



TransGrid

Bushfire Risk Management Report

TransGrid - 2017

31st October 2017

Contents

1. Introduction	3
2. Climate Conditions	3
3. Statistical Reporting	5
4. TransGrid comments	8
4.1 TransGrid’s application of the asset defect categorisation	8
4.2 Commentary on Statistical Reporting Section 3	8
4.3 Bushfire Risk Management Actions	9
4.4 Audit Reports on the ENSMS	9
4.5 Compliance with any Direction from IPART	10

List of Tables

Table 1: Data on bushfire preparation works	5
Table 2: Bushfire starts and risk management	6
Table 3: Asset defects impacting bushfire risk	7
Table 4 Bushfire risk profile of open vegetation defects	8
Table 5 Bushfire risk profile of open asset defects across asset streams	9

List of Figures

Figure 1 Monthly maximum temperature in the state of NSW and ACT	3
Figure 2 Monthly rainfall in the state of NSW and ACT	4

1. Introduction

The Annual Bushfire Risk Management Report allows TransGrid to provide meaningful data to IPART and the broader community on bushfire risk mitigation programs as well as our performance in managing bushfire risk.

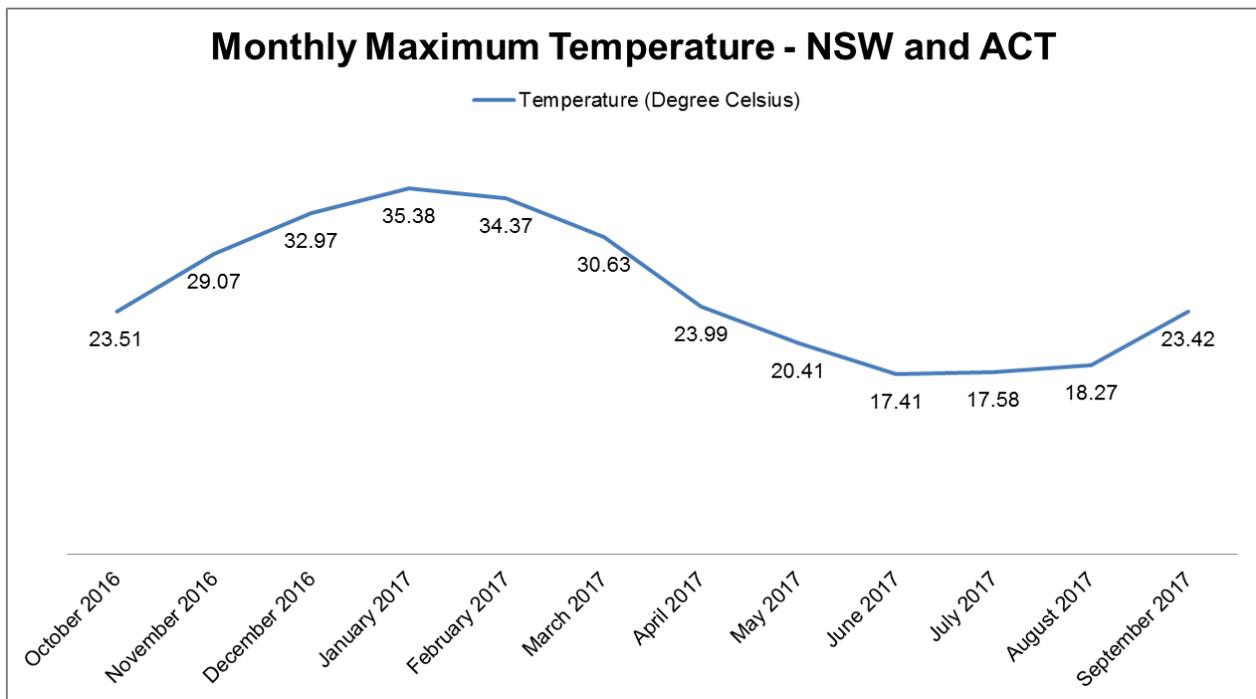
The report covers the 12 month period beginning at the commencement of the nominal bushfire season i.e. 1 October last calendar year through to 30 September 2017. The report must be submitted to IPART by 31 October 2017 and subsequently made available on TransGrid's website.

For the purpose of this document a bushfire is 'a general term used to describe fire in vegetation, including grass fire', as defined by the NSW Rural Fire Service¹.

2. Climate Conditions

Climate factors relating to bush fire risk include temperature, humidity, wind and the dryness of the landscape. These factors are reflected in Fire Danger Ratings and Total Fire Bans issued by the Rural Fire Service (RFS). Of these factors, historical data for maximum temperature is available from the Australian Government Bureau of Meteorology, as shown in Figure 1 and Figure 2.

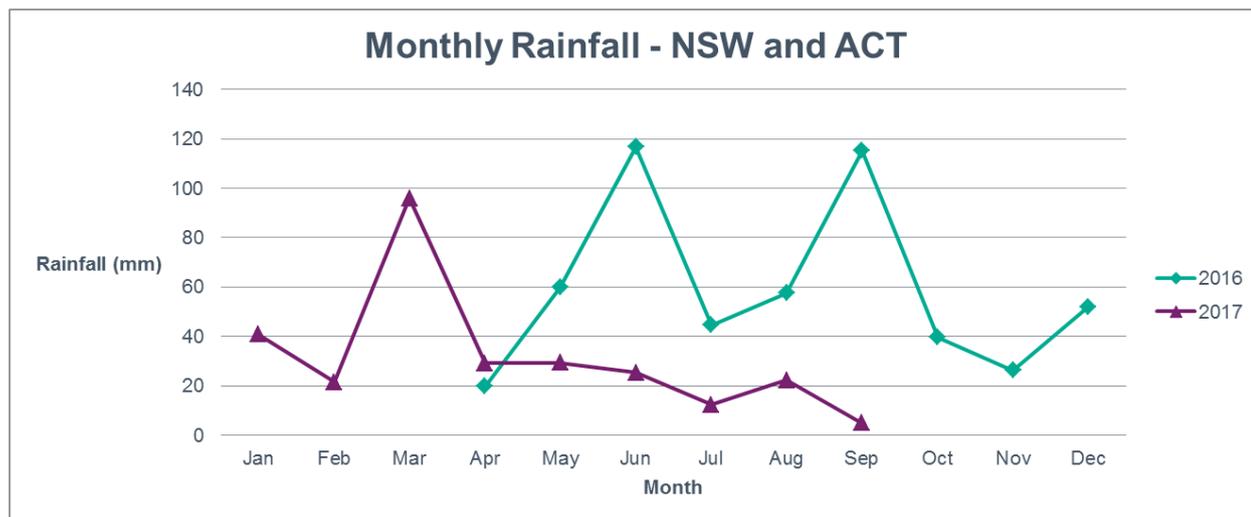
Figure 1 Monthly maximum temperature in the state of NSW and ACT²



¹ NSW Rural Fire Service, Dictionary/Terminology, <http://www.rfs.nsw.gov.au/plan-and-prepare/building-in-a-bush-fire-area/planning-for-bush-fire-protection/dictionary-terminology>, accessed 18 May 2016.

² Timeseries taken from <http://www.bom.gov.au/climate/change/#tabs=Tracker&tracker=timeseries>.

Figure 2 Monthly rainfall in the state of NSW and ACT



The increase in temperature heading into the bushfire danger period for 2017-2018, coupled with the lower rainfall during winter when compared to last year, indicates the potential for higher than average bushfire activity in summer 2017/18.

TransGrid notes the permanent change of the statutory start date of the bushfire danger period for some local government areas from 1 October to either 1 August or 1 September communicated by RFS.

TransGrid's Bushfire Risk Management Plan states that a bushfire risk assessment is to be completed on bushfire related maintenance work not completed at the start of the bushfire danger period. This is to account for the temporary variations (i.e. early start) of the bushfire danger period in some local government areas. Following the notification of the early start, this risk assessment was completed prior to 1 October and priorities for maintenance work adjusted where necessary. These processes were commenced early in response to the climatic conditions.

TransGrid has work practices that take into account the Fire Danger Ratings and Total Fire Bans issued by the Rural Fire Service. For example, Total Fire Ban notifications from RFS are forwarded to all field staff for their awareness when assessing the risk for work to be undertaken on a day-to-day basis, such as hot work. These work practices were commenced early in response to the climatic conditions.

As an additional response, there has been significant work by TransGrid in conjunction with the wider industry preparing for emergency events over summer related to both bushfire and other heat related risks. These include workshops, emergency exercises and protocol development with key stakeholders including AEMO, the Distribution Network Service Providers, RFS, Department of Planning and Environment and other Transmission Network Service Providers.

3. Statistical Reporting

This section provides statistics on the current bushfire season's risk management works as well as providing detail of outstanding works from previous seasons.

The statistics in this report have been prepared in accordance with TransGrid's Bushfire Preparedness Reporting Procedure and reviewed and signed off by the relevant managers.

Table 1: Data on bushfire preparation works

Criteria	Target this season	Actual this season	Outstanding from previous seasons	Actual from previous seasons
Line route length of the ENO's network inspected in bushfire prone areas within the reporting year.	6690km	6598km	0km	5,483 km
Private lines checked by the ENO's in pre-season inspections by the conclusion of the reporting year.	NA	NA	NA	NA
Number of HV customers ³ advised to undertake pre-season bushfire checks in accordance with ISSC 31 ^a .	NA	NA	NA	NA

^a New South Wales Department of Industry, *ISSC 31 Guideline for the Management of Private Overhead Lines*, 1 July 2004.

³ Although ISSC 31 is not directly applicable to TransGrid, as good business practice letters have been sent to directly connected HV customers to notify them of early start in bushfire danger period

Table 2: Bushfire starts and risk management

Criteria	Inside bushfire prone areas	Outside bushfire prone areas
Number of reported bushfire ignitions by private installations ^a (High Voltage and Low Voltage).	NA	NA
Number of reported bushfire ignitions by the ENO's electricity network.	2	3
Number of identified vegetation defects open at the conclusion of the reporting year within bushfire prone areas. ⁴	545	97
Number of directions for bushfire risk mitigation issued to private LV customers by the ENO that are outstanding as of 30 September.	NA	NA
Number of directions for bushfire risk mitigation issued to private LV customers by the ENO that are outstanding by more than 60 days.	NA	NA
Number of HV customers providing statements of compliance in accordance with ISSC 31 by 30 September.	NA	NA

^a A private installation has the same meaning as electrical installation as defined by the Electricity Supply Act 1995 (NSW).

⁴ For category based breakdown of the vegetation defects, please refer to Section 4.2.2.

Table 3: Asset defects impacting bushfire risk

Criteria	Inside bushfire prone areas				Outside bushfire prone areas			
	Cat 1 ^a	Cat 2 ^b	Cat 3 ^c	Cat 4 ^d	Cat 1 ^a	Cat 2 ^b	Cat 3 ^c	Cat 4 ^d
Number of identified asset defects impacting bushfire risk within bushfire prone areas that were open at the conclusion of the reporting year.	0	2	10	466	0	6	4	153
Number of directions for bushfire risk mitigation work on private land issued to LV customers by the ENO.	NA	NA	NA	NA	NA	NA	NA	NA

^a Category 1 Defects: Defects that pose a direct and immediate risk to the safety of the public/staff and requiring immediate rectification.

^b Category 2 Defects: Defects that pose a risk to the safety of the public/staff and require rectification with one month.

^c Category 3 Defects: Defects that pose a predictable future risk to the safety of the public/staff and require rectification within 6 months.

^d Category 4 Defects: Defects that pose a predictable future risk to the safety of the public/staff but can be rectified through planned maintenance.

4. TransGrid comments

4.1 TransGrid's application of the asset defect categorisation

TransGrid sets a required timeframe for completing rectification work on asset defects.

TransGrid maps the timeframe to the 4 categories identified defined by IPART in Table 3 of Section 3 as follows:

- > Category 1: TransGrid Priority 01 – Within 24 hours
- > Category 2: TransGrid Priority 02 – Within 1 month
- > Category 3: TransGrid Priority 03 – Within 3 months
- > Category 4: TransGrid Priority 04 – Within 12 months and Priority 05 – Next Outage/Maintenance

TransGrid has a procedure that explains how the values reported in Section 3 are identified as per the data collected by TransGrid.

4.2 Commentary on Statistical Reporting Section 3

4.2.1 Table 1 - Data on bushfire preparation works

The target line route length of network inspected on bushfire prone area land is determined by identifying the transmission lines on bushfire prone land that are scheduled for the required yearly aerial inspections of the network by 30 September.

At 30 September, 92km were not inspected by aerial inspections due to access or weather issues. Ground based inspections (compliance inspections) were substituted for the majority of these lines to mitigate this risk, with 1.1km remaining to be inspected. These are expected to be completed by 30 October 2017.

The criteria used to identify the target route length of network inspected was changed this reporting year to be based on the aerial inspections as this is considered the most suitable criteria to address this statistic. This has caused the difference in the targeted line inspection route length of the network compared to last year.

4.2.2 Table 2 - Bushfire starts and risk management

The two bushfire ignitions on bushfire prone area are due to the explosive failure of substation equipment that resulted in a grassfire immediately outside the substation fence but within the TransGrid property boundary. TransGrid's process for responding to fire at a substation limited the local grassfires from becoming a wider fire event.

Additional information on the risk profile of the reported open vegetation defects as at the end of the reporting period is provided in Table 4.

Category 3 vegetation defects are currently being completed on a prioritised risk basis and are expected to be rectified by 30th November 2017.

Category 4 vegetation defects will be programmed for completion as business as usual.

Table 4 Bushfire risk profile of open vegetation defects

Criteria	Inside bushfire prone areas				Outside bushfire prone areas			
	Cat 1	Cat 2	Cat 3	Cat 4	Cat 1	Cat 2	Cat 3	Cat 4
Number of identified open vegetation defects within bushfire prone areas that were open at the conclusion of the reporting year.	0	0	108	437	0	0	15	82

4.2.3 Table 3 - Asset defects impacting bushfire risk

Additional information on the bushfire risk profile per asset stream is provided in Table 5 to provide further granularity around the bushfire risk.

The open substation defect work orders in Category 2 are related to fire detection system defects which act as a mitigating secondary control to reduce bushfire consequence once a fire start has occurred. Thus, these open defect work orders do not pose high bushfire risk.

TransGrid has a risk based prioritisation process to manage the open asset defects to ensure the bushfire risk is managed as low as reasonably practicable.

Table 5 Bushfire risk profile of open asset defects across asset streams

Criteria	Inside bushfire prone areas				Outside bushfire prone areas			
	Cat 1 ^a	Cat 2 ^b	Cat 3 ^c	Cat 4 ^d	Cat 1 ^a	Cat 2 ^b	Cat 3 ^c	Cat 4 ^d
Substation	0	2	7	28	0	5	2	22
Transmission Line	0	0	3	438	0	1	2	131
Automation	0	0	0	0	0	0	0	0
Network Property	0	0	0	0	0	0	0	0

4.3 Bushfire Risk Management Actions

The following activities have been undertaken by TransGrid in preparation for the upcoming bushfire danger period:

- > TransGrid's Bushfire Risk Management Plan has been updated and implemented to provide further guidance on managing bushfire risk.
- > Asset defects have been prioritised in accordance with the guidelines in the Bushfire Risk Management Plan and the specific asset maintenance plans to ensure bushfire risk is addressed when identifying the priority of a defect work order.
- > Routine maintenance tasks have been completed in accordance with the maintenance plan.
- > Substation and radio repeater site buffer zones, gutters and compounds have been checked for any issues prior to the bushfire season.
- > A review of system adequacy for NSW for the expected summer peak loads has been undertaken with no significant issues identified. This review considered the expected demand / generation capacity, the risk associated with a credible contingency (losing key network elements) during peak times and the current availability and operational issues associated with critical network plant.
- > All operational systems used by the TransGrid control room are in place ahead of the bushfire season. These systems include the RFS Incident Control Online Notification (ICON) system which provides a real time interface on fire activity with the RFS and the Indji Watch spatial information system which provides rain, wind, lightning and storm tracking capability.
- > TransGrid has written to directly connected customers to notify them of the early start of the bushfire danger period, and the types of risk based activities they should consider within their installation.

4.4 Audit Reports on the ENSMS

The audit report on the Bushfire Formal Safety Assessment in April 2017 was completed during the reporting period, which identified no major or minor non compliances.

An audit on the implementation of the Bushfire Formal Safety Assessment specifically focussed on identifying, prioritising and rectifying defects that inform this report was commenced in September 2017. The final audit report is due for completion on 14 November.

TransGrid has updated its ENSMS audit plan for implementation in the 2017/18 financial year to improve the linkage with ENSMS audits and key bushfire risk controls identified in the Bushfire Formal Safety Assessment.

4.5 Compliance with any Direction from IPART

IPART issued an updated Notice of Direction in February 2017 following on from the Notice of Direction issued in December 2016. TransGrid has completed the work required in the February 2017 Notice of Direction. This work is currently being audited to meet the final requirements of the Notice of Direction.