislative review and reform if Councils think it is important. In addition, it stated that if Local Government wants a higher standard of vegetation management then it should contribute or fund the additional service requirements. Several initiatives are being implemented to improve visual outcomes around vegetation clearance:

- Visual Amenity Taskforce the objective is to identify the impacts of powerline clearance pruning on the amenity value of the trees and consider what options are available to minimise any negative impacts. A taskforce was established in March 2018 to identify a number of representative treescapes to trial different cutting techniques, in partnership with our vegetation clearance contractor and local council, to assess the impact on the tree in terms of visual amenity and health/ structure, undertake a cost-benefit analysis and assess community response.
- Council's fund additional amenity pruning a number of Council's fund our vegetation clearance contractor to undertake additional amenity pruning to their trees at the time of clearance. This reduces the cost to Council, with the average additional cost for amenity pruning being about \$30-\$50 per tree.
- 10-year review of Regulations investigating how Regulations could meet community and Council expectations for improved visual and amenity outcomes.

5.5 Pruning cycles

The frequency of tree trimming varies among Council areas, and even within Council areas, depends on the line voltage and area/zone (ie. bushfire or non-bushfire risk areas).

Bushfire risk areas

SA Power Networks undertakes an annual cycle of inspection and cutting in high bushfire risk areas and a risk-based approach in medium bushfire risk areas.

Non-bushfire risk areas

SA Power Networks currently undertakes a three-year cycle in non-bushfire risk areas. Community engagement has indicated that a change to the trimming frequency would reduce the negative impact to the trees as a less severe cut would be required. Subject to funding, SA Power Networks proposes to move to a two-year trimming cycle in selected non-bushfire risk areas.

5.6 Species and specimen specific guidelines

Where practical, pruning should also consider a number of species and specimen specific constraints, including but not limited to:

- Location (Council).
- Species (tree types).
- Social (stakeholders/community).
- Importance of local knowledge and training.

5.7 Timing and scheduling

Timing

- Timing of pruning needs to consider a range of factors including weather, species, environmental indicators (nesting times of birds), flowering and access to area.
- Greater lead in times 30 days is provided to Councils between notification and pruning. Where considered warranted by SA Power Networks, a 30-day extension can be requested, to allow more time to review the pruning schedule. For example, to meet Council meeting dates.

Timing and type of pruning

Different trees have different optimum times for pruning. For example:

- Deciduous trees should be pruned when they are leafless as the branches are more easily seen and the direction of regrowth can be planned.
- Evergreen trees should be pruned after flowering or bearing fruit, but can generally be cut at any time.
- Conifers can be pruned at any time but excessively heavy pruning will expose their limbs.

If the degree of pruning required is such that a satisfactory appearance cannot be maintained, then it may be preferable to remove the tree.

Scheduling

Clearance work should be scheduled to minimise impacts to landholders, Councils and the community. Scheduling needs to also consider environmental factors, such as wildlife breeding seasons.

There are a number of factors that need to be considered when scheduling clearance work, with the size and nature of the street being the key determinants. Some of the specific issues that need to be considered are outlined in the following table.

	Proposed approach
Schools	 Where possible cutting will be avoided during the following times: School drop-off and pick-up hours (between 8.15-9.00am and 3.00-3.45pm). Not during the first week of school term. Cutting will be scheduled during School Holidays where possible to minimise disruptions.
Community events	Clearance work will be scheduled to avoid or minimise disruption to community events where possible. Events organisers should contact SA Power Networks to inform them of dates.
	 General enquiries service – 13 12 61 (Mon – Fri 9am-5pm) Email – customerrelations@sapowernetworks.com.au
Special event clearance	Clearance works will be undertaken as required prior to major events to minimise the risk of outages eq. Royal Adelaide Show

5.8 Site management Traffic control and costs

Appropriate traffic management must be put in place by the contractor prior to vegetation clearance work being undertaken.

All traffic management must adhere to the Road Traffic Act, Regulations, Codes of Practice and Australian Standards.

Safe work zones

The contractor is required to provide a safe work zone prior to clearance works being undertaken.

Native vegetation management

SA Power Networks is exempt under the *Native Vegetation Act 1993* from tree trimming and maintenance work and for clearance work undertaken in accordance with the *Electricity Act 1996.* SA Power Networks has been working with the Native Vegetation Council to develop a Standard Operating Procedure (SOP) to meet our requirements for vegetation clearance.

An ongoing tree removal and replacement program to reduce ongoing operating costs and remove problem trees commenced in 2017, however to date, native vegetation has been 'parked' due to the costs associated with removal (offsets) under the current legislation.

In June 2017, the NVC Board endorsed the SOP, with the exception of Tree Removal and Replacement Program. The Board recommended that SA Power Networks continue to work with the NVC on options available to offset trees identified for removal. Under the current legislation, the cost of offsets means that in most instances removal is not financially sustainable. The payment of an offset for removal will be directly borne by electricity customers and SA Power Networks is keen to balance delivery of the vegetation clearance program with value for money and the long-term interests of customers.

As part of the 10-year review of the regulation (expire in 2021), SA Power Networks proposes to seek an amendment to the regulations that will allow the removal of trees, including saplings, directly below the Clearance Zone in bushfire risk areas.

Under the new Native Vegetation Act regulations (introduced in July 2017), SA Power Networks is no longer required to pay an offset for the removal of saplings, classified as a tree less than five years of age.

The contractor needs to consider when vehicle access is or is not inappropriate to a site to protect and minimise damage to native vegetation. Councils have a role to play in identifying and flagging environmentally sensitive areas.

The Roadside Marker System (RMS) has been developed to protect native vegetation occurring on road reserves. Councils are involved on a voluntary basis and a simple uniform standard for marking sites of natural, historic or cultural significance has been developed to help Council, other agencies and contractors to manage roadside vegetation.

Pruning and vegetation clearance

SA Power Networks will ensure these sites are managed appropriately in accordance with the mitigation measures identified for the site.

Site debris/clean-up

Contractors leaving site debris is frustrating for residents and prompts complaints to Councils, as well as SA Power Networks. Site clean-up is the biggest complaint received by customers through our targeted clearance surveys. SA Power Networks will continue to work with our contractor to make improvements in this area.

Vegetation debris may either be left in rural situations (following agreement with the landholder or Council), where it will not pose a bushfire, safety or environmental risk, to decompose naturally or mulched in other situations.

Timber and mulch, from vegetation clearance works on public land is to be considered the property of the local Council as the controlling authority and should be offered in the first instance to that Council, prior to the contractor disposing of it.

All vegetation material (including mulch) produced from undertaking clearance works on private property is to be considered the property of the owner/occupier. If so requested by the owner/occupier, it is to be left on the property at no charge.

5.9 Opportunities for improvement in pruning and vegetation clearance

There are a number of opportunities to improve the current vegetation clearance program and how we work with Councils and landholders. This could include:

- Opportunities for joint scoping with Councils or involving Councils during scoping stage.
- Increased lead in time between scoping and pruning.
- Better documentation of scoping data and more detail.
- Part of scoping for contractor should require them to consider the health of the tree and contact Council prior to works if health if likely to be affected.
- Council provision of possible trees for removal as part of clearance program.
- Post clearance surveys with resident/landowners to improve our clearance outcomes.
- Provide feedback to our vegetation clearance contractor on the survey results eg. native vegetation management, site clean-up and contractor behaviour to identify areas for improvement and training needs.
- Recognising the importance of local knowledge and reflecting this in contractor training.

Alternatives to vegetation pruning

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Alternatives to vegetation pruning

Commitment to stakeholders

We will seek direct advice in developing partnerships and opportunities for vegetation management improvements and seek your input into location or zone specific pruning programs While pruning is the most common method of maintaining clearance between powerlines and vegetation, there are a range of alternative methods that can be considered by Councils and SA Power Networks to manage vegetation near powerlines.

SA Power Networks has developed a long-term plan for vegetation management that outlines a range of initiatives as alternatives to vegetation clearance to reduce our clearance requirements. The following section provides an overview of the initiatives that SA Power Networks is keen to develop in partnership with Councils to reduce clearance requirements.

One of the principles of our long-term plan is sustainability, including tree removal, planting appropriate trees and creating an overall positive net impact on the environment. Determining the value of the tree(s) and an appropriate approach (removal, pruning or asset modification) will be a key part of our long-term plan.

While additional funding was sought for a number of vegetation management initiatives through our Regulatory Reset Proposal for 2015-2020, specific additional initiatives were not approved for funding by the AER. The initiatives proposed were supported through community consultation and, as such, SA Power Networks remains committed to working with stakeholders to develop a more sustainable approach and to implement initiatives where they can be proven to be cost effective.

Tree removal programs are critical to developing a sustainable vegetation management plan that reduces the need for tree trimming over time. The removal of inappropriate, fast growing or large trees in consultation with Local Government and the community is one alternative to the current cutting practices to achieve clearance near powerlines and, in many instances, is the preferred management approach by SA Power Networks. There is also growing support from Councils and the community that this approach is preferable to excessive and ongoing cutting. SA is currently the only State without provisions under legislation to remove trees.

SA Power Networks has a tree removal and replacement program as part of its vegetation clearance program, including span clearances, fast growing species, weed removal and sapling removal. Tree removals reduce ongoing clearance costs with payback estimated at between two and seven years depending on location, types of trees and cutting clearance requirements. Tree removal also provides a long-term economic benefit to consumers and avoids the continual pruning of trees that require ongoing clearance. Tree removal programs also provide the opportunity to collaborate with our key stakeholders and develop partnerships with Councils to provide joint benefits to the community.

Tree removal targets inappropriate trees in high bushfire risk areas. In addition, a program would target areas with high non-conformance rates (ie. Stirling, Mt Barker and St Mary's), high rainfall areas and areas with a high prevalence of fast growing species (ie. Ash trees).

Whilst the focus of a tree removal program would be in bushfire risk areas, tree removals would also be investigated in metropolitan Council areas (non-bushfire risk areas), however this is likely to be on a tree by tree basis, rather than on the span by span basis used in the bushfire risk areas.

Guidelines will be developed to provide parameters for what is defined as an 'inappropriate tree' for removal. This is likely to include consideration of fast growing species, weed trees, areas difficult to access for pruning, selfseeding saplings or unstable trees. SA Power Networks is investigating the use of negotiators to liaise directly with landowners and residents on inappropriate trees for removal.

SA Power Networks is liaising with the Native Vegetation Council regarding options to offset the removal of native vegetation as part of our proposed tree removal and replacement program. As part of the 10-year review of the Regulations, we are seeking an amendment that will allow the removal of trees, including saplings, directly below the Clearance Zone. SA Power Networks is working with Councils and key stakeholders to develop parameters for when trees would/would not be appropriate for removal.

Tree removal initiaitives

SA Power Networks has undertaken a number of tree removal projects in partnership with Council and key stakeholders, including:

- Riverton, March 2014 the removal of 14 trees at the entrance to Riverton and the replacement with more appropriate species. Whilst the trial was undertaken within the township of Riverton, the site was located in a bushfire risk area and annual cutting was required to meet clearances.
- Echunga, June 2014 partnership between SA Power Networks, the District Council of Mount Barker and Adelaide and Mount Lofty Ranges NRM Board to clear 28 spans at four locations. Community consultation undertaken jointly by SA Power Networks and Council.
- Daw Ave, Mount Barker, December 2014 the removal and replacement of 12 Ash trees in a residential street in Mount Barker in partnerships with the District Council of Mount Barker.
- Pierson St, Lockleys, April 2015 the removal of eight gum trees on Pierson St, Lockleys. SA Power Networks funded the removal of the trees to below the high voltage and Council funded the remainder of the removal and the relocation of the trunks for re-use.
- Johnson Rd, One Tree Hill, May 2015 cleared 8 spans of a mix of olives, figs and planted eucalypts along Johnson Rd. The trial was in a high bushfire risk area and was a partnership with the City of Playford and Natural Resources Adelaide and Mount Lofty Ranges.
- Verdun township, June 2017 removal and replacement of 36 Ash trees with semi mature Maples at a height of 3-4m. Ash trees are fast growing and their removal will mitigate the requirement for ongoing cyclic cutting.

These initiatives have shown the value of tree removal and replacement programs in both bushfire and non-bushfire risk areas. The trials targeted inappropriate trees that required ongoing clearance and all the trials have been supported by the local Council and residents.

Consultation prior to removal alleviated customer and landowner concerns regarding removal and in a number of instances resulted in an increase in scope with additional trees being removed.

It is our expectation that Council will contribute some funding, either through direct contribution or the removal of stumps as part of a partnership approach. In addition, Councils have a role to play as part of the community engagement process. It is understood that the ability for Councils to contribute funding will vary between Councils, particularly rural Councils with large geographic areas and low population densities.

A summary of some key projects is provided as Attachment C.

Alternatives to vegetation pruning

Removal and Replacement with appropriate species

While SA Power Networks is keen to remove inappropriate trees, the development of a replacement program where appropriate will provide ongoing environmental benefits. In some instances tree removal will not result in tree replacement, however in many cases trees removed will be replaced with more appropriate species (ie. smaller or slower growing trees). The replacement need not be in the same location and replacement in a negotiated alternative location will be considered in the same Council area, in consultation with the Council.

The removal of large trees and the replacement with suitable, smaller trees was identified as an area of concern by Councils in terms of the streetscape and amenity value, given the value larger trees play in the urban environment. One option would be to provide exemptions for Council to replant large trees removed with a similar species on the condition that Councils undertake formative pruning to shape trees and alleviate future clearance requirements. SA Power Networks would enter into agreements with Councils for them to undertake formative pruning for an initial one to three year period.

Sapling removal

A sapling removal program is a preventative program aimed at reducing cutting requirements over time. The cost of sapling removal is significantly less than the cost of repeatedly trimming or removing a mature tree, so a program targeting the removal of saplings (ie. inappropriate species or self-seeded) within the vegetation clearance easement before they mature and become a management issue is proposed.

The target for the sapling removal program is naturally occurring vegetation, pest plants, self-seeded saplings and inappropriate trees. Following removal, the spans cleared would sprayed to avoid regrowth (where appropriate).

The removal of saplings requires consultation and approval from Councils or private landholders as this is not currently allowed under the vegetation clearance regulations.

Under the new Native Vegetation Act regulations (introduced in July 2017), SA Power Networks is no longer required to pay an offset for the removal of saplings, classified as a tree less than five years of age.

For the purpose of vegetation management near powerlines, a tree sapling is defined as:

- An immature or young tree with a slender trunk.
- Typically, less than four years old.
- A stem diameter up to 80mm.
- A height range of up to 2,000mm.
- Does generally not produce fruit or flowers in this age range.
- Is likely to or will grow into the Clearance Zone.

In June and July 2018 SA Power Networks in partnership with the Adelaide Hills Council undertook a trial to remove saplings in the Gumeracha area to reduce bushfire risk and ongoing clearance. The region was chosen for the trial as it has had significant regrowth since the Sampson Flat fires in January 2015.

The trial involved the removal of saplings in 69 spans and was undertaken on both public roadsides and on public/ private land. The clearance area included Gumeracha Weir, Chain of Ponds and Forreston, with a focus on Checkers Hill which had a heavy concentration of saplings. Following the removal of saplings revegetation works was undertaken to ensure any bare ground is covered with low maintenance and diverse native grasses.

Species specific removal programs eg. fast growing species

There are a number of Councils, particularly Councils with high average rainfall and fast growing species, where it is necessary to cut trees multiple times in a year to meet legislative clearance requirements. In these situations tree removal would be the most appropriate (and sustainable) approach from a cost benefit perspective.

Staged renewal program

To minimise visual impacts associated with tree removal, opportunities for staged removal and renewal will be investigated to decrease impact, protect habitat and manage community concerns. For example, a three, five or seven-year replacement/ renewal program could be implemented in partnership with Council along a particular feeder or area.

Individual tree removal and replacement

In some instances, such as established avenues of trees or ceremonial trees, maintaining trees and species is a more appropriate approach to manage community expectations and streetscape values. In such situations, individual trees would be removed and replaced by Councils to maintain these established avenues. An alternative in these situations is to insulate the lines to reduce the clearance requirements.

Replacement in such situations would be on a case by case basis and SA Power Networks would work with Councils to negotiate an acceptable outcome in terms of replacement and future maintenance.

Growth management

The use of pesticides and a growth management system to inhibit regrowth can be an effective management tool in some circumstances. This could include stump poisoning, chemically treating stumps or the application of a herbicide to prevent and manage regrowth.

SA Power Networks is undertaking a Tree Growth Management Trial of 100 trees in the City of Campbelltown to understand the use of growth retardants in reducing tree growth and clearance costs and the potential of extending pruning cycles.

The following species and locations were elected for the trial:

- Queensland Box Glen Stuart Rd, Rostrevor.
- Pistachio Reid Ave, Hectorville.
- Chinese Elm Montacute Rd, Campbelltown.
- Jacaranda Emerson, Jervois, Galway Grove and Dryden Streets.
- Claret Ash Lower NE Rd.
- Chinese Flame Tree Arthur St, Magill.
- Robinia Gorge Rd, Paradise.

The trial uses Cambistat, the active ingredient Palcobutrazol, which is a tree growth management tool used to reduce tree growth. Cambistat is formulated as a suspension concentrate mixed with water and is applied as a sub-surface basal application by soil injection or basal drench. The material is absorbed by the root system and is transported to the crown of the tree where it inhibits the production of the growth hormone largely responsible for shoot elongation.

From the evidence provided, Cambistat reduces cell elongation and enlargement so the cell structures and plant parts remain intact but are smaller and shorter. This reduces branch elongation and the biomass of the tree, therefore reducing clearance requirements. As a side benefit, the use of Cambistat in the United States has been found to improve the health and vigour of trees and also improves their tolerance to drought and disease. The results from the trial are shown in the following table.

Species	Reduction in growth 2017	Reduction in growth 2018	
		Low rate	High rate
<i>Fraxinus oxycarpa 'Raywood'</i> – Claret Ash	32%	34	1%
Lophostemon confertus – Brushbox	45%	47%	38%
<i>Pistacia chinensis</i> – Chinese Pistachio	29%	65%	73%
<i>Ulmus parvifolia</i> – Chinese Elm	55%	73%	77%
<i>Robinia pseudoacacia</i> – Black Locust	54%	48%	53%
<i>Koelreuteria bipinnata</i> – Koelreuteria (Chinese Flame Tree)	Nil	32%	41%
<i>Jacaranda mimosifolia</i> — Jacaranda	Nil	38%	36%

In Year 1, five out of the seven species showed good control. The trial was unable to demonstrate control in Year 1 for Koelreuteria (Qld Box) or Jacaranda species for the first 12 months

All seven tree species demonstrated a positive response in the second growing season. Overall, across all species and treatment rates, a 49% reduction was observed when comparing against the untreated controls.

The trial will be completed in March 2019 and further work to understand the effectiveness of the tool and selection of appropriate sites for application will be undertaken in consultation with Councils and other appropriate stakeholders. Suitable areas could include high amenity or tourism areas, avenues of honour or entrances to townships.

More advanced tree trimming practices

SA Power Networks would support proposals from Councils to introduce a different pruning regime or more advanced pruning techniques as long as it meets our legislative and risk obligations. SA Power Networks would be happy to work with Councils who are interested in funding the additional cost of undertaking additional pruning to shape trees to improve the visual aesthetics of trees. practices, consider their ability to maintain compliance with the Regulations and the long-term benefits in terms of tree health, amenity, stability and customer response.

Alternatives to vegetation pruning

6.2 Relocating electricity assets

There are a number of options available to manage vegetation near powerlines that means vegetation clearance is either no longer required or minimised.

Undergrounding

The undergrounding of overhead powerlines is one strategy to manage vegetation clearance and improve visual amenity. While undergrounding is supported as an option it is an expensive solution to manage vegetation and would only be considered in certain areas, including high amenity and tourist areas or streetscapes, heritage and coastal areas, high bushfire risk areas and road safety hot spots. The total cost to underground the thousands of kilometres of overhead powerlines in South Australia would be more than \$25 billion. Cost is therefore the main reason for not adopting more extensive undergrounding programs.

The Powerline Environment Committee (PLEC) was established by the State Government in 1990 to manage the State's undergrounding program. This scheme enables SA Power Networks and other parties, such as Councils, to continually improve the aesthetics of local communities. The PLEC program will be maintained and SA Power Networks will continue to work with Councils on priority projects suitable for PLEC funding.

The criteria for assessing undergrounding projects considers:

- Size and characteristics of the community likely to benefit.
- Significance of the area or route for tourism, heritage or its symbolic value, eg. gateway.
- Other significant factors, eg. safety.

The types of projects funded are:

- Areas of high tourism, heritage or amenity value.
- Routes of high traffic volumes eg. major arterial roads.
- Routes of high symbolic value eg. gateway routes.
- Areas of high concentrations of people eg. shopping centres, foreshore and coastal areas.
- Major through routes in towns.

When Councils are upgrading infrastructure and reconstructing roads, installing conduits to facilitate potential undergrounding at a later stage, is the most cost-effective approach.

SA Power Networks undergrounding plan for 2015-2020 includes:

- Maintaining the current \$9.5m per annum Powerline Environment Committee (PLEC) program.
- Undergrounding and or insulation, reconfiguration or re-routing of some powerlines in bushfire risk areas that provide cost efficient outcomes.

In 2017 indicative costs for undergrounding are:

- \$3,000-\$5,000/m for undergrounding HV and LV on major roads or where night works would be required depending on the site specific details; and
- \$2,000–\$3,000/m for undergrounding HV and LV on other roads depending on the site specific details.

PLEC funding for typical residential streets will not be considered however some residential streets may have powerlines undergrounded as part of a larger project.

There are also opportunities for consumers to pay for infrastructure options that protect trees and therefore the need to build in possible community contribution to the consultation process when considering vegetation management options.

Asset modification

Where vegetation is identified as having significant public amenity/historical/streetscape value it may be decided to modify the electrical asset rather than cut or remove the vegetation. In some locations this is the preferred approach to manage vegetation where we are unable to cut or where it is more cost effective to undertake work on the asset than cut.

This could include:

- Installation of insulating powerlines, eg Aerial Bundled Cables (ABC).
- Relocation of powerlines.

In 2017 indicative costs for insulating wires were:

 \$800-\$900/m for replacing existing overhead HV with IUC/CCT and LV with ABC depending on the site specific details.

At some locations, rebuilding a section of the asset with insulated conductors will either eliminate or significantly reduce the vegetation clearance required and therefore the cost of vegetation clearance.

Environmental management

Environmental management

Commitment to stakeholders

We will keep you informed of our environmental obligations and requirements SA Power Networks is committed to conducting its electricity distribution operations and business activities in a manner that prevents or minimises adverse impacts on the environment.

We also monitor stakeholder and community values to ensure that our environmental management systems and initiatives are consistent with the expectations of the community, policy makers and stakeholders.

SA Power Networks has in place a comprehensive structure to manage its impact on the environment. To ensure our environmental management objectives are met, we maintain a robust Environmental Management System (EMS), inclusive of an annual Environmental Management Plan. The plan is a key part of the system and provides direction for SA Power Networks' managers and employees in delivering the intent of our Environmental Policy.

The Environmental Management System (EMS) provides guidance and procedures on the implementation and management of environmental Aspects and Impacts.

In relation to vegetation clearance activities, this includes the following:

- Biosecurity preventing the spread of plant and animal disease and pest plants.
- Management of significant and regulated trees.
- Sensitive and Protected Vegetation areas.
- Cultural and European Heritage sites.
- Protection of Flora and Fauna.
- Erosion and Sediment control.
- Waste management.
- Noise mitigation.

SA Power Networks carries out vegetation management near powerlines in compliance with all applicable environmental legislation.

SA Power Networks has developed Standard Operating Procedure (SOP) for vegetation clearance to provide guidance to employees and contractors associated with construction, maintenance and operational works on network assets.

The SOP will outline the requirement for vegetation clearance approvals and regulation compliance during construction works, operation and maintenance activities.

Activities associated with SA Power Network's vegetation management program are required to comply with state legislation. SA Power Networks has an Environmental Branch that monitors our environmental performance, provides advice on environmental issues and who ensure we meet our legislative requirements.

A summary of the aspects considered in the planning and implementation of the program is outlined below.

7.1 Biosecurity – Pest plants and plant and animal disease management

SA Power Networks has an obligation to undertake works in a way that prevents the introduction of weeds to new areas and the spread of existing weed infestations. Environmental pathogens such as *Phytophthora cinnamomi* (amongst others) also need to be considered, given the potential environmental, amenity and economic implications of spreading and introducing such pathogens into other areas; including into vegetation in reserves, on private property and crops. Similarly, there are animal diseases that may be spread from property to property in the absence of adequate hygiene protocols.

To ensure that SA Power Networks is not responsible for the spread of weeds (particularly declared plants under the *Natural Resources Management Act 2004*), plant or animal diseases, specific hygiene protocols will be applied to ensure that machinery/equipment/vehicles are cleaned prior to leaving infested or high-risk sites, and are therefore clean prior to entering non-infested sites or private property. In order to achieve this SA Power Networks will identify the presence of declared plants and plant and animal diseases (including suspected presence of diseases), and determine suitable control measures prior to work activities. This information will be passed onto contractors, who will be required to adopt the specified hygiene protocol, and processes checked to ensure compliance.

For control of weeds, employees and contractors will apply herbicides according to manufacturer's instructions, label rates and industry best practice. Herbicide use will comply with the *Agricultural and Veterinary Products (Control of Use) Act* and Regulations.

7.2 Significant and regulated trees

The *Development Act 1993* provides that any activity that damages a regulated/significant tree is 'development', and as such requires a development approval.

A significant tree is any regulated tree in metropolitan Adelaide and/or townships in the Adelaide Hills Council or parts of the Mount Barker Council with a combined total trunk circumference of 3.0m or more measured at a point 1.0m above the natural ground level. Local Councils have a register of all Significant Trees in their area and other trees may be identified as significant trees in the Development Plan of the City of Adelaide, City of Burnside, City of Prospect or City of Unley.

A regulated tree is any tree in metropolitan Adelaide and/ or townships in the Adelaide Hills Council or parts of the Mount Barker Council with a combined total trunk circumference of 2.0m or more measured at a point 1.0m above the natural ground level.

SA Power Networks is exempt under the Act for vegetation clearance work around powerlines but shall consult with Councils in the instance that pruning may constitute a 'Tree Damaging Activity'.

7.3 Sensitive and protected areas

Protected areas are sensitive areas that are covered by, and must be protected under legislation and/or Codes of Practice, including:

- Natural Refuges.
- Conservation Areas.
- Wilderness Areas.
- National Parks and Nature Reserves.
- Conservation Parks.
- Declared Fish Habitat Areas.
- State Forest, Timber Reserves or Land Act Reserves.
- Key Coastal Sites declared under Regional Coastal Management Plans.
- International Agreement Areas such as RAMSAR sites.

SA Power Networks shall identify areas of protected and significant habitat by considering local, state and federal government agencies, as well as local signage including significant roadside vegetation markers (RMS sites) and Bushcare sites and heritage listed areas prior to undertaking vegetation management activities work.

The Department of Planning, Transport and Infrastructure (DPTI) has roadside significant sites, most of which are protected by State or Commonwealth Legislation. All works in such areas will adhere to the provisions under the Electricity Act and Regulations.

7.4 Cultural and European heritage sites

Operational activities have the potential to affect Aboriginal and European Heritage artefacts and significant sites. Aboriginal Heritage features can include rock art, scarred and carved trees, native trees, shell middens and stone artefact scatters to burial or ceremonial grounds.

European heritage may include designated natural heritage eg. vegetation or single trees and historic buildings.

The assessment and management of risk in regard to indigenous cultural heritage are performed in accordance with the requirements of the *Aboriginal Heritage Act 1988*. Notification of traditional owners and native title claimants is required if ground disturbance works are to take place in areas of known cultural heritage. Under this Act it is illegal to harm, excavate, relocate, take away or be in possession of indigenous cultural heritage.

There are also trees that may have heritage value, such as avenues of honour or culturally significant trees. Trees can also be listed as local heritage places under the *Heritage Places Act 1993*.

If SA Power Networks or contractors find items that could be cultural or European heritage there are strict stop work and discovery notification protocols that must be adhered to.

Environmental management

7.5 Fauna management

Vegetation Management activities will be undertaken with consideration given to fauna (native animal) habitat and the maintenance of their biodiversity (fauna type and number). Impacts on domesticated farm animals (livestock) will also be considered. While most animals will move away as a result of the presence of people or equipment in the area, some native animals such as koalas, possums and some nesting birds may remain and are protected.

Vegetation clearance has the potential to impact on fauna by disturbing habitat (the environment it lives in). For large protected and or threatened bird species, such as Wedge Tailed Eagles and Sea Eagles, SA Power Networks will endeavour to avoid undertaking these activities during critical breeding times of the year.

Inspection of areas will be undertaken to ensure fauna is not present or will not be harmed as a result of planned works and where necessary, seek to relocate fauna.

7.6 Soil erosion and sediment control

Vehicular movements along easements and access tracks have the potential to cause soil disturbance, which can result in erosion of soils by wind or water. Removal of vegetation can also lead to soil disturbance. This in turn leads to sediment loss in resultant run-off water that may impinge on the environment. Sediment contaminated run-off water entering a watercourse is illegal under the *Environment Protection (Water Quality) Policy 2003.*

Exposed soil has the potential to erode and care shall be taken to minimise the impact and where possible low growing species will be retained to stabilise the site. To minimise the impacts on soils SA Power Networks employees and contractors will ensure that vehicle, plant and equipment movements are confined to the easement or access tracks unless absolutely necessary and after prior consultation with the property owner/manager, local council or state or federal government agencies.

7.7 Waste management

SA Power Networks has robust waste management systems and recycling processes in place to reduce the proportion of material going to landfill and wherever possible re-use and recycle.

All waste generated from vegetation management works including vegetation debris, herbicide containers etc. shall be recycled wherever possible. Vegetation debris may either be left in rural situations (subject to landholder/ Council agreement), where it will not pose a safety risk, to decompose naturally or mulched in other situations.

Where requested by the landholder, the mulch generated may be left on site to stabilise the site.

7.8 Noise mitigation

The Environment Protection Authority (EPA) regulates the maximum allowable noise levels for commercial and industrial activities in residential and regional areas across the state. This is undertaken in conjunction with local councils.

Vegetation management works will be carried out in a manner that will minimise any nuisance or annoyance to members of the public while achieving the objectives of the works.

Monitoring and review

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Monitoring and review

Commitment to stakeholders

We will keep you informed, listen to and acknowledge concerns and provide feedback on how your issues and concerns have influenced the decision or process

8.1 Independent monitoring and arbitration

The Energy Industry Ombudsman of South Australia is an independent industry body and will act as a mediator between the customer and SA Power Networks, if required.

In addition, SA Power Networks has established an Arborist Reference Group for Vegetation Management near Powerlines to provide expert and independent arboriculture and horticultural input into the development of SA Power Networks' long-term vegetation management strategy. The group is represented by TreeNet, the Botanic Gardens of South Australia, Arboriculture Australia, Trees for Life, the South Australia Tree Advisory Board, the nursery industry and Local Government, as well as expert individuals and a community/landholder representative. There is an opportunity for the role of this group to be expanded to provide independent advice or arbitration on vegetation management issues or disputes as required.

8.2 Customer feedback on vegetation clearance

SA Power Networks has developed a post clearance survey for residents/landowners to seek feedback on our current practices and improve our clearance outcomes.

Proactive vegetation management activities ensure vegetation is appropriately managed near overhead powerlines to mitigate bushfire risk, ensure community safety, maintain reliability of the electricity supply and meet legislative compliance. The work is highly visible to the community; minimising the visual impact while meeting legislated requirements is therefore important.

The proportion of all customer complaints received by SA Power Networks compared to those directly related to vegetation trimming has reduced from 16% in 2013 to approximately 5.6% in 2017. This indicates that vegetation is now managed more in line with community expectations.

Since 2016, between 200-500 residents/landholders across multiple council areas subject to upcoming vegetation have been surveyed to seek feedback on the level of satisfaction of residents and landholders with tree cutting and other related issues. The aggregated results for the overall satisfaction for vegetation clearance is shown below.

Customer responses 2016–17



The survey results show a relatively stable level of satisfaction over the limited timeframe for the targeted surveys with approximately 75% of customers surveyed either neutral or satisfied with the vegetation clearance. Whilst we recognise it is not a statistically valid survey due to the small sample size, the data provides us with a good understanding of community sentiment and feedback to work with our contractors to continually improve our practices.

Dissatisfaction with our clearance relates to visual amenity and 'butchering', perceived unnecessary pruning and site clean-up.

The future best endeavours target has been set at 80% aimed at improving on existing processes through consideration of the opportunities identified through customer feedback.

8.3 Contractor management

When complaints regarding contractor behaviour are reported to SA Power Networks these are followed up with the contractor (ie. leaving area untidy, property damage and access).

The contract for vegetation clearance details a number of specifications that the contractor needs to comply with. These include the requirement to prepare and lodge regular reports with SA Power Networks, including information on the cutting program and customer complaints. SA Power Networks also meets on a monthly basis (as a minimum) with the contractor to discuss the program and any particular issues.

Customer liaison

The vegetation contractor currently communicates and liaises with the public as part of the clearance work.

Skill levels for vegetation clearance staff and contractors

Councils and stakeholders have raised concerns regarding the quality of pruning and the minimum skill level required by contractors. There is a desire for vegetation clearance contractors to undertake pruning methods to a higher arboriculture standard.

To undertake vegetation clearance, cutting contractors are required to hold (or be obtaining) a Certificate Level II (as a minimum) in ESI Vegetation Control.

Under the new contract, all scopers are required to be working toward the achievement of a Certificate Level III (as a minimum) in Arboriculture or Horticulture within 12 months.

Training requirements

The Vegetation Clearance contract outlines a number of compulsory training requirements for our vegetation clearance contractor, including:

- All personnel engaged on SA Power Networks vegetation clearance programs have been trained and accredited to a minimum standard to work safely around overhead energised powerlines and clear vegetation to an acceptable industry standard and technique.
- The Contractor is required to maintain a register of the training and accreditation completed by each of their Personnel, along with expiry and reaccreditation dates.

SA Power Networks is proposing to develop an SA Power Networks Certification that will enhance the competence of clearance contractors and ensure that all vegetation management activities are uniform and of a high degree of competency.

The program would include an enhancement to the skills for the vegetation clearance contract cutters who hold or working toward a Certificate II ESI Vegetation Control. The proposed modules identified by stakeholders include:

- Native vegetation management/species specific awareness.
- Customer/stakeholder management.
- Advanced pruning techniques.
- Legislative requirements (refresher).

The training would improve the skills for vegetation contractors in dealing with customers, understanding our legislative impacts and recognising and managing the cutting of native flora.

SA Power Networks engaged ARO to deliver a module on 'perform pruning operations'. This module was delivered to all our contractors scopers in 2016 and all supervisors and cutters in 2017.

In 2018, following changes to the legislation in relation to hazard trees and sapling (offsets for removal), a training module has been developed for scopers and supervisors on hazard tree and sapling identification. The training will be rolled out in late 2018/early 2019.

8.4 Record keeping and practice

All customer complaints are tracked and monitored utilising SA Power Networks' CARE system. Through monthly reporting, SA Power Networks monitors complaint trends and identifies areas shown to be of the greatest concern by our customers.

A system to capture data is required to improve vegetation management data knowledge, enable effective strategic planning and improve future optimisation of the vegetation clearance program. In addition, a customer database is required to manage specific customer or landholder issues and requirements.

Monitoring and review

8.5 Auditing

Internal

SA Power Networks has a number of vegetation inspectors who audit clearance work by contractors year round.

External

To achieve continuous improvement, vegetation clearance is audited to demonstrate compliance against legislative requirements. SA Power Networks undertakes independent concurrent cyclic audits and pre-fire danger season audits to assess infringements into the clearance zone, as well as the potential for vegetation to bend or grow into the clearance zone before the next cyclic cut or during the fire danger season respectively. The audits assess the number of audit sites (eg. target Stobie pole location) and the number of conductor spans (eg. up to three spans each direction from the target Stobie pole).



Since 2012 there has been a significant improvement in vegetation clearance performance with the presummer span NCR rate being 0.5% for the past two years. Notwithstanding this, the audits include recommendations and priority for identified improvements to ensure SA Power Networks continuously improves the vegetation clearance practices to minimise bushfire risks and maintain reliability standards; the recent historical level of performance should be considered the minimum target.

8.6 Benchmarking

Benchmarking with other utility providers in Australia is important to understand interstate trends and improvements in vegetation management to ensure we continue to implement best practice vegetation management in South Australia.

Whilst the variability of environmental factors (eg. landscape, climate, regulations etc) makes benchmarking of vegetation management difficult, when compared to other distribution networks service providers SA Power Networks benchmarks well. SA Power Networks is amongst the lowest cost of all distributors on a 'per km' basis, and whilst higher on a 'per customer' basis, is well below the industry average cost trend line when measured against customer density².

2 AER, Annual Benchmarking Report Electricity distribution network service providers, November 2017

8.7 Research/trials

There is a need to keep up to date with technological improvements (ie. powerline covering and insulation) to understand options for managing vegetation near powerlines and undertake trials to test their effectiveness.

There is a need for research into cutting practices and how different trees respond to cutting (ie. species specific programs, cutting techniques and their impacts). There are opportunities to work with Universities and educational institutions and develop partnerships with Waite and the Botanic Gardens on tree knowledge and research and specific vegetation management projects.

LiDAR – Light detection and ranging technology

LiDAR is an optical remote sensing technology that builds up complex 3d terrain and vegetation models from either a ground or aerial based laser instrumentation. When coupled with aerial photographic imagery, the distribution network assets and surrounding terrain including vegetation data can be presented in a detailed 3D representation.

The use of LiDAR increase vegetation inventory data accuracy significantly however there is a cost benefit issue that needs to be considered prior to adoption. In addition, the data still needs to be imported into an appropriate management tool for analysis and strategic planning.

The tool is increasingly being used or trialled by utilities for works program scoping and prioritising, and performance and compliance auditing.

8.8 Protocol review and update

It is anticipated that this protocol will be reviewed every two to three years to promote opportunities for continual improvement on how we manage vegetation near powerlines and how we engage with our stakeholders. However, any interested parties may provide relevant comment and feedback on this protocol at any time by writing to:

Customer Relations SA Power Networks

GPO Box 77 Adelaide SA 5001 Email - customerrelations@sapowernetworks.com.au

The protocol will be reviewed in 2020–21.

Key actions and implementation

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Key actions and implementation

SA Power Networks currently undertakes a program of vegetation clearance in bushfire and non-bushfire risk areas. This program is funded out of revenue approved by the Australian Energy Regulator (AER) to comply with the legislative requirements.

To create a more sustainable environment that minimises the need for tree trimming over time, we are working to:

- Reduce tree trimming costs over the longer term.
 Improve visual outcomes through partnering and collaborating with councils; and
- Improve public education/awareness.

Key initiatives include:

- Trials with Councils to remove saplings and chemically regulate the growth of some trees species.
- Continue to work in partnership with Councils to improve clearance outcomes.
- Developing proposed amendments to the South Australian Vegetation Regulations to improve safety, reduce costs and deliver better community outcomes (with customer and stakeholder support).
- Developing processes to better assess the visual amenity, cost, and impact on tree health of different pruning or trimming techniques, in partnership with our vegetation clearance contractor and local council.
- Continuing a tree removal and replacement program to reduce the need for future tree trimming.

If an individual Council requires specific approaches for vegetation clearance that are above the baseline SA Power Networks clearance programs, Councils will need to contribute funding for their specific programs and needs. Furthermore, Councils also have the option to contribute to additional programs or take over trimming in full in their Council area (along with the associated liability).

SA Power Networks would also support proposals from Councils to introduce a different pruning regime or tree treatment as long as it meets our legislative and risk obligations.

Appendices

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Appendices

Appendix A – IAP2 Public participation spectrum

IAP2 Public participation spectrum

INCREASING LEVEL OF PUBLIC IMPACT						
Inform	Consult	Involve	Collaborate	Empower		
Public participation goal:	Public participation goal:	Public participation goal:	Public participation goal:	Public participation goal:		
To provide the public with balanced and objective information to assist them in understanding the problems, alternatives and/or solutions	To obtain public feedback on analysis, alternatives and/or decisions	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered	To partner with the public in each aspect of the decision, including the development of alternatives and the identification of the preferred solution	To place final decision- making in the hands of the public		
Promise to the public:	Promise to the public:	Promise to the public:	Promise to the public:	Promise to the public:		
We will keep you informed	We will keep you informed, listen to and acknowledge concerns and provide feedback on how public input influenced the decision	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision	We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible	We will implement what you decide		
Example tools:	Example tools:	Example tools:	Example tools:	Example tools:		
 fact sheets web sites open houses	 public comment focus groups surveys public meetings 	workshopsdeliberate polling	 citizen advisory committees consensus-building participatory decision-making 	 citizen juries ballots delegated decisions 		





Appendices

Appendix C – Examples of tree removal and replacement initiatives







Location: Echunga

Summary:

Remove woody, weedy growth; replace with indigenous species where appropriate

Key Details:

Partnership with: Council, NRM Board and local landowner support
Problem: Large spans of woody weeds
Number of trees: 28 spans at 4 locations
Species of problem: Mix of Ash, planted eucalypts, self-seeded Oak trees and saplings
Solution: Remove trees within 28 spans
Other information: Selective removal in number of spans – retained slow growing trees of value; Landowner engagement.



Location: Lockleys Pierson Street

Summary:

Removal of trees due to safety concerns and continued decline in condition

Key Details:

Partnership with: Council
Problem: Trees assessed as being in decline and presenting a risk to public safety
Number of trees: 8 (2 significant and 6 unregulated)
Species of problem trees: Eucalyptus (River Red Gums)
Solution: Council sought development approval to remove
Species of solution trees: NA
Other information: Council led consultation with local residents and stakeholders







Location:

One Tree Hill Johnson Road

Summary:

Remove inappropriate trees, reduce bushfire risk and replace with indigenous species

Key Details:

Partnership with: Council and NRM Board
Problem: Dense, weedy olive trees
Number of trees: 8 spans (400m) of dense vegetation
Species of problem trees: Olives and planted eucalypts
Solution: Replant with local indigenous species
Species of solution trees: Regeneration with local indigenous species suitable for planting under powerlines
Other information: Resident letterbox drop and on-site consultation





Riverton Main Road

Summary:

Replace inappropriate trees with trees suitable under powerlines

Key Details:

Partnership with: Council

Problem: Remove inappropriate trees (at the request of Council)

Number of trees: 14

Species of problem trees: Ash and Pine

Solution: Replaced with more appropriate species

Species of solution trees: Crepe Myrtles

Other information: Council facilitated consultation with community and approval from Riverton Management Group; Removal and replacement resulted in reduced clearance requirements – trees required ongoing clearance.







Location:

Verdun Onkaparinga Valley Road

Summary:

Removal of inappropriate trees and replacement with trees suitable under powerlines

Key Details:

Partnership with: Adelaide Hills Council

Problem: Removal of fast growing trees under powerlines (at the request of Council) Number of trees: 36

Species of problem trees: Ash

Solution: Removal and replacement with appropriate trees for location

Species of solution trees: 36 semi-mature (3-4m) Maples

Other information: Joint engagement with residents, improved streetscape in high amenity area, implementation of Council's Landscape Plan for Verdun (Stage 3).

Document Control

Revision	Details/Review Process	Date	Amended By
1	Original – Draft 1	October 2014	A Lewis
	Internal review	October 2014	
	LGA Working Group endorsement for consultation	November 2014	
	Arborist Reference Group endorsement for consultation	December 2014	
2	Final Draft for consultation	January 2015	A Lewis
	Council Information and Feedback Sessions	February 2015	
	LGA Board endorsement	May 2015	
3	Revised draft following stakeholder feedback	January 2016	A Lewis
	LGA Working Group endorsement	February 2016	
	Arborist Reference Group endorsement	February 2016	
4	Final Protocol	March 2016	A Lewis
5	Protocol reviewed	2018	A Lewis

