



30 March 2015

Chris Pattas  
General Manager, Networks  
Australian Energy Regulator  
Level 35, 360 Elizabeth Street  
Melbourne Victoria 3000

Via email: [Chris.Pattas@aer.gov.au](mailto:Chris.Pattas@ aer.gov.au)

Dear Mr Pattas

**RE: Request for Fire Starts Report under clause 5 of the F-Factor Scheme Order 2011**

CitiPower Pty and Powercor Australia Ltd (the **Businesses**) refer to the Australian Energy Regulators' (**AER**) letter dated 27 August 2012, requesting the Businesses to submit fire starts reports to the AER by 31 March each year relating to the outcomes of the previous regulatory year.

The fire starts reports for CitiPower and Powercor Australia for 2014 are set out in Appendix 1 and Appendix 2 of this letter respectively.

It should be noted that the information contained in these reports is currently under external audit as per the Fire Factor Regulatory Information Notice (**RIN**), due to be submitted to the AER by 30 April 2015.

If you have any questions in relation to this submission, please do not hesitate to contact Wendy Cotton on 03 9683 4288 or via email [wcotton@powercor.com.au](mailto:wcotton@powercor.com.au).

Yours sincerely

Hannah Williams  
Manager Compliance & Projects

Attachments: 1 – CitiPower 2014 Fire Starts Table  
2 – Powercor Australia 2014 Fire Starts Table

Cc: David Chan (email: [David.Chan@aer.gov.au](mailto:David.Chan@ aer.gov.au))

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## Appendix 1 – CitiPower 2014 Fire Starts Report

### 1. An explanation of the definition of a fire start

The definition of a fire start used by CitiPower is in accordance with the Energy Safe Victoria (ESV) reporting guidelines. Please refer to the “ESV Distribution Electricity Safety Performance Guideline, April 2011”.

### 2. Summary (aggregate) tables showing the percentage and actual number of the fire starts in the following categories:

- a. Fire Hazard Rating assigned by the Country Fire Authority or Melbourne Fire Brigade under section 80 of the Electricity Safety Act 1998 (Vic)
- b. Element of the network that caused the fire, such as equipment type, feeder classification, voltage level

Note: A description/explanation of the equipment type, feeder classification etc should be also provided

CitiPower has summarised the data into tables showing the actual number and the percentage of fire starts in the following categories:

- Table 1: Country Fire Authority (CFA) Fire Hazard Rating
- Table 2: Bushfire Risk Area<sup>1</sup>
- Table 3: Feeder Classification<sup>2</sup>
- Table 4: Fire Start by ESV Category
- Table 5: Fire Start by Asset
- Table 6: Kind of Fire Start

**Table 1: Number of fire starts by CFA Fire Hazard Rating**

CFA Fire Hazard Rating (i.e. the weather condition on the day)	No. of Fires	% of Fires
Extreme	0	0.00
Severe	6	19.35
Very high	11	35.48
High	8	25.81
Low Moderate	3	9.68
Not available	3	9.68
<b>Total</b>	<b>31</b>	<b>100%</b>

Source: CitiPower

<sup>1</sup> CitiPower has defined this to be the “Hazardous Bushfire Risk Area” as per the definition in the Electricity Safety Act 1998

<sup>2</sup> Feeders classifications that were defined in the service target performance incentive scheme (STPIS) have been used by CitiPower and are as follows:

- **Central Business District (CBD):** A feeder supplying predominantly commercial, high-rise buildings, supplied by a predominantly underground distribution network containing significant interconnection and redundancy when compared to urban areas
- **Urban:** A feeder, which is not a CBD feeder, with actual maximum demand over the reporting period per total feeder route length greater than 0.3MVA/km

**Table 2: Number of fire starts by Bushfire Risk Area**

Bushfire Risk Area	No. of Fires	% of Fires
Low Bushfire Risk Area (LBRA)	31	100.00
<b>Total</b>	<b>31</b>	<b>100%</b>

Source: CitiPower

**Table 3: Number of fire starts by Feeder Classification**

Feeder Classification	No. of Fires	% of Fires
CBD	3	9.68
Urban	28	90.32
<b>Total</b>	<b>31</b>	<b>100%</b>

Source: CitiPower

**Table 4: Number of fire starts by ESV Category**

ESV Category	No. of Fires	% of Fires
Asset failures resulting in grass/vegetation fire	11	35.48
Grass/vegetation fires from assets (non-asset failures)	1	3.23
Asset failures resulting in asset fire (no grass/vegetation fire)	18	58.06
Any other Fire Start	1	3.23
<b>Total</b>	<b>31</b>	<b>100%</b>

Source: CitiPower

**Table 5: Number of fire starts by Asset**

Asset	No. of Fires	% of Fires
Pole and cross arm fire	7	22.58
Oil-filled plant	0	0
High Voltage (HV) Fuse	1	3.23
Any fire triggered by any asset failure caused by lightning	0	0
Fire starts in grass/vegetation resulting from animal contact with network assets	0	0
Fire starts in grass/vegetation resulting from trees contacting network assets	1	3.23

Asset	No. of Fires	% of Fires
Fire starts in grass/vegetation resulting from other causes (vehicle strikes, vandalism etc)	0	0
Other Assets <small>Refer to table 5.1 below for a breakdown of Other Assets</small>	21	67.73
Any additional fires, caused by any asset failure, not reported to the ESV and required to be reported by the f-factor Order	1	3.23
<b>Total</b>	<b>31</b>	<b>100%</b>

Source: CitiPower

**Table 5.1: Breakdown of fire starts by Other Assets**

Type of asset	No. of Fires	% of Fires
Low Voltage (LV) Service / Conductor	5	23.80
LV Insulation Piercing Connector (IPC)	3	14.29
LV Fused Overhead Line Connection Box (FOLCB) / Fuse Box	3	14.29
Street lighting lantern	4	19.05
LV Isolator	1	4.76
22kV transformer connections	3	14.29
HV cable joint	1	4.76
Cable-head pole flash over	1	4.76
<b>Total</b>	<b>21</b>	<b>100%</b>

Source: CitiPower

**Table 6: Number of fire starts by Kind of Fire Start**

Kind of Fire Start	No. of Fires	% of Fires
Started by any tree, or part of a tree, falling upon or coming into contact with a distribution system	1	3.23
Started by any person, bird, reptile or other animal coming into contact with a distribution system	1	3.23
Started by lightning striking a distribution system or a part of a distribution system	0	0
Started by any other thing forming part of or coming into contact with a distribution system	0	0
Otherwise started by a distribution system	29	93.54
<b>Total</b>	<b>31</b>	<b>100%</b>

Source: CitiPower

3. *A table of all fire starts – showing, in each case, the kind of fire start (as per the AER’s f-factor scheme determination), date, time, geographic location of the fire, and whether the fire was reported to the relevant authority.*

Please refer to Attachment 1 for the CitiPower 2014 Fire Starts Table. This table shows the kind of fire start (as per the AER’s f-factor scheme determination), date, time, geographic location of the fire, and whether the fire was reported to the relevant authority.

## Appendix 2 – Powercor Australia 2014 Fire Starts Report

### 1. An explanation of the definition of a fire start

The definition of a fire start used by Powercor Australia is in accordance with the Energy Safe Victoria (ESV) reporting guidelines. Please refer to the “ESV Distribution Electricity Safety Performance Guideline, April 2011”.

### 2. Summary (aggregate) tables showing the percentage and actual number of the fire starts in the following categories:

- c. Fire Hazard Rating assigned by the Country Fire Authority or Melbourne Fire Brigade under section 80 of the Electricity Safety Act 1998 (Vic)
- d. Element of the network that caused the fire, such as equipment type, feeder classification, voltage level

Note: A description/explanation of the equipment type, feeder classification etc should be also provided

Powercor Australia has summarised the data into tables showing the actual number and the percentage of fire starts in the following categories:

- Table 1: Country Fire Authority (CFA) Fire Hazard Rating
- Table 2: Bushfire Risk Area<sup>3</sup>
- Table 3: Feeder Classification<sup>4</sup>
- Table 4: Fire Start by ESV Category
- Table 5: Fire Start by Asset
- Table 6: Kind of Fire Start

**Table 1: Number of fire starts by CFA Fire Hazard Rating**

CFA Fire Hazard Rating (i.e. the weather condition on the day)	No. of Fires	% of Fires
Extreme	2	0.43
Severe	17	3.67
Very high	100	21.60
High	182	39.31
Low Moderate	100	21.60
Not available	62	13.39
<b>Total</b>	<b>463</b>	<b>100%</b>

<sup>3</sup> Powercor Australia has defined this to be the “Hazardous Bushfire Risk Area” as per the definition in the Electricity Safety Act 1998

<sup>4</sup> Feeders classifications that were defined in the service target performance incentive scheme (STPIS) have been used by Powercor Australia and are as follows:

- **Urban:** A feeder, which is not a CBD feeder, with actual maximum demand over the reporting period per total feeder route length greater than 0.3MVA/km
- **Rural short:** A feeder which is not a CBD feeder or urban feeder with a total feeder route length less than 200km
- **Rural long:** a feeder which is not a CBD or urban feeder with a total feeder route length greater than 200km

Note: no definition of sub transmission is included in the STPIS.

Source: Powercor Australia

**Table 2: Number of fire starts by Bushfire Risk Area**

Bushfire Risk Area	No. of Fires	% of Fires
High Bushfire Risk Area (HBRA)	265	57.24
Low Bushfire Risk Area (LBRA)	198	42.76
<b>Total</b>	<b>463</b>	<b>100%</b>

Source: Powercor Australia

**Table 3: Number of fire starts by Feeder Classification**

Feeder Classification	No. of Fires	% of Fires
Urban	77	16.63
Rural short	105	22.68
Rural long	272	58.75
Sub transmission	8	1.73
Unclassified <sup>5</sup>	1	0.21
<b>Total</b>	<b>463</b>	<b>100%</b>

Source: Powercor Australia

**Table 4: Number of fire starts by ESV Category**

ESV Category	No. of Fires	% of Fires
Asset failures resulting in grass/vegetation fire	115	24.84
Grass/vegetation fires from assets (non-asset failures)	61	13.17
Asset failures resulting in asset fire (no grass/vegetation fire)	284	61.34
Any other Fire Start	3	0.65
<b>Total</b>	<b>463</b>	<b>100%</b>

Source: Powercor Australia

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<sup>5</sup> fire event occurred within a Zone Substation

**Table 5: Number of fire starts by Asset**

Asset	No. of Fires	% of Fires
Pole and cross arm fire	262	56.59
Oil-filled plant	3	0.65
High Voltage (HV) Fuse	32	6.90
Any fire triggered by any asset failure caused by lightning	13	2.81
Fire starts in grass/vegetation resulting from animal contact with network assets	26	5.62
Fire starts in grass/vegetation resulting from trees contacting network assets	25	5.40
Fire starts in grass/vegetation resulting from other causes (vehicle strikes, vandalism etc)	10	2.16
Other Assets <small>Refer to table 5.1 below for a breakdown of Other Assets</small>	89	19.22
Any additional fires, caused by any asset failure, not reported to the ESV and required to be reported by the f-factor Order	3	0.65
<b>Total</b>	<b>463</b>	<b>100%</b>

Source: Powercor Australia

**Table 5.1: Breakdown of fire starts by Other Assets**

Type of asset	No. of Fires	% of Fires
HV Conductor	16	17.98
Low Voltage (LV) Service / Conductor	14	15.74
LV Insulation Piercing Connector (IPC)	1	1.12
LV Fused Overhead Line Connection Box (FOLCB) / Fuse Box	40	44.95
Street lighting lantern	7	7.87
LV Isolator	5	5.62
LV Pillar	1	1.12
22kV Transformer flash-over	1	1.12
LV Service Pit	1	1.12
22kV Switch flash-over	1	1.12
22kV pole flash-over	1	1.12



Type of asset	No. of Fires	% of Fires
Transformer LV bushing flash-over	1	1.12
<b>Total</b>	<b>89</b>	<b>100%</b>

Source: Powercor Australia

**Table 6: Number of fire starts by Kind of Fire Start**

Kind of Fire Start	No. of Fires	% of Fires
Started by any tree, or part of a tree, falling upon or coming into contact with a distribution system	25	5.40
Started by any person, bird, reptile or other animal coming into contact with a distribution system	29	6.26
Started by lightning striking a distribution system or a part of a distribution system	13	2.81
Started by any other thing forming part of or coming into contact with a distribution system	10	2.16
Otherwise started by a distribution system	386	83.37
<b>Total</b>	<b>463</b>	<b>100%</b>

Source: Powercor Australia

3. *A table of all fire starts – showing, in each case, the kind of fire start (as per the AER’s f-factor scheme determination), date, time, geographic location of the fire, and whether the fire was reported to the relevant authority.*

Please refer to Attachment 2 for the Powercor Australia 2014 Fire Starts Table. This table shows the kind of fire start (as per the AER’s f-factor scheme determination), date, time, geographic location of the fire, and whether the fire was reported to the relevant authority.

The total number of fire starts being reported by Powercor Australia under the f-factor scheme for 2014 is above the benchmark or average number of fire starts identified during the formulation of the scheme. The major contributor for the fire starts this year was pole/cross arm fires which occurred during February 2014. In that month, the environmental conditions provided ideal conditions for the ignition of pole/cross arm fires, with temperatures well above the long term average coupled with well below average rainfall creating considerable accumulation of dust and other pollutants. Light rain and mist interspersed through this period without any steady rain events to wash the dust and pollutants away, caused electrical leakage as a result of the addition of moisture to the contaminants on a small number of days resulting in the ignition of pole/cross arm fires.

Of the 463 fire starts reported for the year, 262 were categorised as pole/cross arm fires with 133 of these occurring during specific weather conditions experienced over a small number of days during February 2014.

The Business has conducted significant analysis into pole/cross arm fires over a number of years and has, in place, a number of mitigation strategies. In general, assets are susceptible to pole/cross arm fires under specific environmental conditions which occur from time to time. These conditions include the presence of moisture which reduces the direct consequences of a fire started in this way. Pole/cross arm fires are not

usually associated with extreme fire danger days and in fact most do not burn material on the ground. Irrespective of the reduced consequences, the Business takes the ongoing reduction of these events very seriously.

The replacement of high voltage (**HV**) wooden cross arms with steel equivalents has proven to be the most effective long term strategy for the Business to mitigate pole/cross arm fires. Steel cross arms are used to replace HV wooden cross arms when the asset requires replacement as a result of a condition assessment undertaken during the cyclic inspection program. Steel HV cross arms currently make up approximately 79% of the total population of HV cross arms on the Powercor Australia network.