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**E**lectrical  
**R**egulatory  
**A**uthorities  
**C**ouncil

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## **Electrical Fatal Incident Data**

**Australia & New Zealand 2020 - 2021**

## **This Report covers:**

- Definitions
- Summary of 2020-2021 year
- Trend Analysis
- Series of graphs & tables for data supplied covering the period 1 July 2000 to 30 June 2021
  1. Regional fatalities
  2. Fatalities involving network assets
  3. Fatalities involving consumer installations and equipment
  4. Tables - fatal electrical accidents since July 2000
  5. Tables - summary of electrical fatality reports 2020-21

## **Definitions**



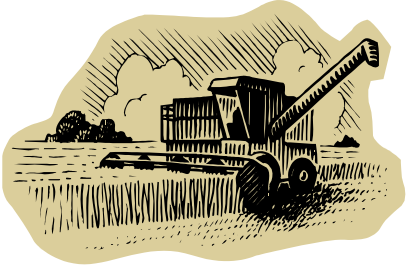
|  |  |
|--|--|
| <b><i>“Consumer installation”</i></b>            | All parts of an electrical installation past the point of supply on the consumer side.   |
| <b><i>“Distribution or supply equipment”</i></b> | Equipment used in the generation, transmission, supply or distribution of electricity.   |
| <b><i>“Electrical fatal incident”</i></b>        | Any fatal event that results from an electrical shock, electrical burn or electrical arc burn except if linked to the initial event of a natural disaster, criminal activity or suicide. |
| <b><i>“Electrical worker”</i></b>                | A person who carries out electrical work and is licensed or authorised to do so.   |
| <b><i>“General public”</i></b>                   | A person who is not doing any work as part of his or her employment or under a contract of work, or training at the time the incident occurs   |
| <b><i>“Misuse/Interference”</i></b>              | To damage, mishandle or use equipment in a way that it is not intended, or for what it is designed.  |
| <b><i>“Non-electrical Worker”</i></b>            | A person who is in the process of carrying out their occupation and is not an electrical worker.   |
| <b><i>“Supply worker”</i></b>                    | A person who is employed by a network operator.  |
| <b><i>“Work practice”</i></b>                    | The process or method by which work is carried out.  |

## Summary of 2020-2021 year

This report covers the 12-month period from 1 July 2020 to 30 June 2021. It is based on details of incidents reported to electrical safety regulators in Australia and New Zealand.

Sixteen electrical deaths from 16 incidents were recorded in Australia and New Zealand in 2020-21. This is equivalent to 0.52 deaths per million people (dmp) which is 0.11 dmp higher the last year.

Eight of twelve deaths occurred in Australia.

|  |   |
|--|---|
|  <p>Contact with one wire<br/>22,000V Powerline<br/>12,700V<br/>10,000V<br/>8,000V<br/>6,000V<br/>4,000V<br/>2,000V</p> | <p><b>There was a single distribution network related death caused by electrical accidents.</b></p> <p><b>This death was associated with overhead conductor.</b></p>        |
|    | <p><b>Fifteen deaths caused by fifteen incidents involving customers' installations or appliances or equipment.</b></p>   |
|   | <p><b>Of the total sixteen people who were electrocuted, 31% (5 of 16) were electrical workers, 38% (6) non-electrical workers and 31% (5) were the general public.</b></p> |

## Trend Analysis

Electrical fatality information from the past 21 years (2000-01 to 2020-21) has been analysed for trends and frequency.

The electrical deaths over 21 years continue to show a decrease from an average (three years) of 1.79 deaths per million people (dmp) in 2000-01 to 0.47 dmp in 2020-21. An average rate of reduction is 0.06 dmp per year.

In Australia, the reduction is from 1.87 to 0.45 (0.07 per year) dmp, while for New Zealand the reduction is from 1.39 to 0.60 (0.04 per year).

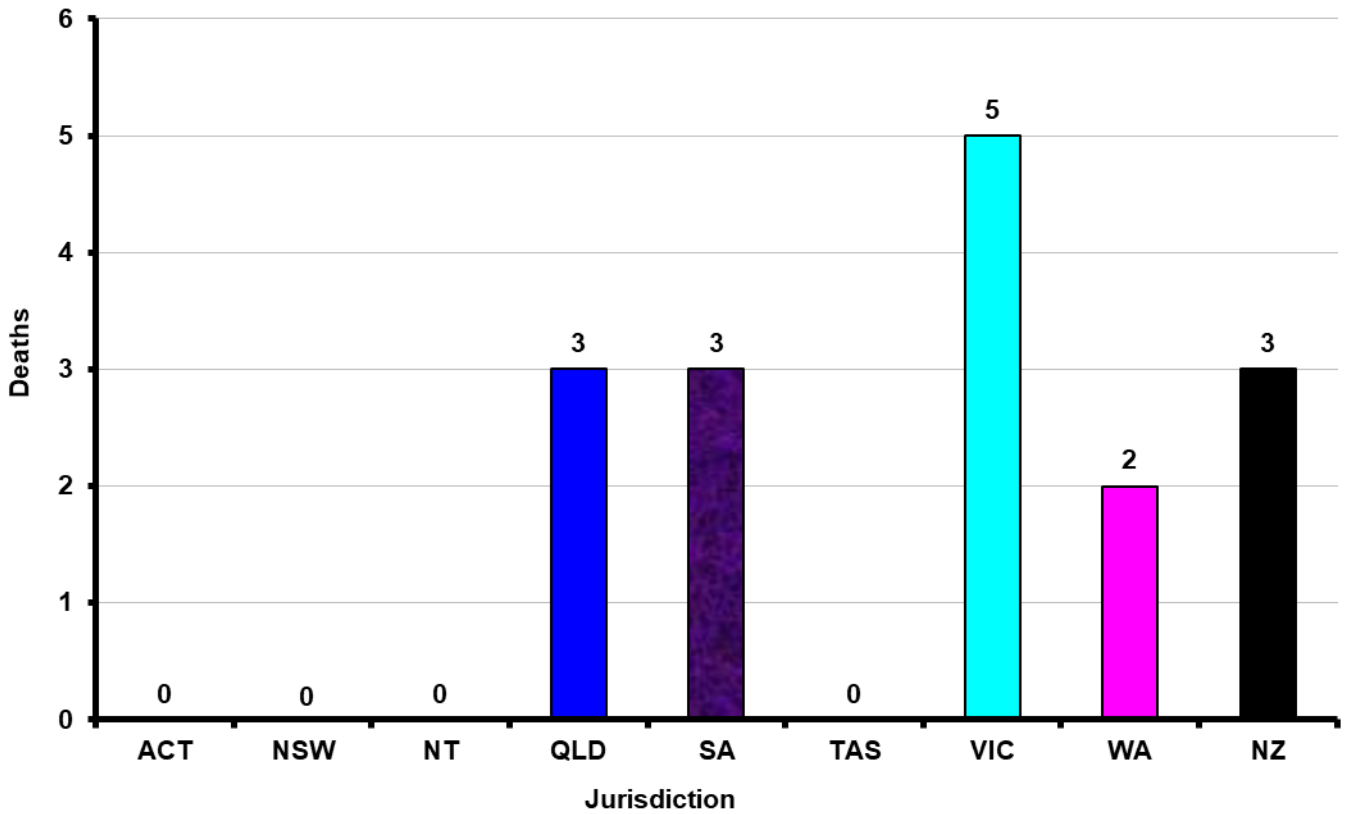
Most electrical deaths associated with electricity networks were as a result of working on or near energised overhead conductors. 90% (124 of 138) of electrical deaths associated with electricity supply networks involved overhead conductors.

Consumer appliances/equipment were involved in a little over twice (278) the number of deaths than the electricity supplier assets (138). Also, there was a large variation in the number of deaths involving consumer equipment from one year to the next than in deaths involving electrical supplier assets. The dmp continued to decline over the last 21 years for both consumer and supplier assets.

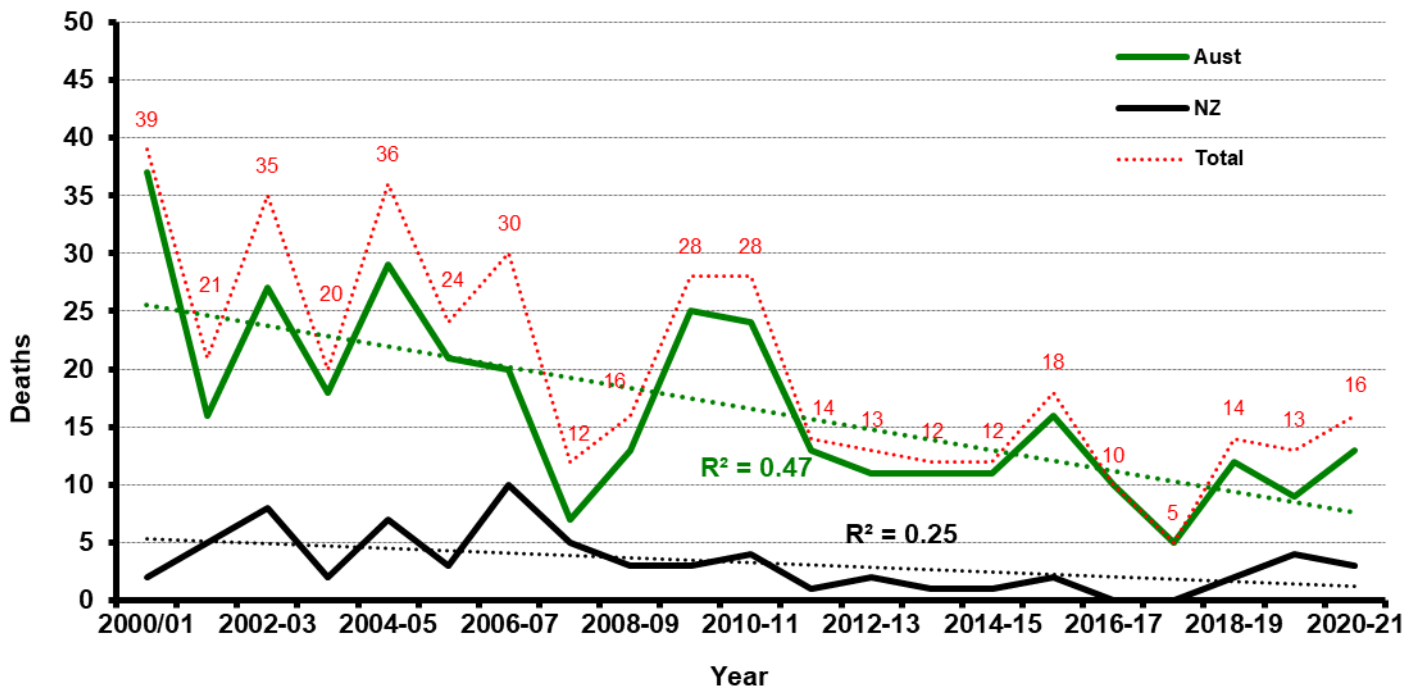
**This report presents the information in a series of charts and tables.**

# 1. Regional fatalities

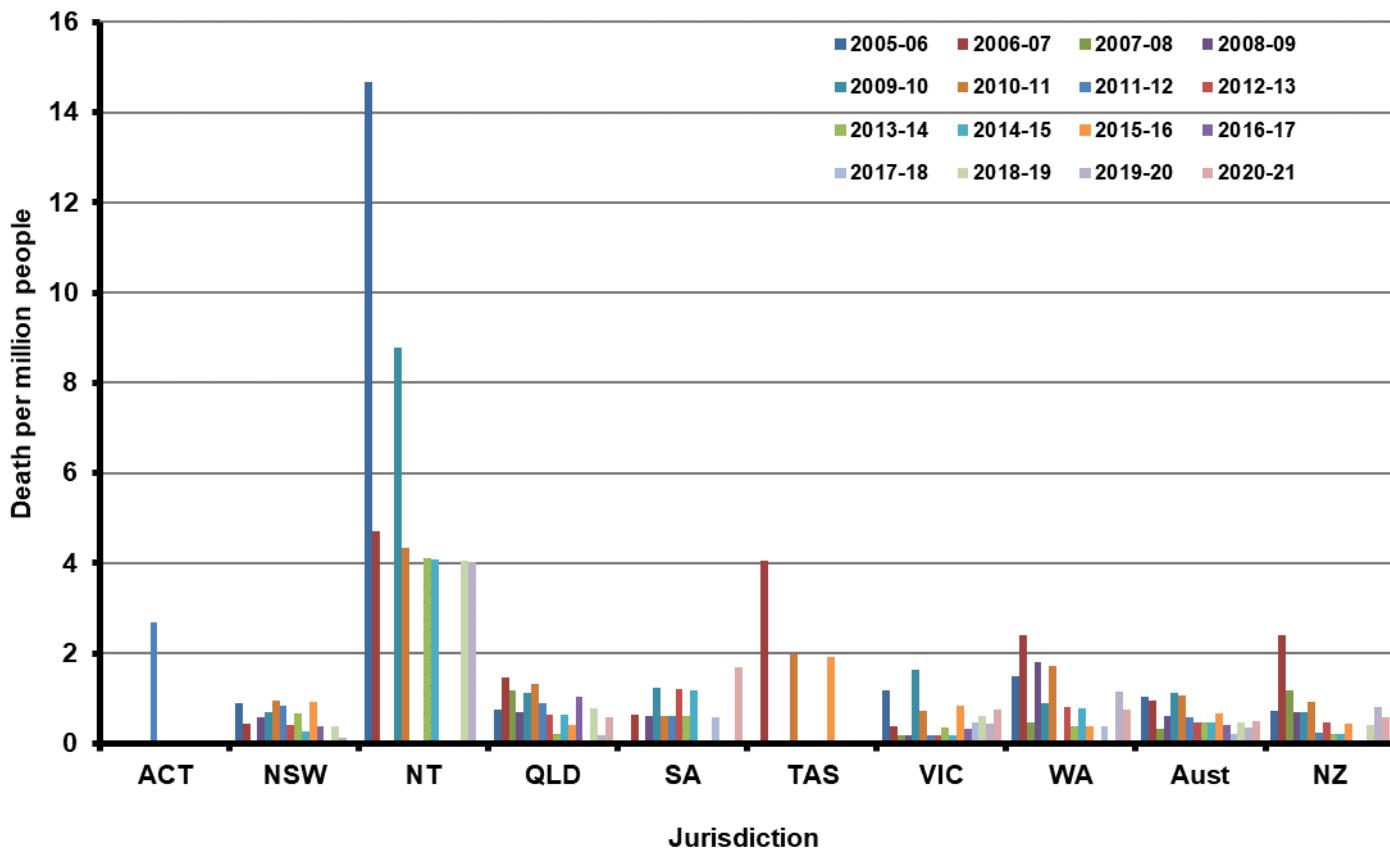
GRAPH 1.1 Electrical deaths in Australia and New Zealand – 2020-21



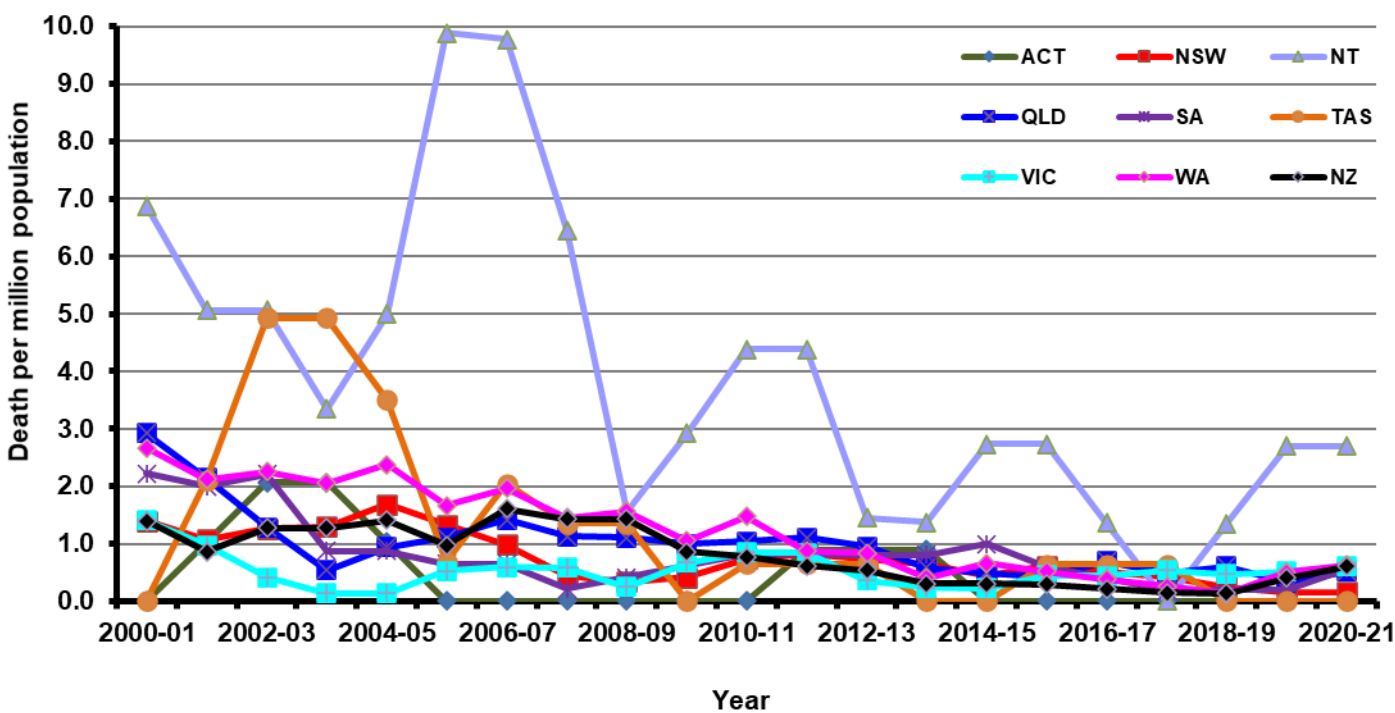
GRAPH 1.2 Number of electrical deaths in Australia and New Zealand



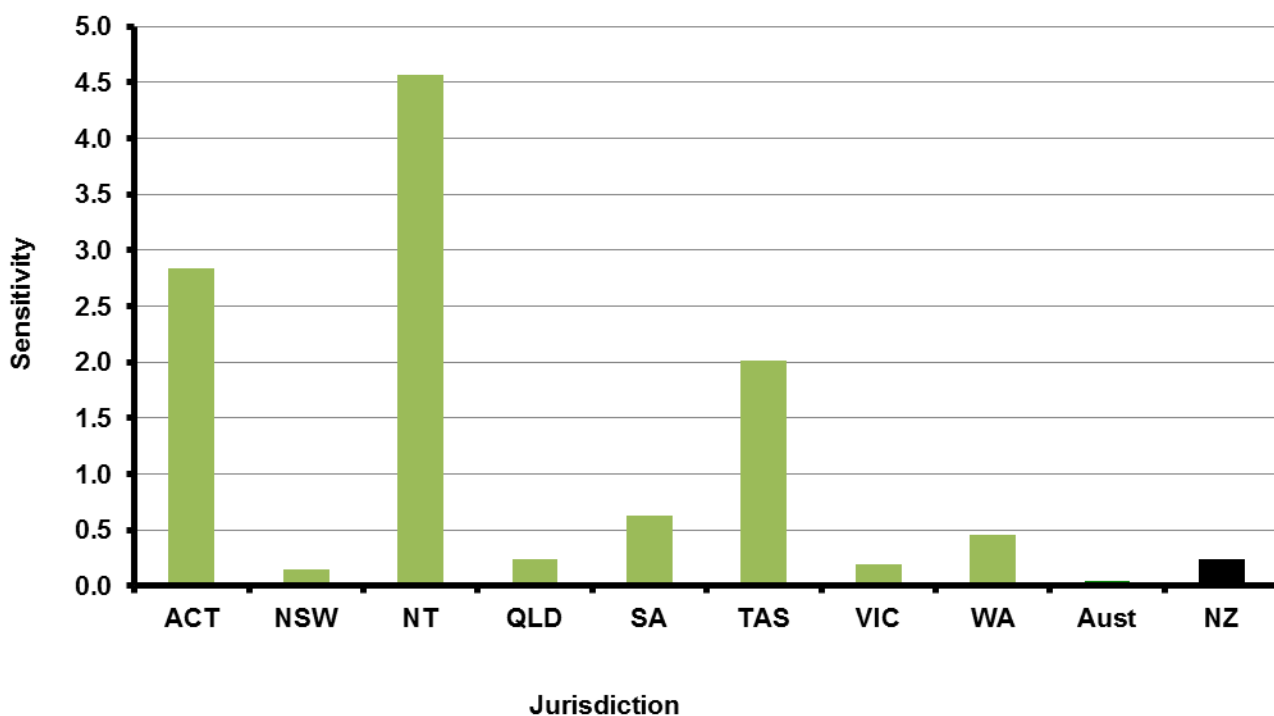
**GRAPH 1.3 Electrical deaths per million people from 2005-06**



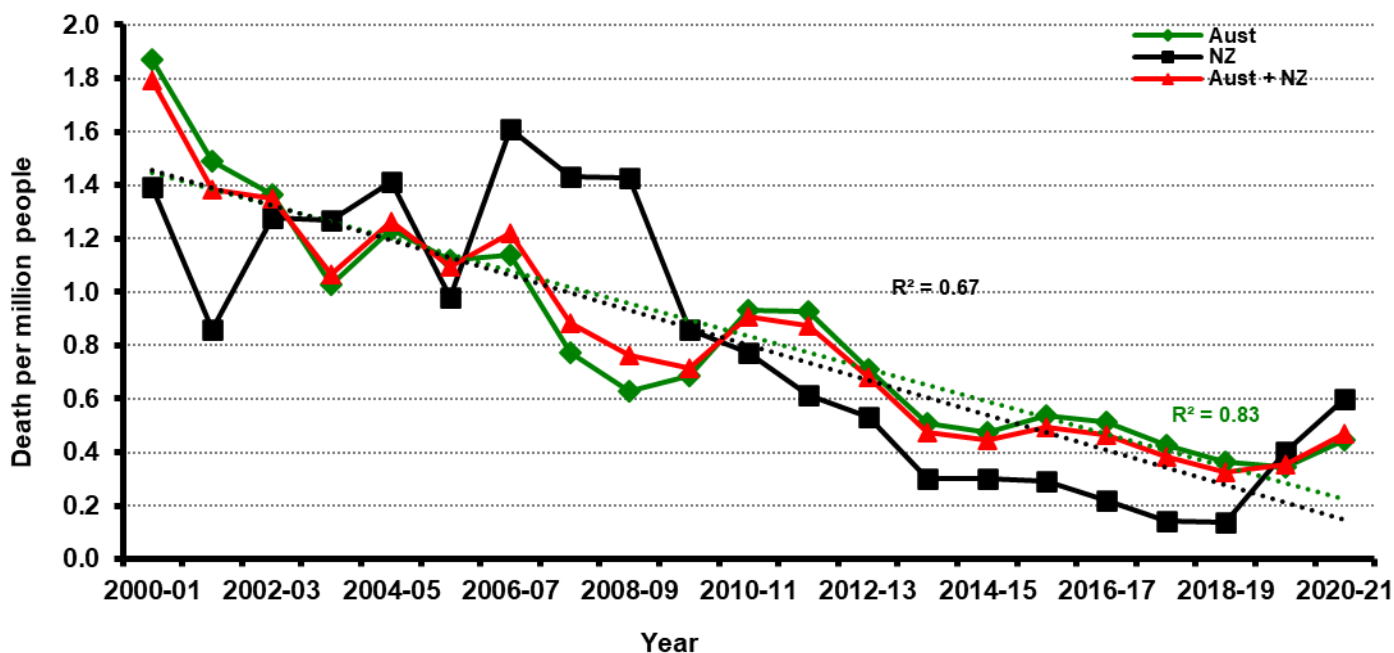
**GRAPH 1.4 Trend in electrical deaths (three year moving average per million people)**



**GRAPH 1.5 Sensitivity analysis for fatality rate**

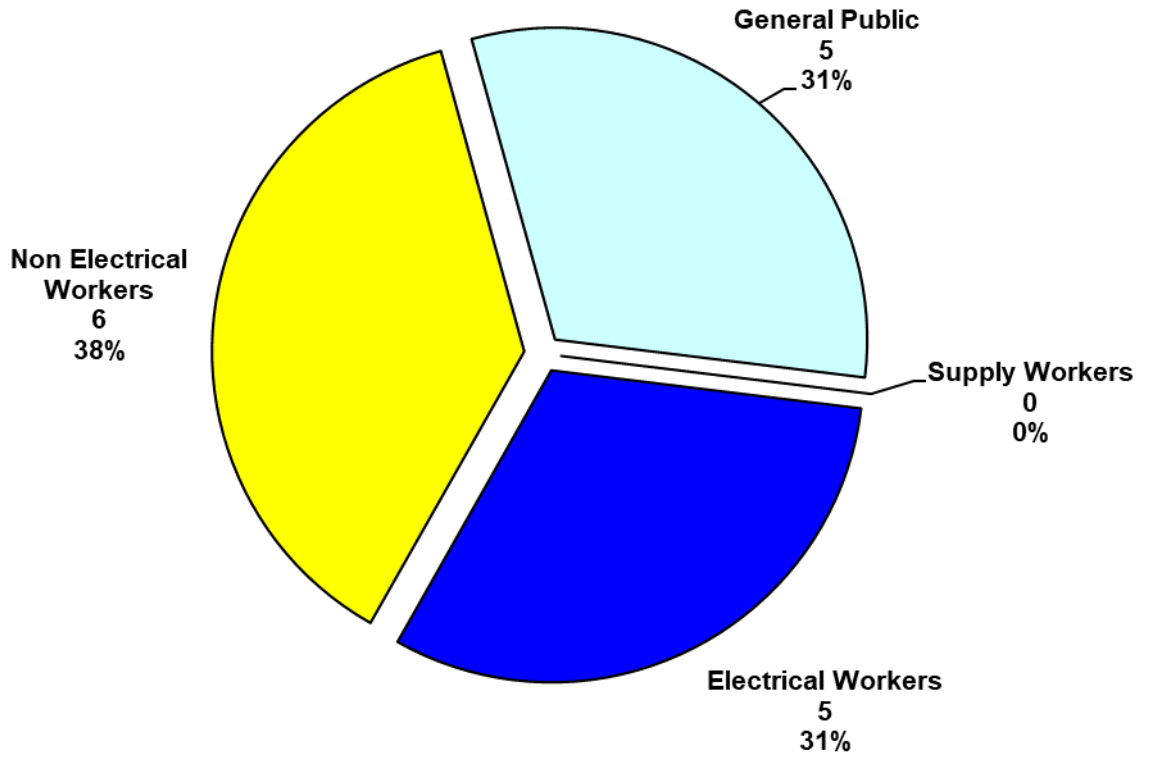


**GRAPH 1.6 Trend in electrical deaths (three year moving average per million population) in Australia and New Zealand**

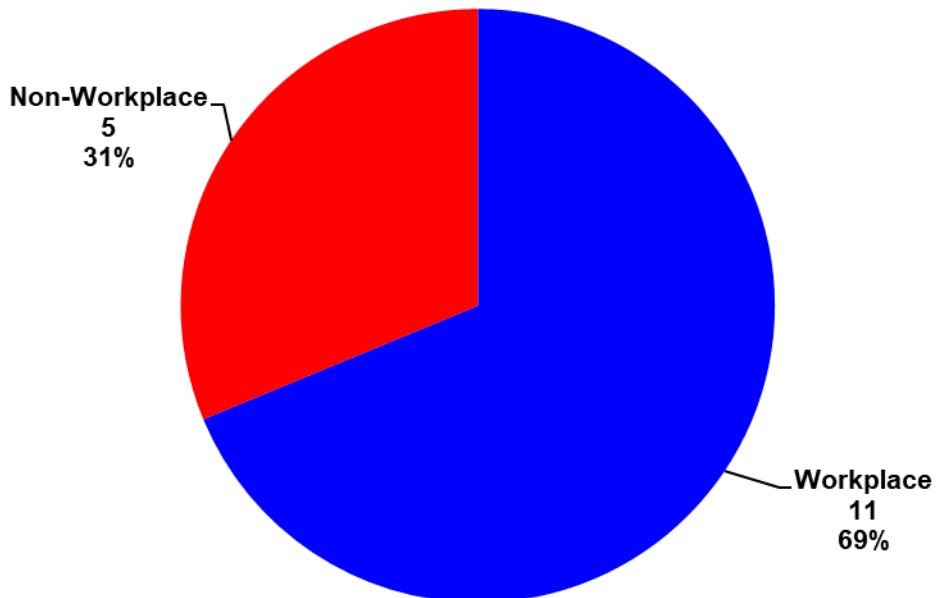


**GRAPH 1.7 Australia and New Zealand victim categories – 2020-21**

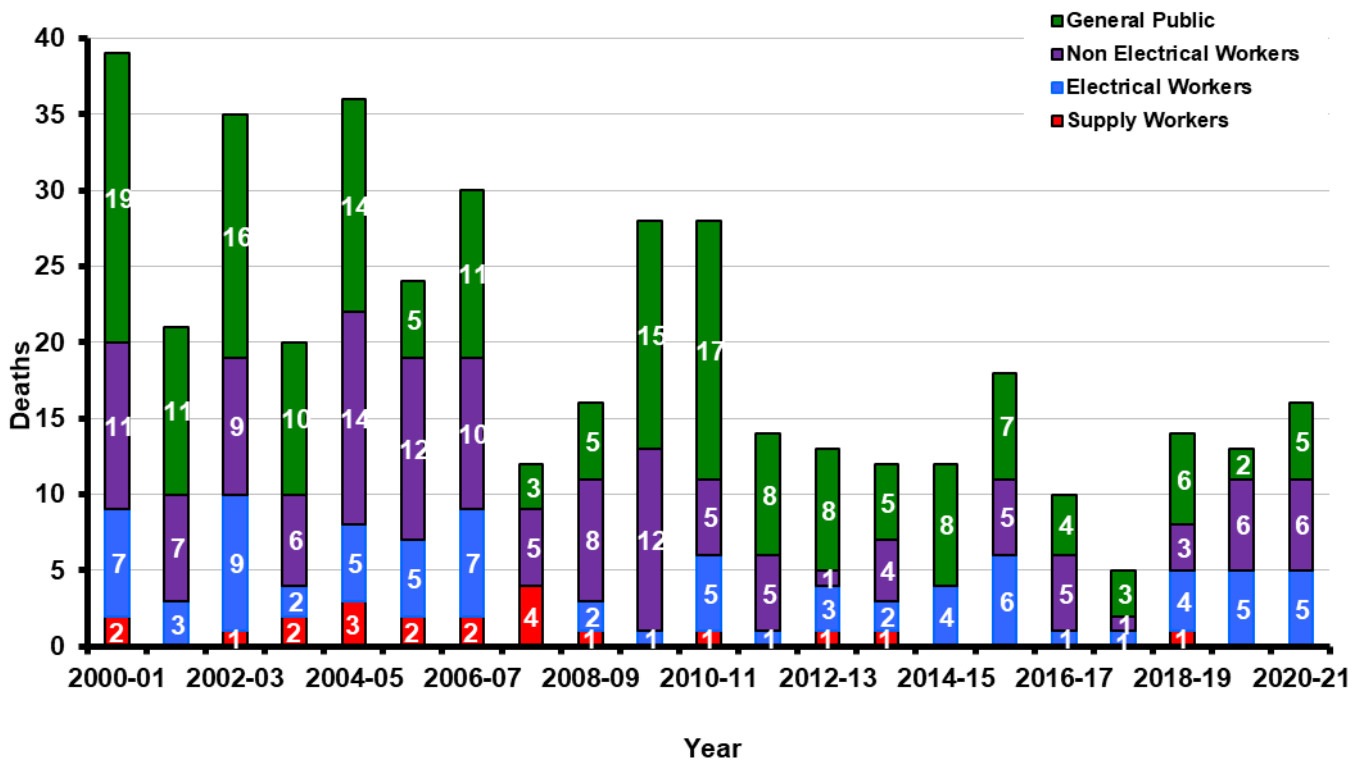




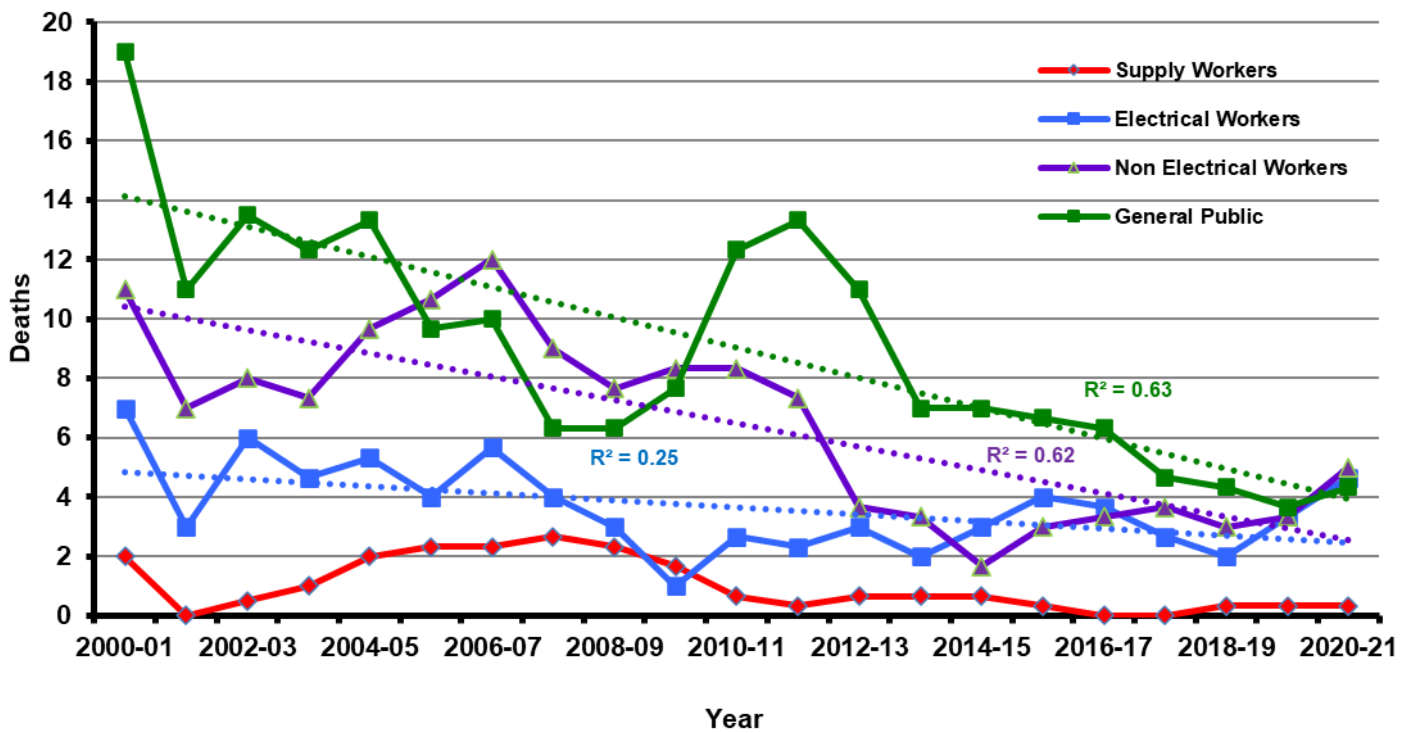
**GRAPH 1.8** Electrical deaths: workplace versus non-workplace – 2020-21



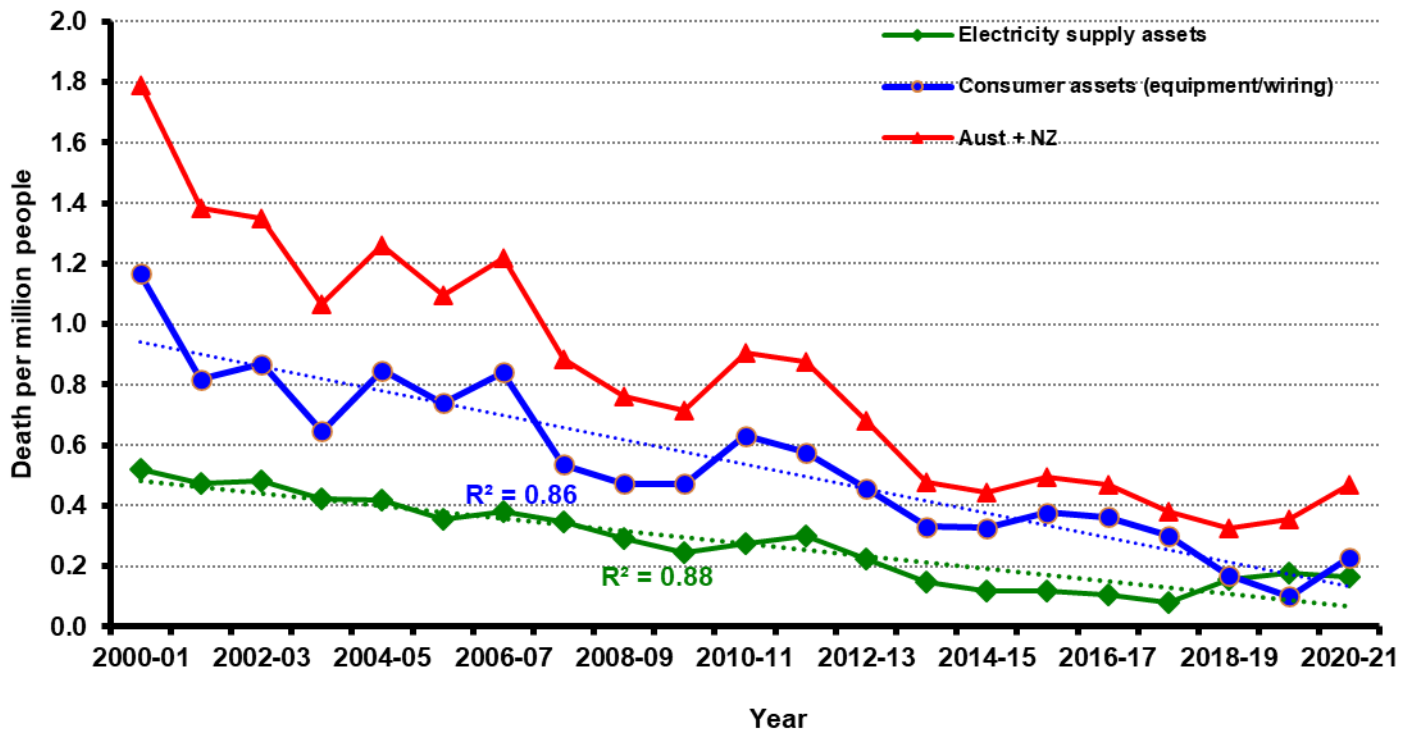
**GRAPH 1.9** Electrical deaths sorted by victim categories



GRAPH 1.10 Trends by victim categories with three year moving average

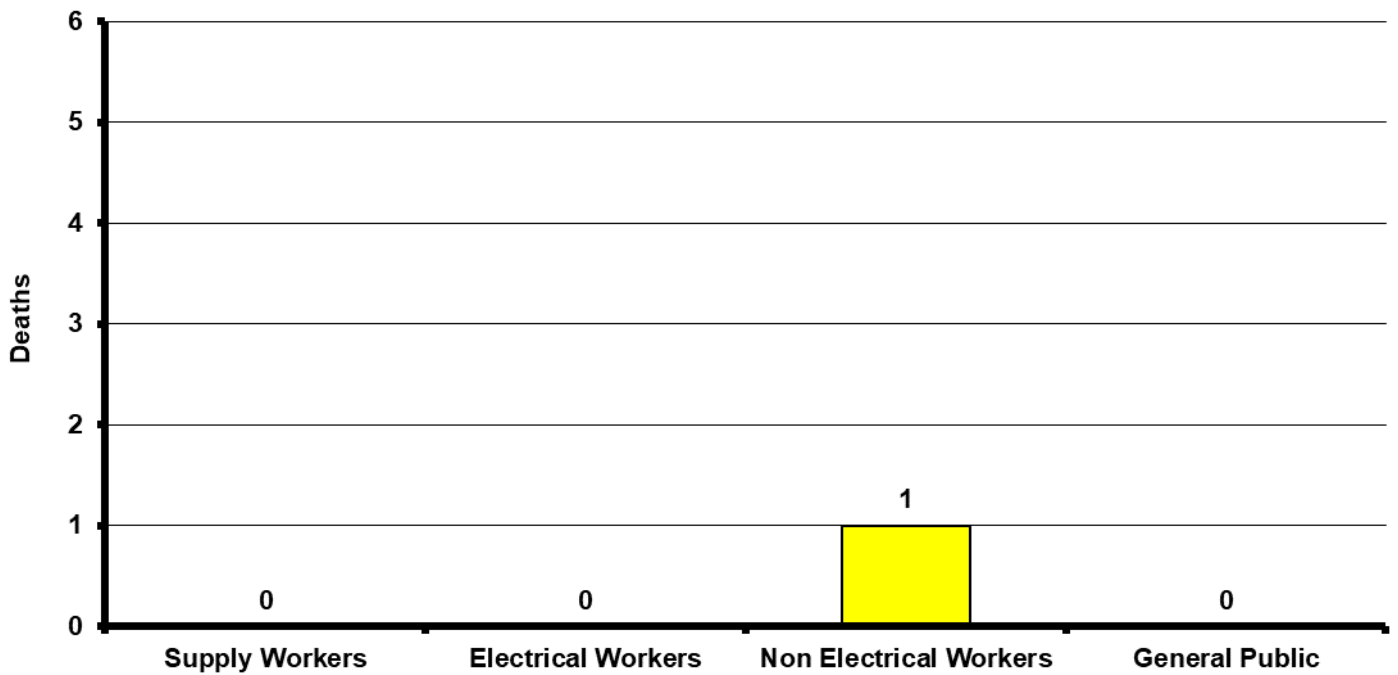


GRAPH 1.11 Trends by asset Type with three year moving average

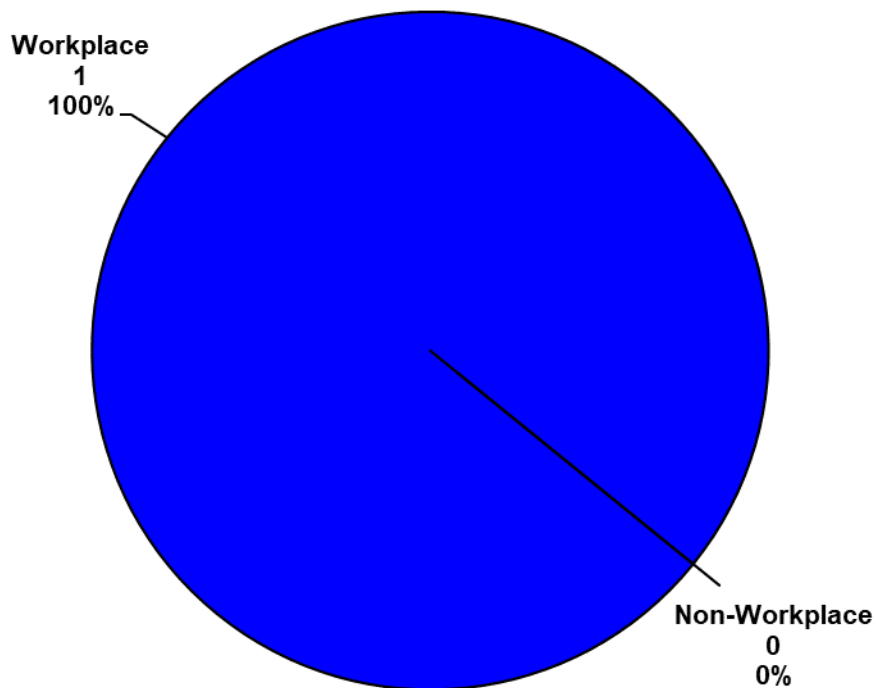


## 2. Fatalities involving network assets

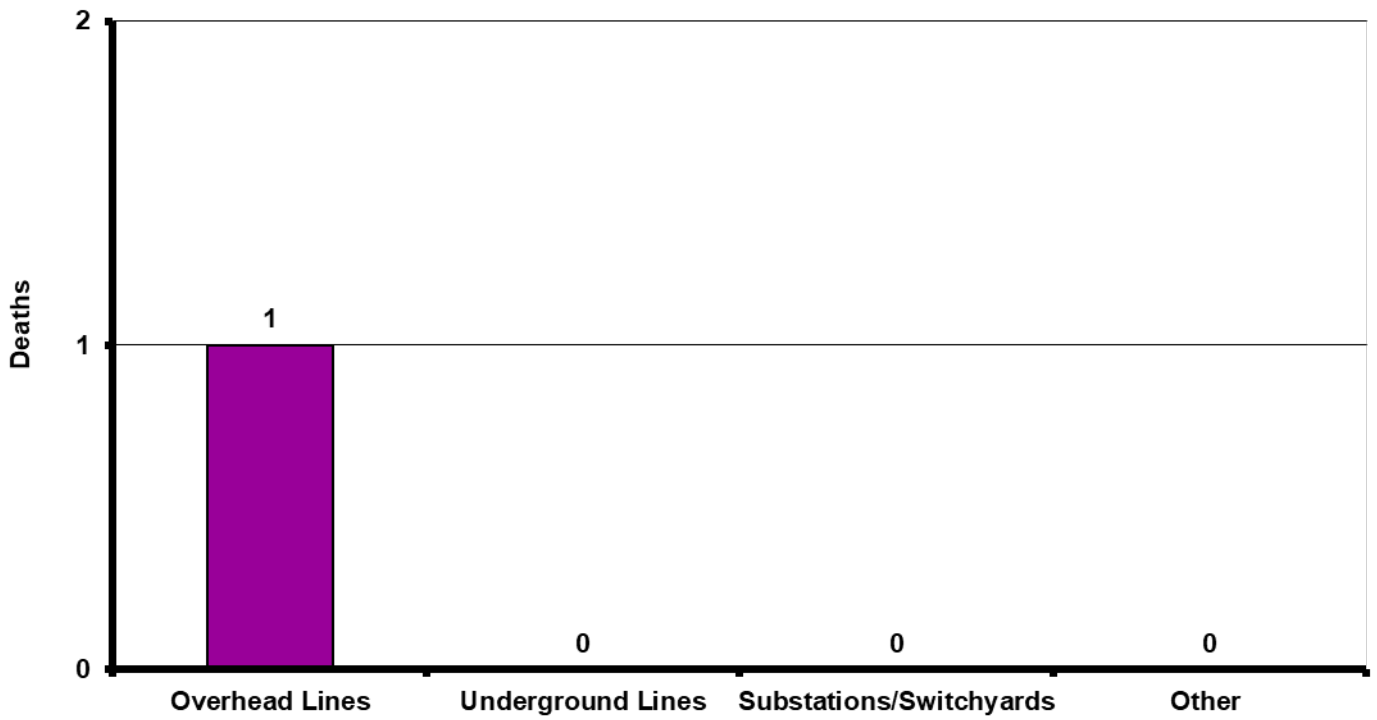
GRAPH 2.1 Deaths Involving electricity supply assets sorted by victim categories – 2020-21



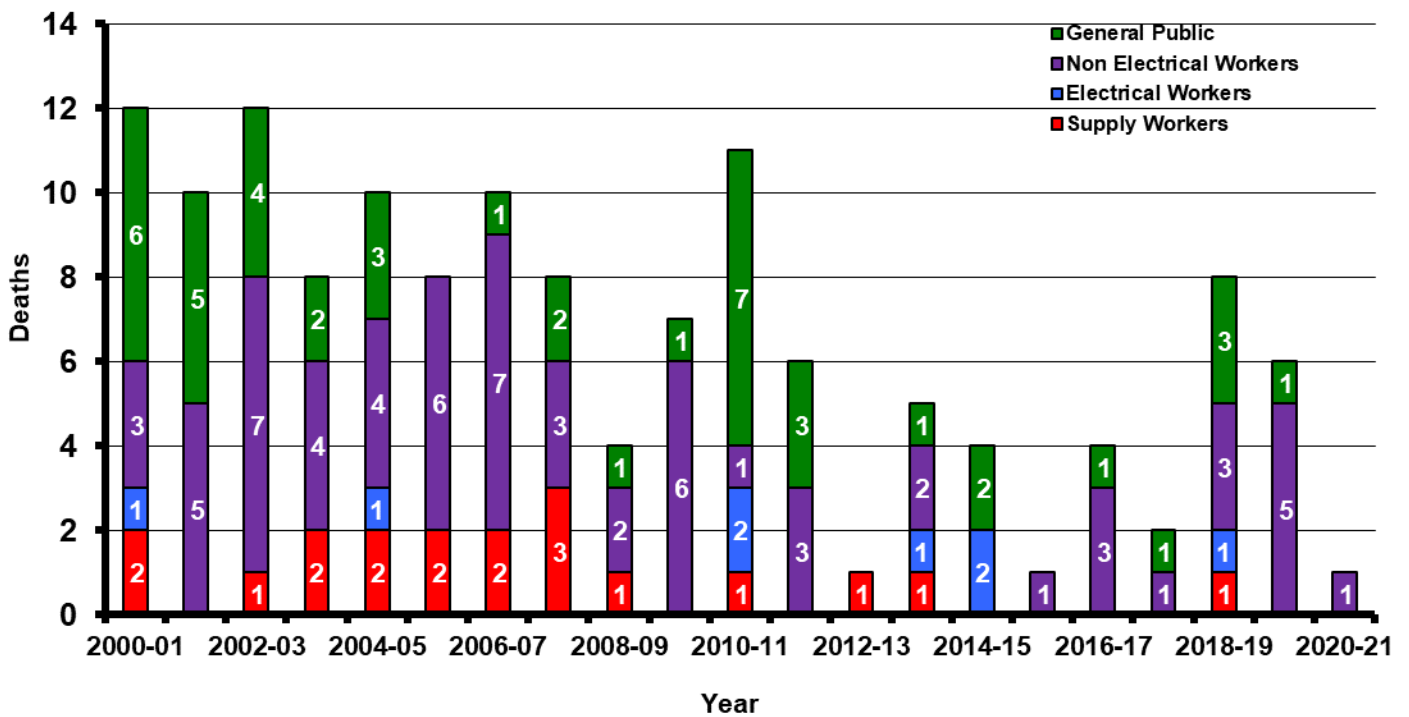
GRAPH 2.2 Deaths involving electricity supply assets: workplace versus non-workplace – 2020-21



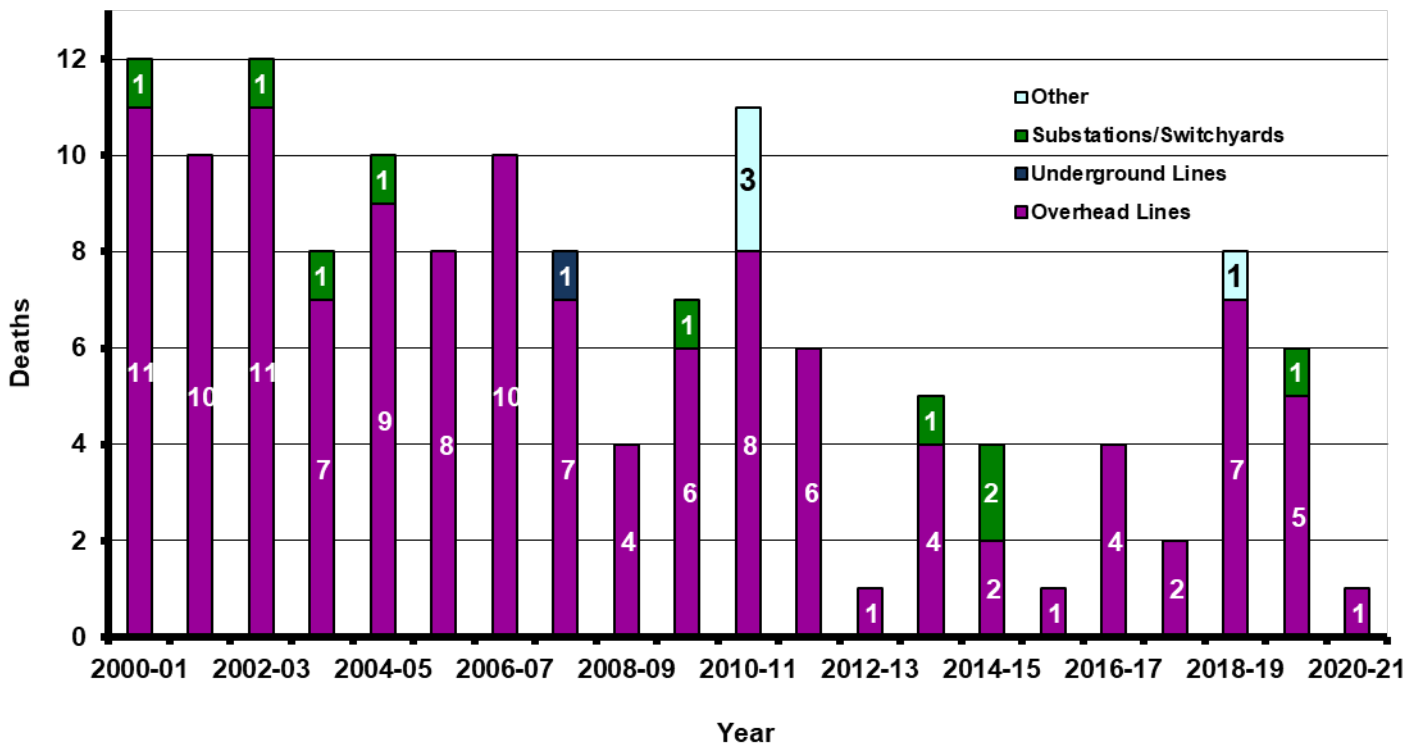
GRAPH 2.3 Deaths involving electricity supply assets sorted by asset types – 2020-21



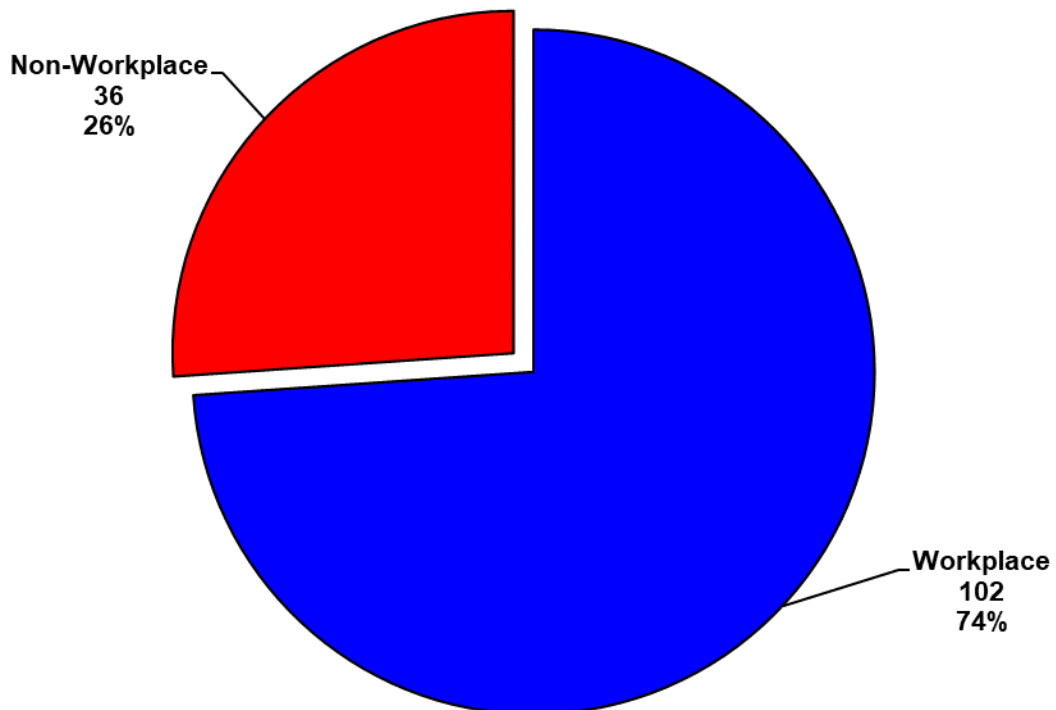
**GRAPH 2.4** Deaths involving electricity supply assets by victim categories



**GRAPH 2.5** Deaths involving electricity supply assets sorted by asset types

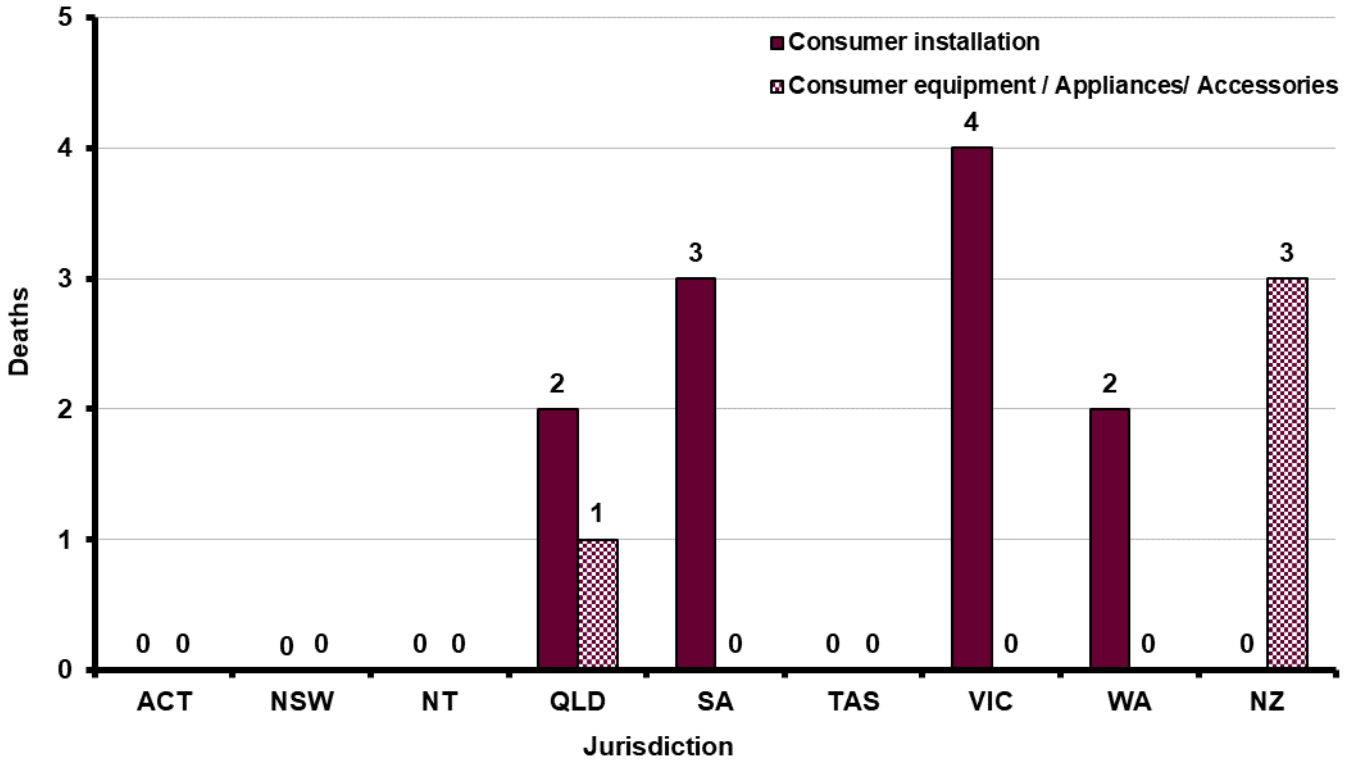


**GRAPH 2.6** Deaths involving electricity supply assets: workplace versus non-workplace

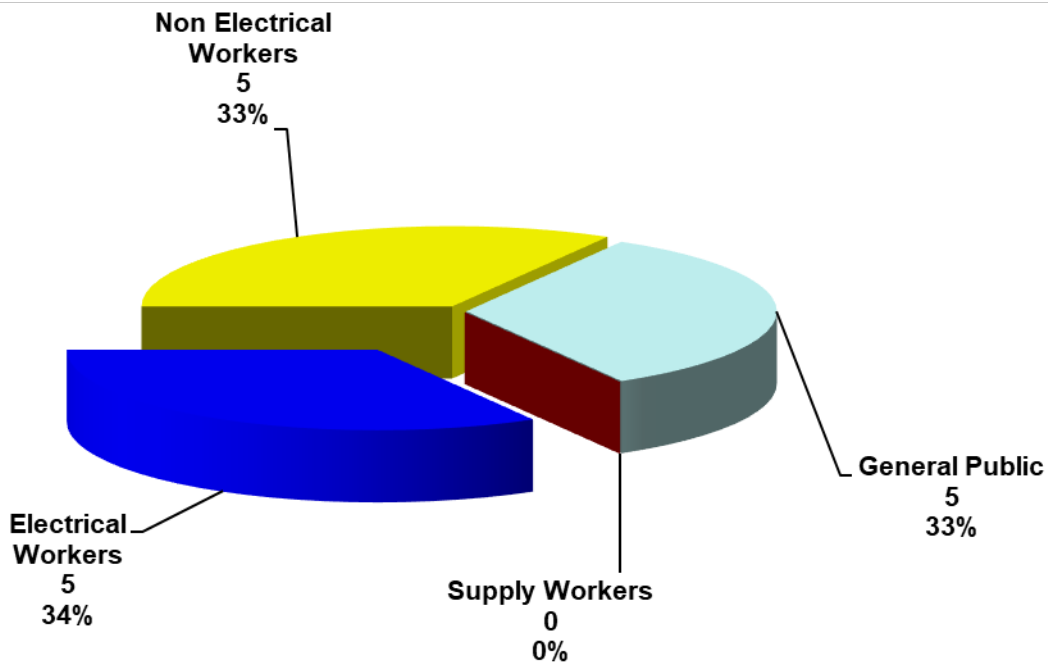


### 3. Fatalities involving consumer installations and equipment

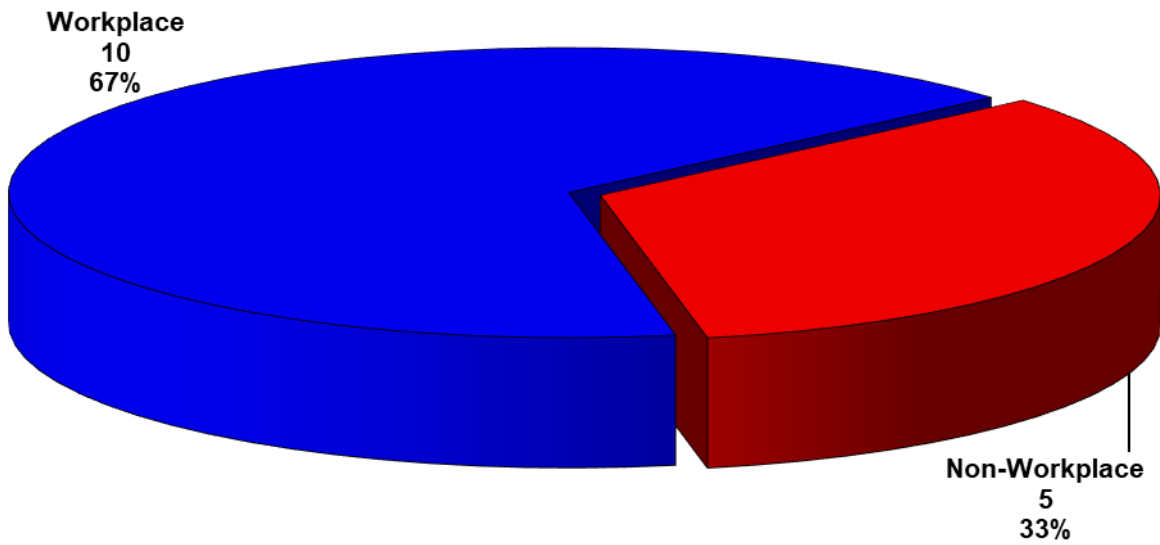
GRAPH 3.1 Electrical deaths in Australia and New Zealand involving consumer assets – 2020-21



GRAPH 3.2 Deaths involving consumer assets by victim categories – 2020-21



GRAPH 3.3 Deaths involving consumer installations or equipment at the workplace sorted by location – 2020-21

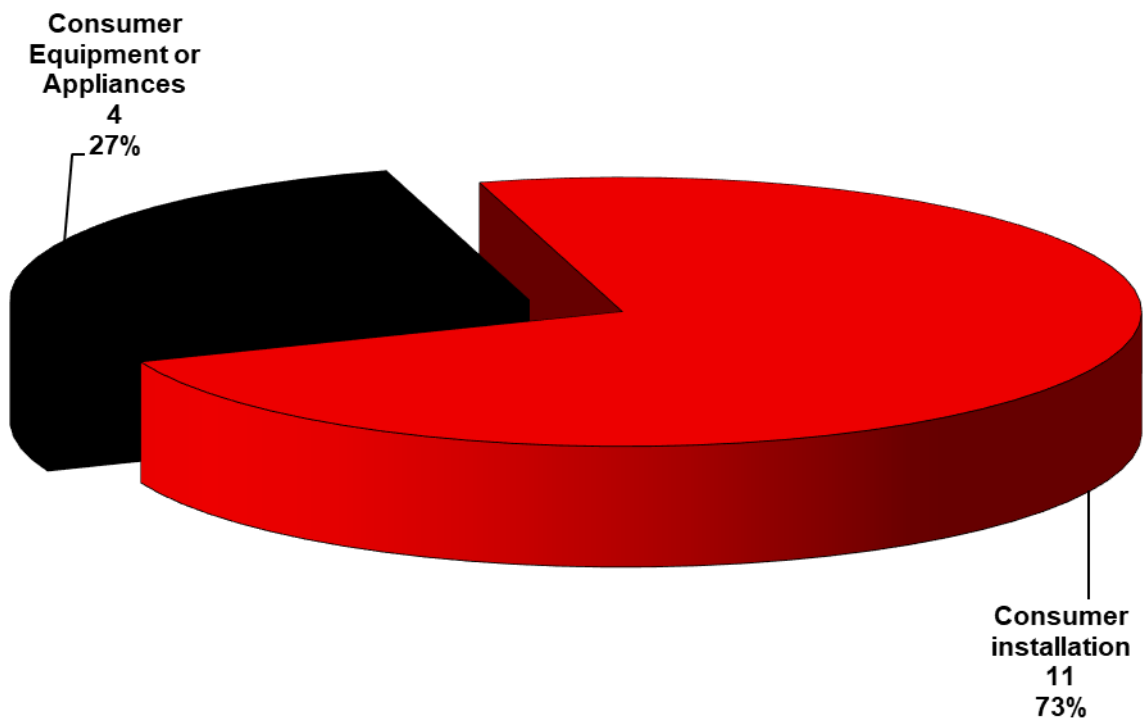


**GRAPH 3.4** Contributing factors for electrical deaths involving consumer installations or equipment – 2020-21

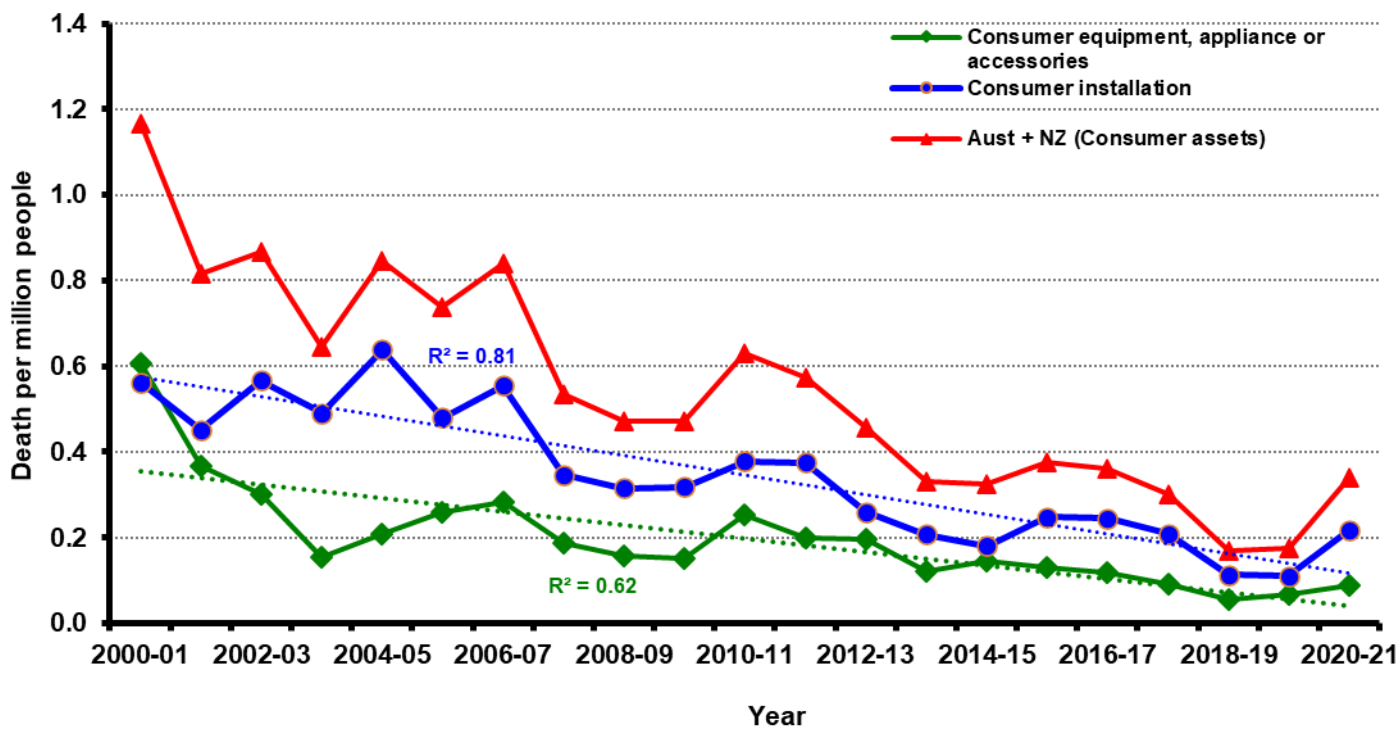


**GRAPH 3.5** Deaths involving consumer installations (fixed wiring) or equipment -2020-21

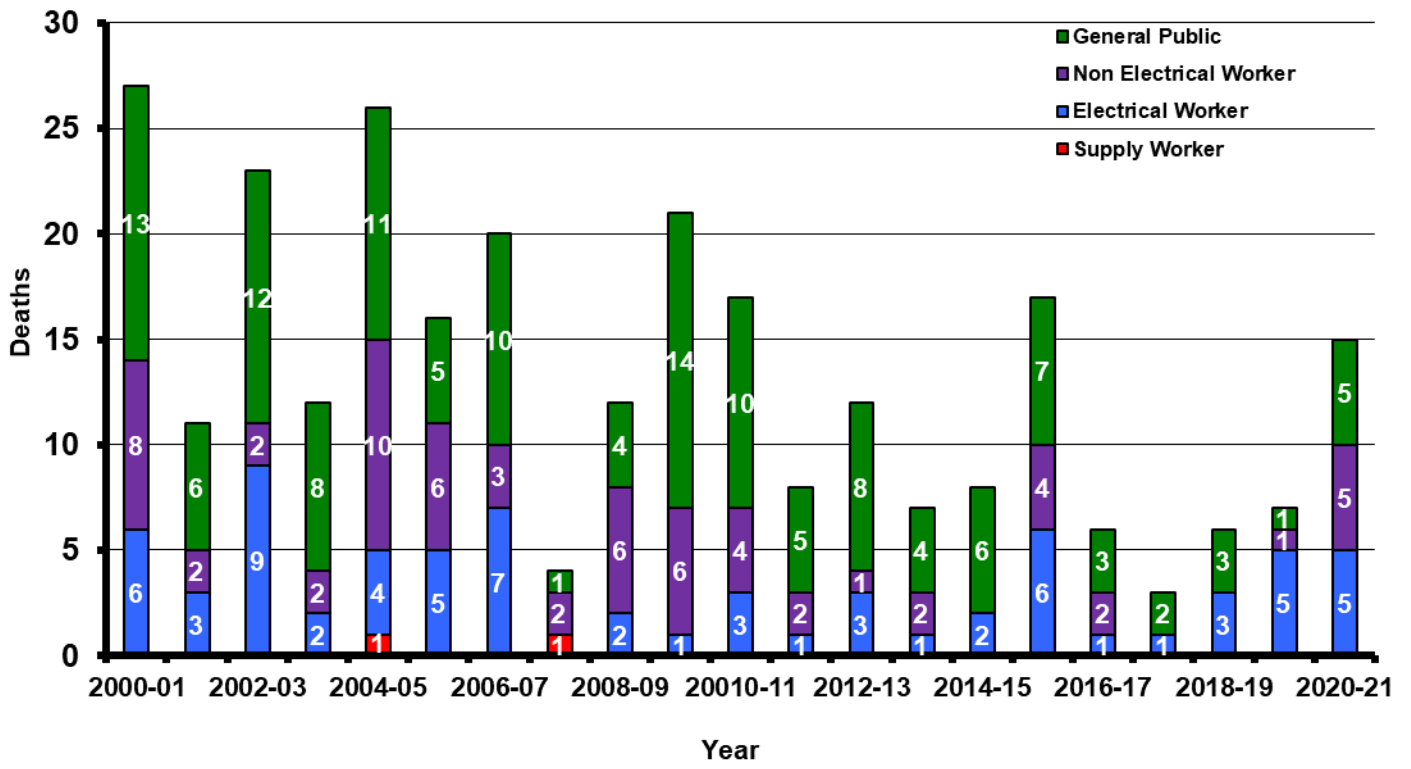




GRAPH 3.6 Trends by asset type with three year moving average



GRAPH 3.7 Deaths involving consumer assets by victim categories



#### 4. Fatal electrical accidents since July 2000

| YEAR         | ACT      | NSW        | NT        | QLD       | SA        | TAS       | VIC       | WA        | AUST       | NZ        | TOTAL      |
|--------------|----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|------------|
| 2000-01      | 0        | 9          | 2         | 10        | 7         | 0         | 5         | 4         | 37         | 2         | 39         |
| 2001-02      | 1        | 3          | 1         | 3         | 2         | 3         | 1         | 2         | 16         | 5         | 21         |
| 2002-03      | 1        | 13         | 0         | 1         | 1         | 4         | 0         | 7         | 27         | 8         | 35         |
| 2003-04      | 0        | 10         | 1         | 2         | 1         | 0         | 1         | 3         | 18         | 2         | 20         |
| 2004-05      | 0        | 11         | 2         | 8         | 2         | 1         | 1         | 4         | 29         | 7         | 36         |
| 2005-06      | 0        | 6          | 3         | 3         | 0         | 0         | 6         | 3         | 21         | 3         | 24         |
| 2006-07      | 0        | 3          | 1         | 6         | 1         | 2         | 2         | 5         | 20         | 10        | 30         |
| 2007-08      | 0        | 0          | 0         | 5         | 0         | 0         | 1         | 1         | 7          | 5         | 12         |
| 2008-09      | 0        | 4          | 0         | 3         | 1         | 0         | 1         | 4         | 13         | 3         | 16         |
| 2009-10      | 0        | 5          | 2         | 5         | 2         | 0         | 9         | 2         | 25         | 3         | 28         |
| 2010-11      | 0        | 7          | 1         | 6         | 1         | 1         | 4         | 4         | 24         | 4         | 28         |
| 2011-12      | 1        | 6          | 0         | 4         | 1         | 0         | 1         | 0         | 13         | 1         | 14         |
| 2012-13      | 0        | 3          | 0         | 3         | 2         | 0         | 1         | 2         | 11         | 2         | 13         |
| 2013-14      | 0        | 5          | 1         | 1         | 1         | 0         | 2         | 1         | 11         | 1         | 12         |
| 2014-15      | 0        | 2          | 1         | 3         | 2         | 0         | 1         | 2         | 11         | 1         | 12         |
| 2015-16      | 0        | 7          | 0         | 2         | 0         | 1         | 5         | 1         | 16         | 2         | 18         |
| 2016-17      | 0        | 3          | 0         | 5         | 0         | 0         | 2         | 0         | 10         | 0         | 10         |
| 2017-18      | 0        | 0          | 0         | 0         | 1         | 0         | 3         | 1         | 5          | 0         | 5          |
| 2018-19      | 0        | 3          | 1         | 4         | 0         | 0         | 4         | 0         | 12         | 2         | 14         |
| 2019-20      | 0        | 1          | 1         | 1         | 0         | 0         | 3         | 3         | 9          | 4         | 13         |
| 2020-21      | 0        | 0          | 0         | 3         | 3         | 0         | 5         | 2         | 13         | 3         | 16         |
| <b>Total</b> | <b>3</b> | <b>101</b> | <b>17</b> | <b>78</b> | <b>28</b> | <b>12</b> | <b>58</b> | <b>51</b> | <b>348</b> | <b>68</b> | <b>416</b> |

## 5. Summary of electrical fatality reports 2020-21

### ELECTRICITY DISTRIBUTOR/SUPPLY AUTHORITY EQUIPMENT

Legend:

A Supply worker

B Electrical worker

C Non-electrical worker

D General public

|                       | ACT      |          |          |          | NSW      |          |          |          | NT       |          |          |          | QLD      |          |          |          | SA       |          |          |          |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                       | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        |
| Overhead Line         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Underground Line      | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Substation/Switchyard | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Other                 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>TOTAL</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <b>TOTAL</b>          | <b>0</b> |          |          |          | <b>0</b> |          |          |          | <b>0</b> |          |          |          | <b>0</b> |          |          |          |          |          |          |          |

|                       | TAS      |          |          |          | VIC      |          |          |          | WA       |          |          |          | NZ       |          |          |          | TOTAL    |          |          |          | Total    |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                       | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        |          |
| Overhead Line         | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 0        | 1        |
| Underground Line      | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Substation/Switchyard | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Other                 | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>TOTAL</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>1</b> |
| <b>TOTAL</b>          | <b>0</b> |          |          |          | <b>1</b> |          |          |          | <b>0</b> |          |          |          | <b>0</b> |          |          |          | <b>1</b> |          |          |          |          |

**CONSUMER INSTALLATIONS** (installation of fixed equipment)

Legend:  
 A Supply worker  
 B Electrical worker  
 C Non-electrical worker  
 D General public

|  | ACT      |          |          |          | NSW      |          |          |          | NT       |          |          |          | QLD      |          |          |          | SA       |          |          |          |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|  | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        |
| Work practice                                | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 0        | 0        |
| Installation Failure                         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Failure Deterioration of Equipment or Wiring | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Misuse/Interference with Equipment or Wiring | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 1        | 0        | 0        | 0        | 0        |
| Other  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 1        | 0        |
| <b>TOTAL</b>                                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>2</b> | <b>1</b> | <b>0</b> |
| <b>TOTAL</b>                                 | <b>0</b> |          |          |          | <b>0</b> |          |          |          | <b>0</b> |          |          |          | <b>2</b> |          |          |          | <b>3</b> |          |          |          |

|  | TAS      |          |          |          | VIC      |          |          |          | WA       |          |          |          | NZ       |          |          |          | TOTAL     |          |          |          | Total     |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|----------|-----------|
|  | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        | A         | B        | C        | D        |           |
| Work practice                                | 0        | 0        | 0        | 0        | 0        | 1        | 0        | 0        | 0        | 1        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 3        | 0        | 0        | 3         |
| Installation Failure                         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        | 0        | 0        | 0         |
| Failure Deterioration of Equipment or Wiring | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 0        | 0        | 0        | 0        | 0        | 0         | 0        | 1        | 0        | 1         |
| Misuse/Interference with Equipment or Wiring | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        | 2        | 1        | 3         |
| Other  | 0        | 0        | 0        | 0        | 0        | 1        | 0        | 1        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 2        | 1        | 1        | 4         |
| <b>TOTAL</b>                                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>5</b> | <b>4</b> | <b>2</b> | <b>11</b> |
| <b>TOTAL</b>                                 | <b>0</b> |          |          |          | <b>4</b> |          |          |          | <b>2</b> |          |          |          | <b>0</b> |          |          |          | <b>11</b> |          |          |          |           |

## CONSUMER EQUIPMENT (Appliance or Accessories)

### Legend:

A Supply worker

B Electrical worker

C Non-electrical worker

D General public

|  | ACT      |          |          |          | NSW      |          |          |          | NT       |          |          |          | QLD      |          |          |          | SA       |          |          |          |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|  | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        |
| Work practice                                | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Installation Failure                         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Failure Deterioration of Equipment or Wiring | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Misuse/Interference with Equipment or Wiring | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 0        | 0        | 0        | 0        |
| Other  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| <b>TOTAL</b>                                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <b>TOTAL</b>                                 | <b>0</b> |          |          |          | <b>0</b> |          |          |          | <b>0</b> |          |          |          | <b>1</b> |          |          |          | <b>0</b> |          |          |          |

|  | TAS      |          |          |          | VIC      |          |          |          | WA       |          |          |          | NZ       |          |          |          | TOTAL    |          |          |          | Total    |          |          |          |          |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|  | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        | A        | B        | C        | D        |          |          |          |          |          |
| Work practice                                | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Installation Failure                         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| Failure Deterioration of Equipment or Wiring | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 1        | 0        | 0        | 1        | 1        | 0        | 0        | 1        | 1        | 2        |
| Misuse/Interference with Equipment or Wiring | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 0        | 0        | 0        | 1        | 1        |
| Other  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 0        | 0        | 0        | 1        | 0        | 0        | 0        | 1        | 1        |
| <b>TOTAL</b>                                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>2</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>3</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>3</b> | <b>4</b> |
| <b>TOTAL</b>                                 | <b>0</b> |          |          |          | <b>0</b> |          |          |          | <b>0</b> |          |          |          | <b>3</b> |          |          |          | <b>4</b> |          |          |          |          |          |          |          |          |