



Public Safety – Electrical Accidents Report 1998-2015

Health and Safety Workshop, 20 October 2016

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Contents

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General public

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Scope

Public data → Energy Safety

Limited to notifiable accidents related to ESI assets and:

- Involving the general public from 1998 to 2015
- Involving non-electrical workers from 1998 to 2008 (fatality data from 1998 to 2015)

The screenshot shows the 'Energy Safety' website. At the top, there is a navigation bar with links: Home, About, Legislation and Policy, Appliances and Fittings, Installations and Networks, Consumer, and Forms. A search bar is located to the right of the navigation bar. The main content area is titled 'Accident Summaries' and includes a sidebar with a list of links: Background, Accident data collection and recording, Accidents and accident notification definitions, 2015 Accident Summaries, 2014 Accident Summaries, 2013 Accident summaries, 2012 Accident Summaries, 2011 Accident Summaries, 2010 Accident Summaries, 2009 Accident Summaries, and Historical Accident Summaries. The main text area contains the title 'Accident Summaries' followed by a paragraph: 'The Energy Safety summary of reported electrical and gas accidents contains brief descriptions of Energy Safety investigations into electrically-caused serious injuries (shock or burn) and significant property damage caused by fire. It also lists notifiable gas accidents reported to Energy Safety during each calendar year.' Below this, there is a section titled 'Background' with the text: 'Energy Safety is part of WorkSafe New Zealand and is responsible for the administration of safety and related matters under the Gas Act 1992 and the Electricity Act 1992.' A 'Read more' link is provided. Another section titled 'Accident data collection and recording' states: 'Certain accidents have to be notified to Energy Safety. These are generally high consequence accidents (eg fatalities, serious harm, significant property damage).' with another 'Read more' link. On the right side of the page, there are icons for PDF, Print, and Social Media, and a 'Subscribe to updates' section with links for Email and RSS.

General Public - Profile

Figure 1. General public - Total harm, 1998 - 2015

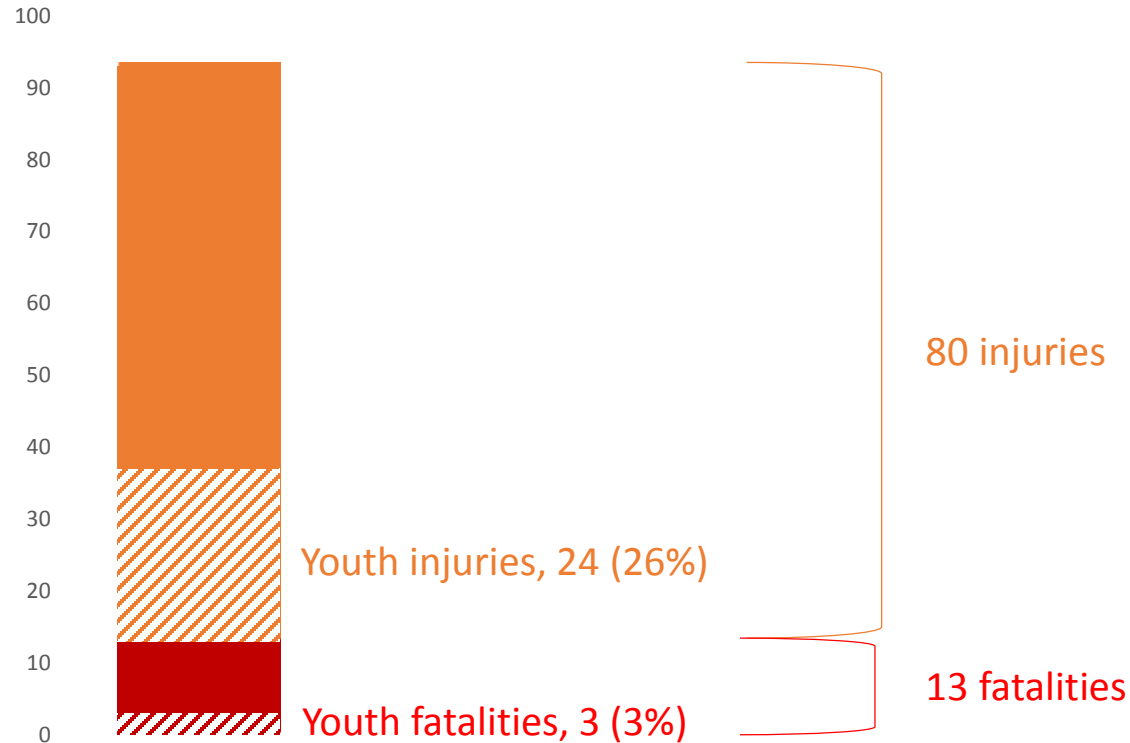
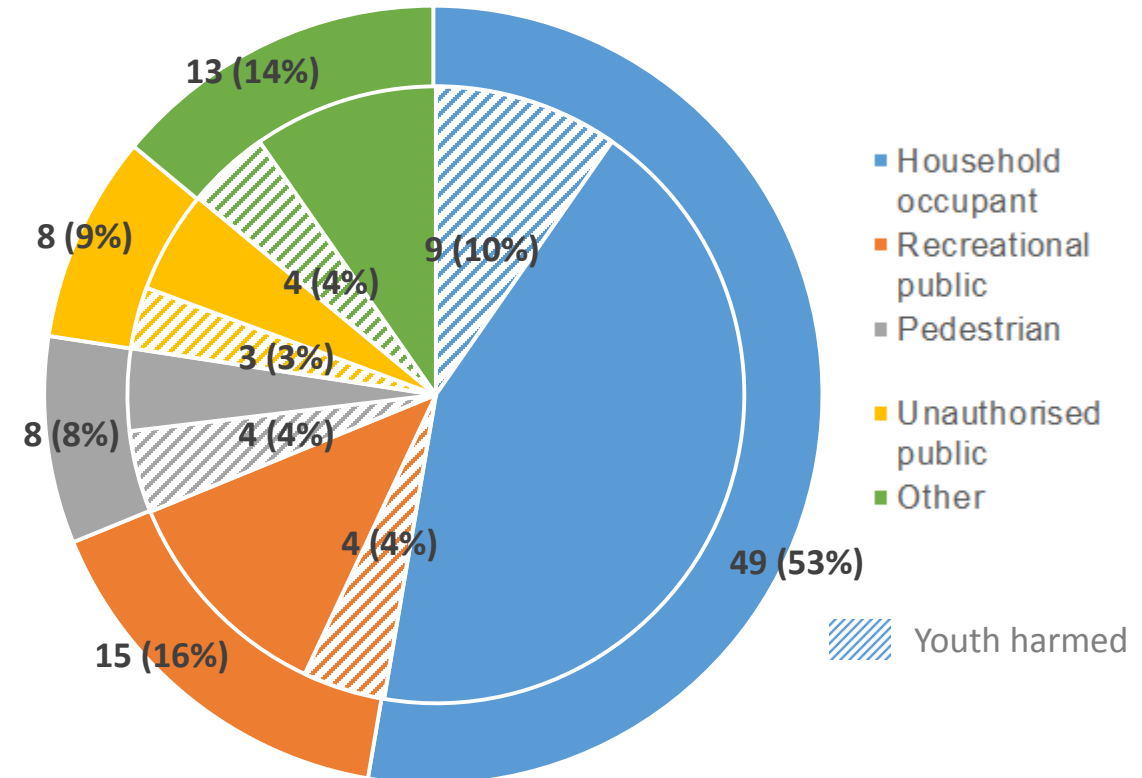
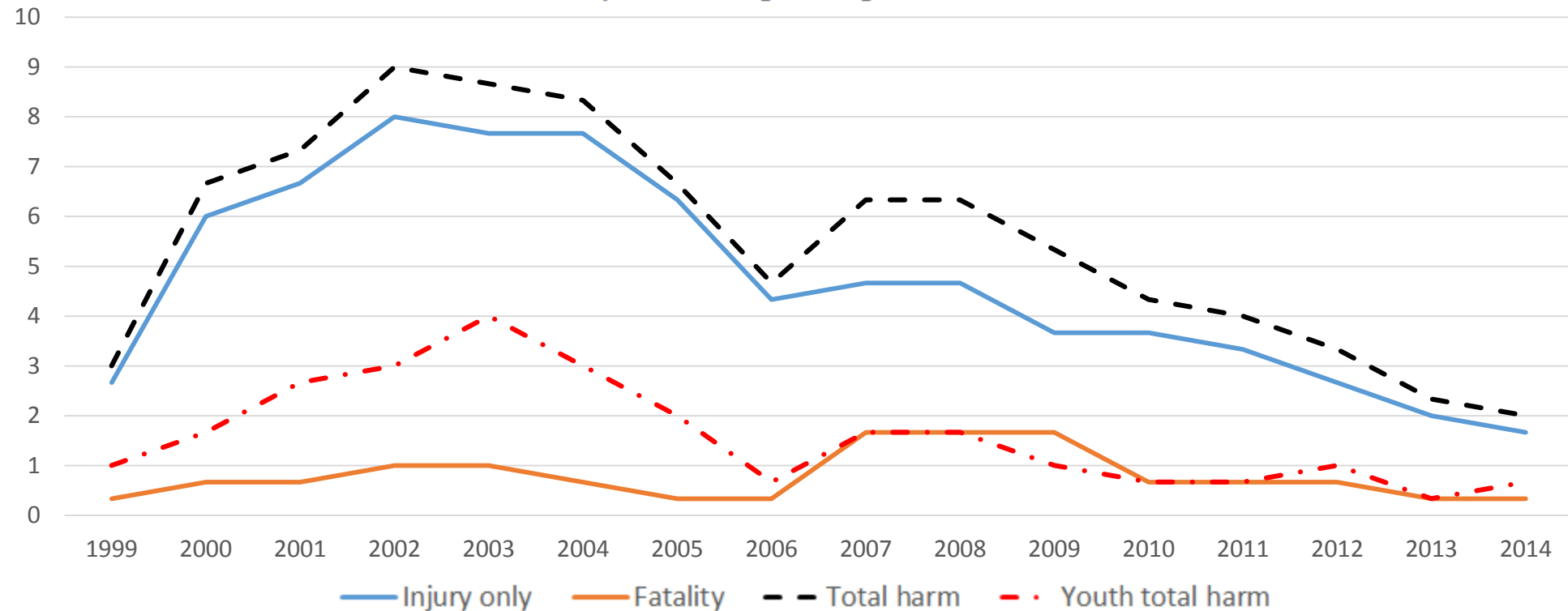


Figure 2. General public - Total harm, 1998-2015



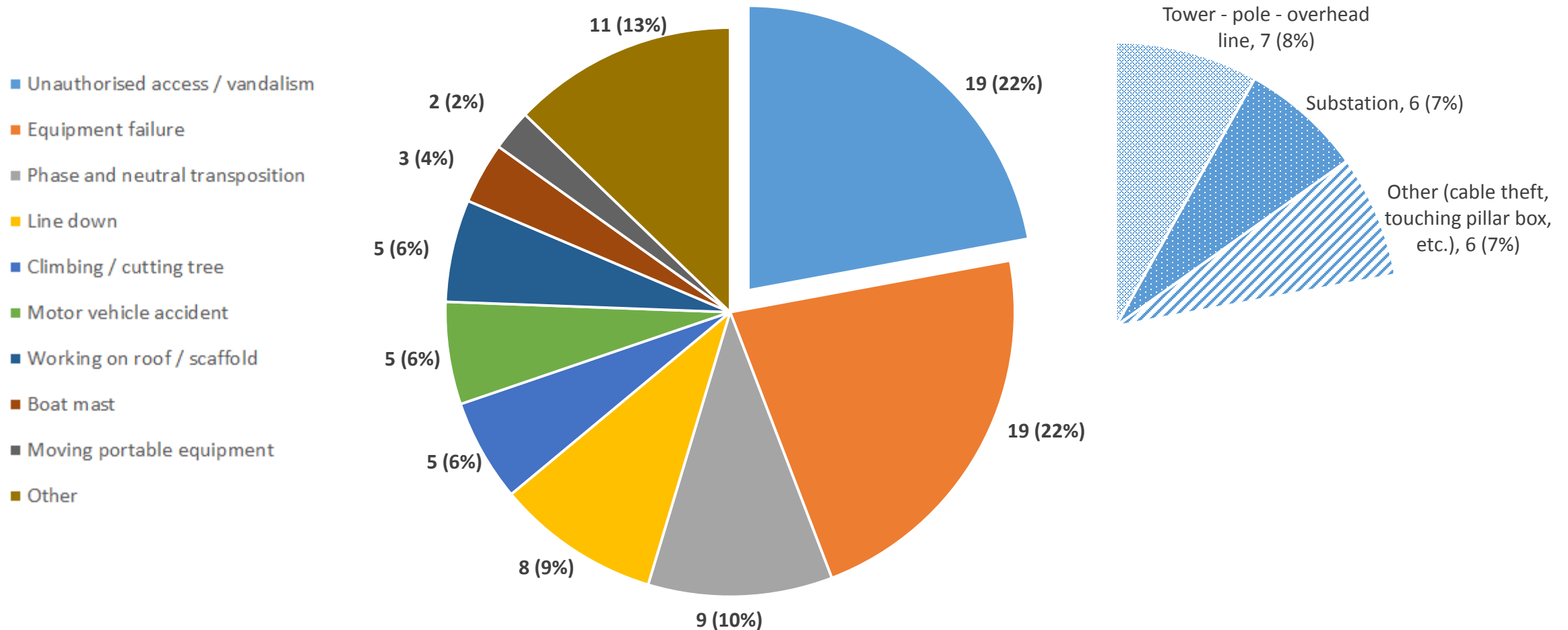
General public - Harm trends

Figure 3. Fatality and injury trends among the general public
Three-year moving averages – 1998-2015



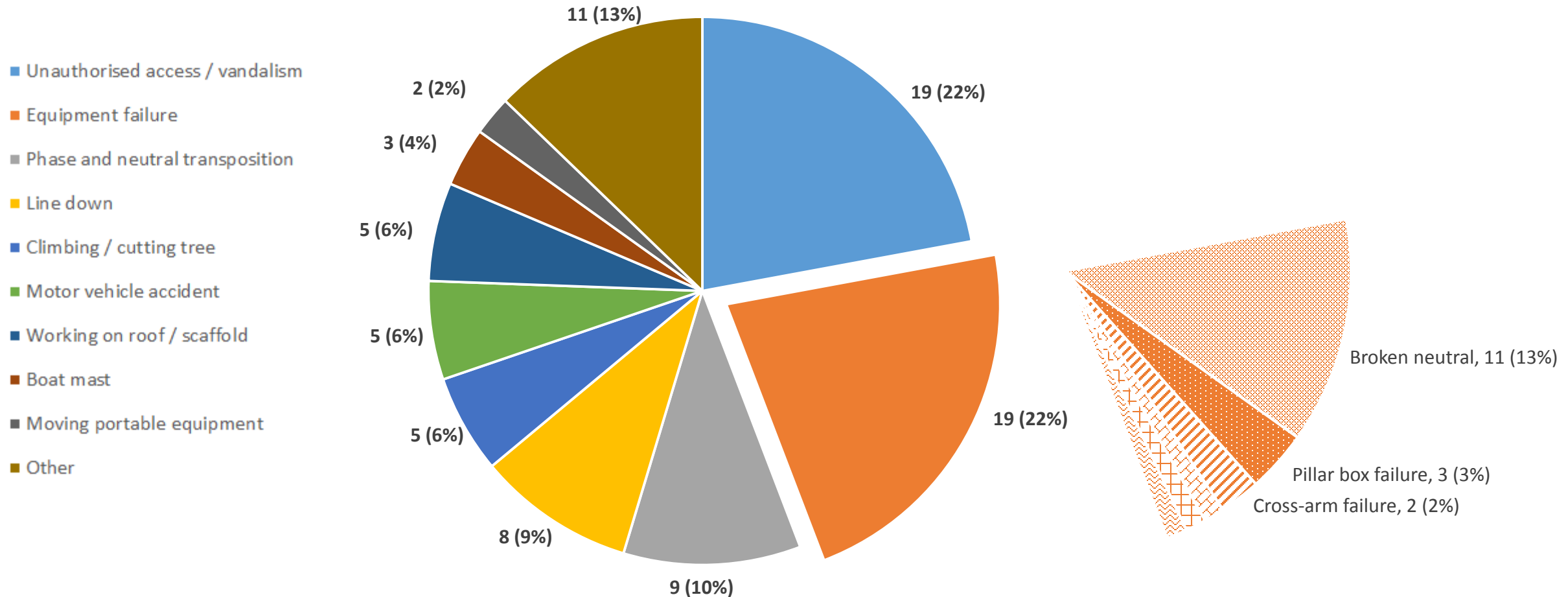
General public - Accident mechanisms

Figure 4. Breakdown of accident mechanisms to the general public - 1998-2015



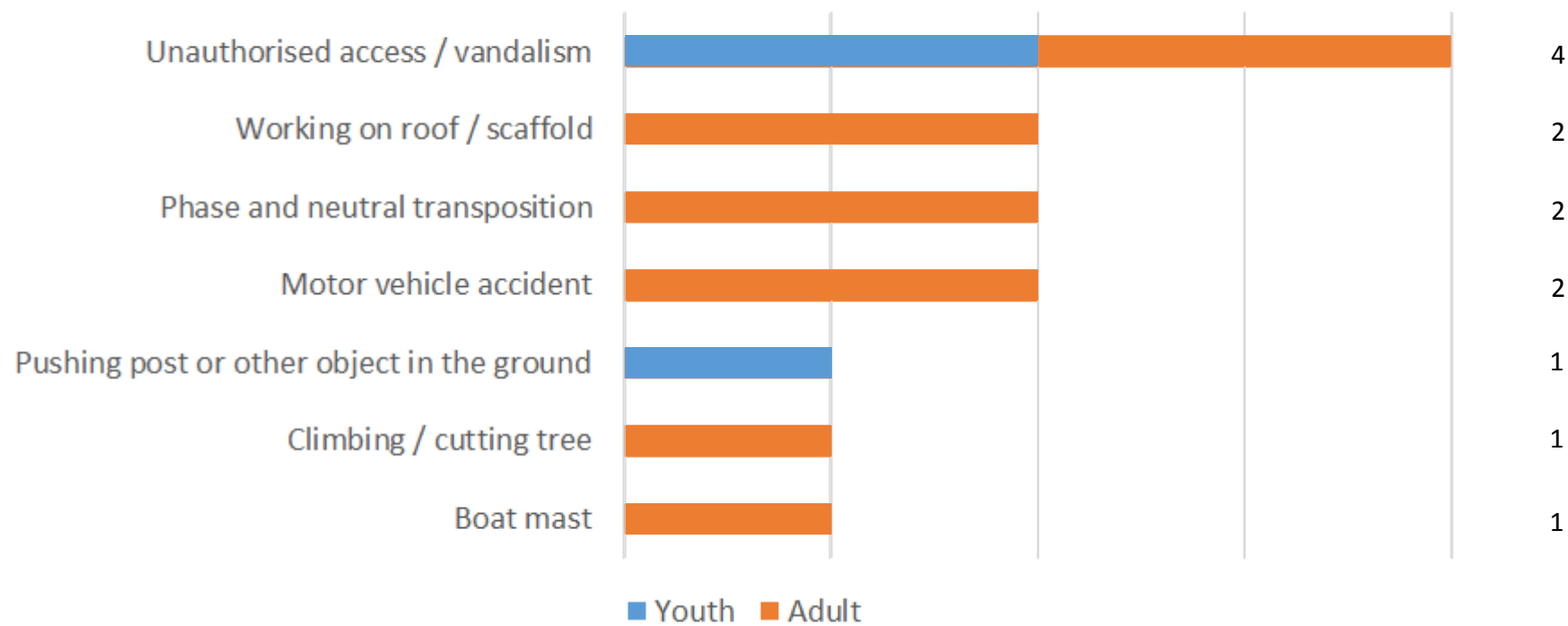
General public - Accident mechanisms

Figure 4. Breakdown of accident mechanisms to the general public - 1998-2015



General public - Fatality mechanisms

Figure 5. General public, Fatalities by accident mechanism - 1998-2015



General public - Voltages

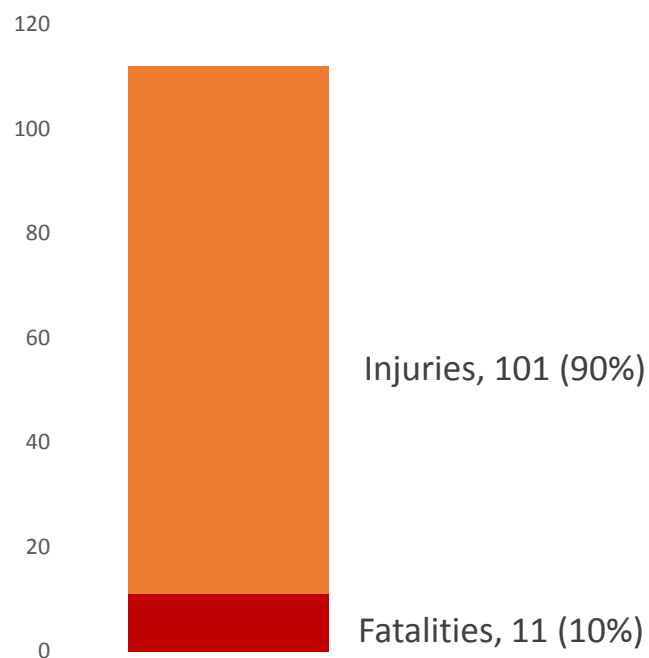
Figure 7. General public – Accidents by voltages, 1998-2015

Accidents by voltage (in V)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	1998-2005 frequency	2006-2015 frequency
230	1	2	2	2	1	2	4	1	2	3	3	1	4	3	1	1	1	1	1.9	2.0
400				1		1	3	2		2	1	2		1	1		1		0.9	0.8
11000	2	1	1	2	2	5	4	1		1	2			1	1	1	1		2.3	0.7
33000				2	2				1		1								0.5	0.2
66000							1												0.1	0.0
110000				1															0.1	0.0
220000												1							0.0	0.1
Unknown										1				1					0.0	0.2
<i>Total</i>	3	3	3	8	5	8	12	4	3	7	7	4	4	6	3	2	3	1	5.8	4.0

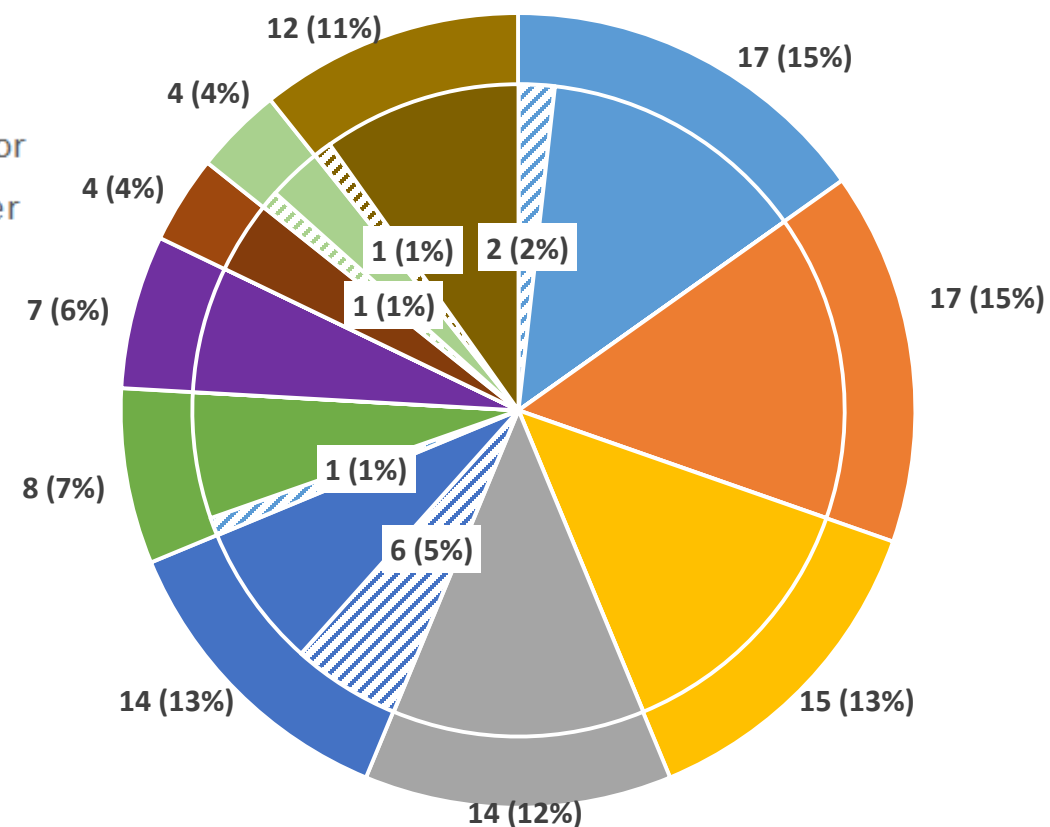
Non-electrical workers - Profile

Figure 9. Non-electrical workers - Total number of persons harmed, 1998-2008

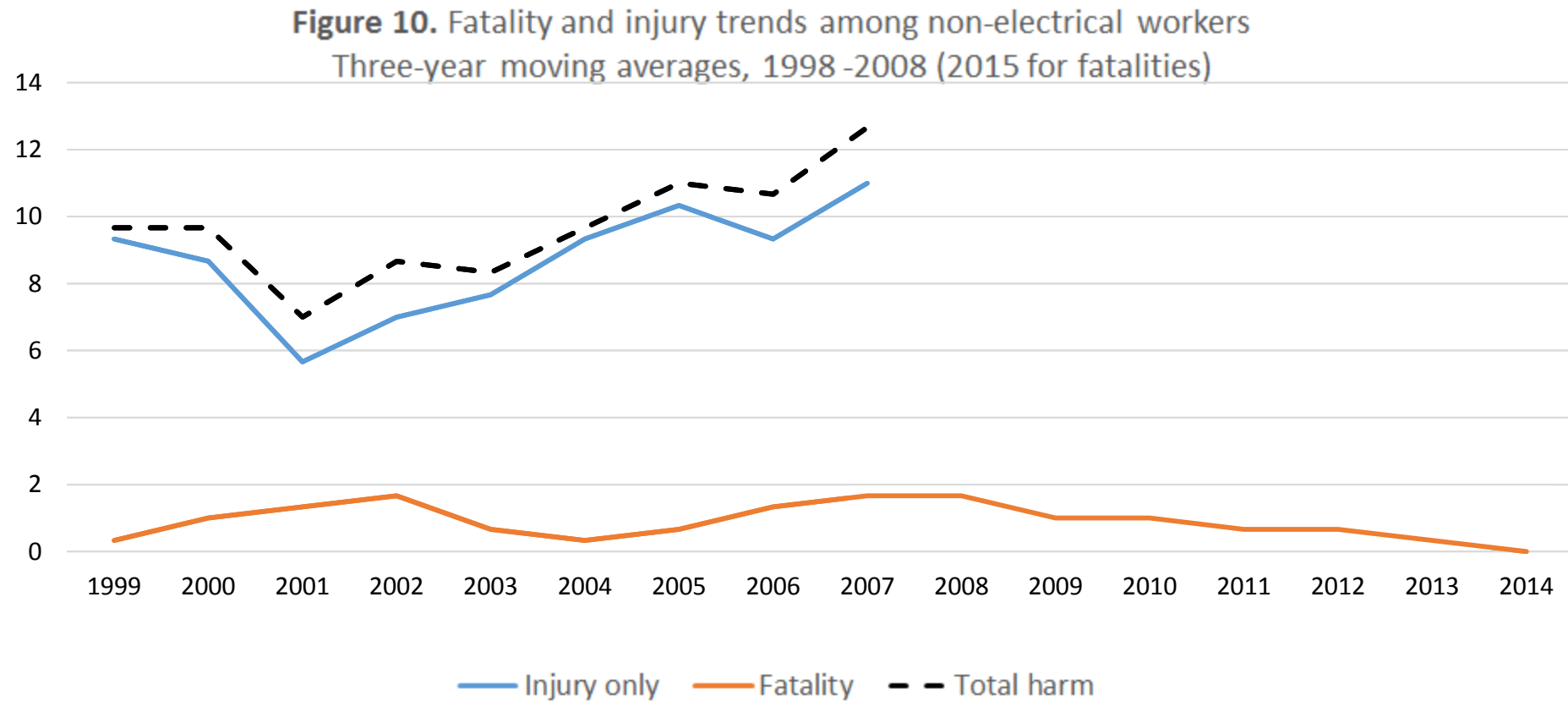
Figure 8. Non-electrical workers - Total harm, 1998-2008



- Heavy equipment operator
- Other construction worker
- Labourer
- Arborist
- Farm worker
- Fitter
- Builder
- Painter
- Roofer
- Unspecified / Other

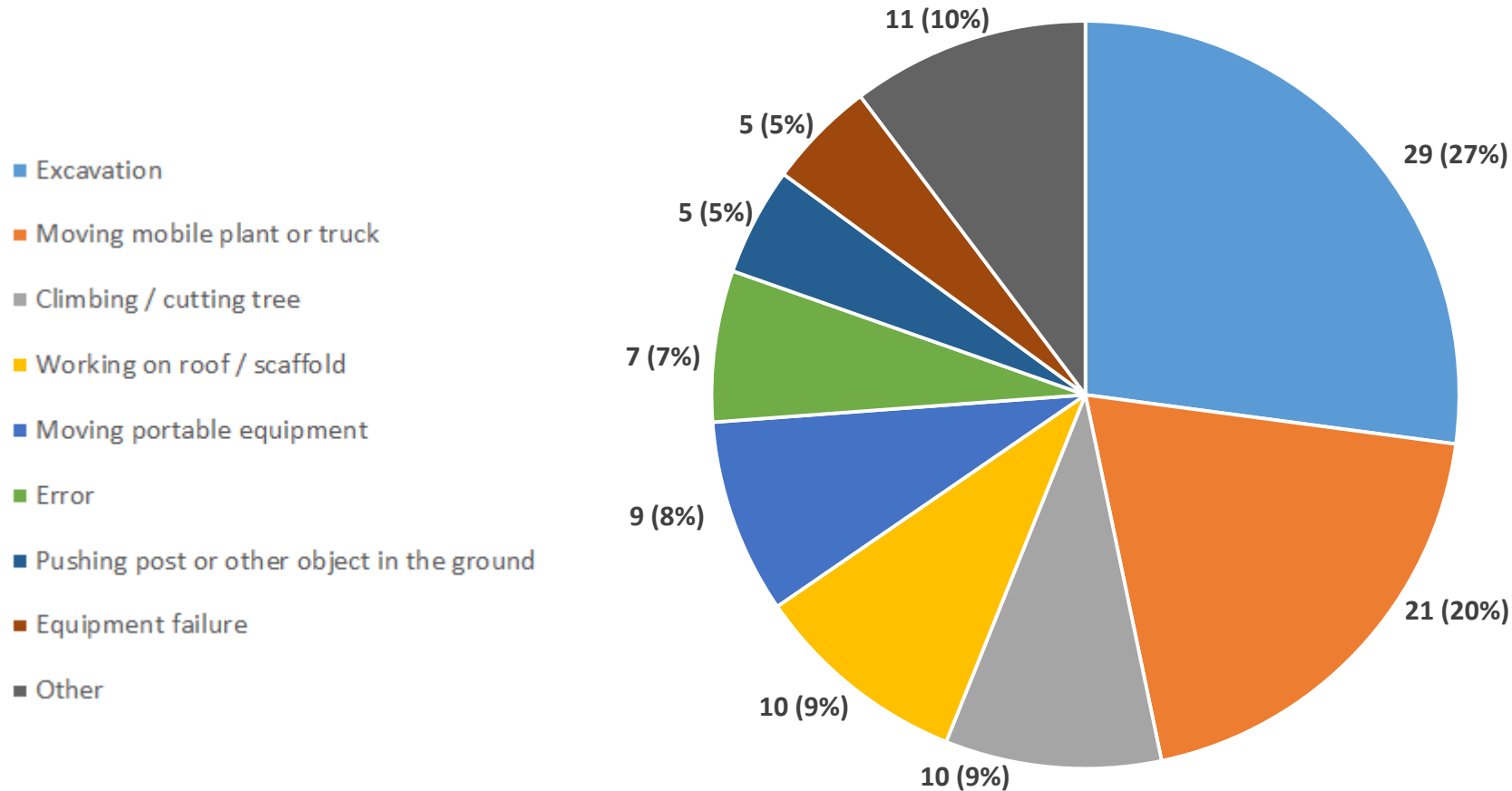


Non-electrical workers - Harm trends



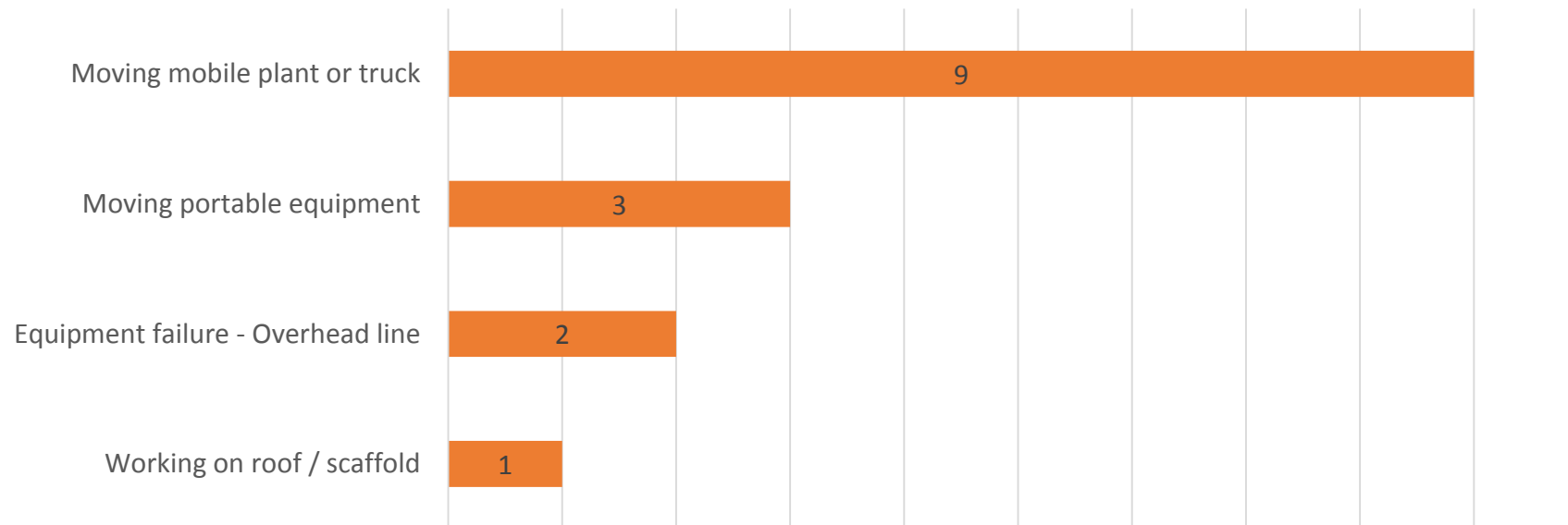
Non-electrical workers - Accident mechanisms

Figure 11. Accident mechanism to non-electrical workers, 1998-2008



Non-electrical workers - Fatality mechanisms

Figure 12. Non-electrical workers - Fatalities by accident mechanism, 1998-2015



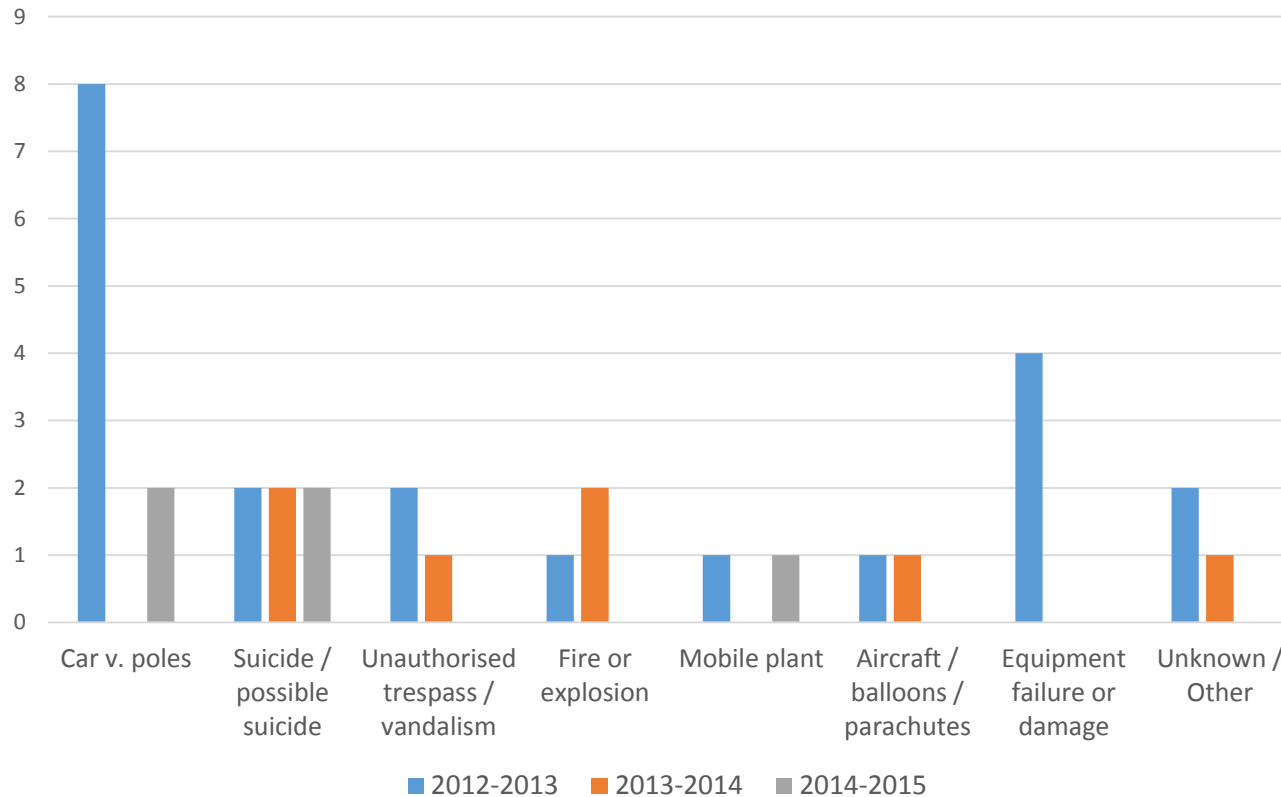
Non-electrical workers - Voltages

Figure 13. Non-electrical workers - Accidents by voltages, 1998-2008

Accidents by voltage (in V)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Frequency
230		1	1			2	3	1	5	3		1.5
400	1	3				2	1	1	1	3	2	1.3
6,600	2	1										0.3
11,000	8	6	2	11	2	4	4	3	6	2	9	5.2
22,000		1								1		0.2
33,000			2		1		2	2	1	1	1	0.9
66,000											1	0.1
110,000	1							1				0.2
220,000							1					0.1
Unknown									1			0.1
<i>Total</i>	12	12	5	11	3	8	11	8	14	10	13	9.7

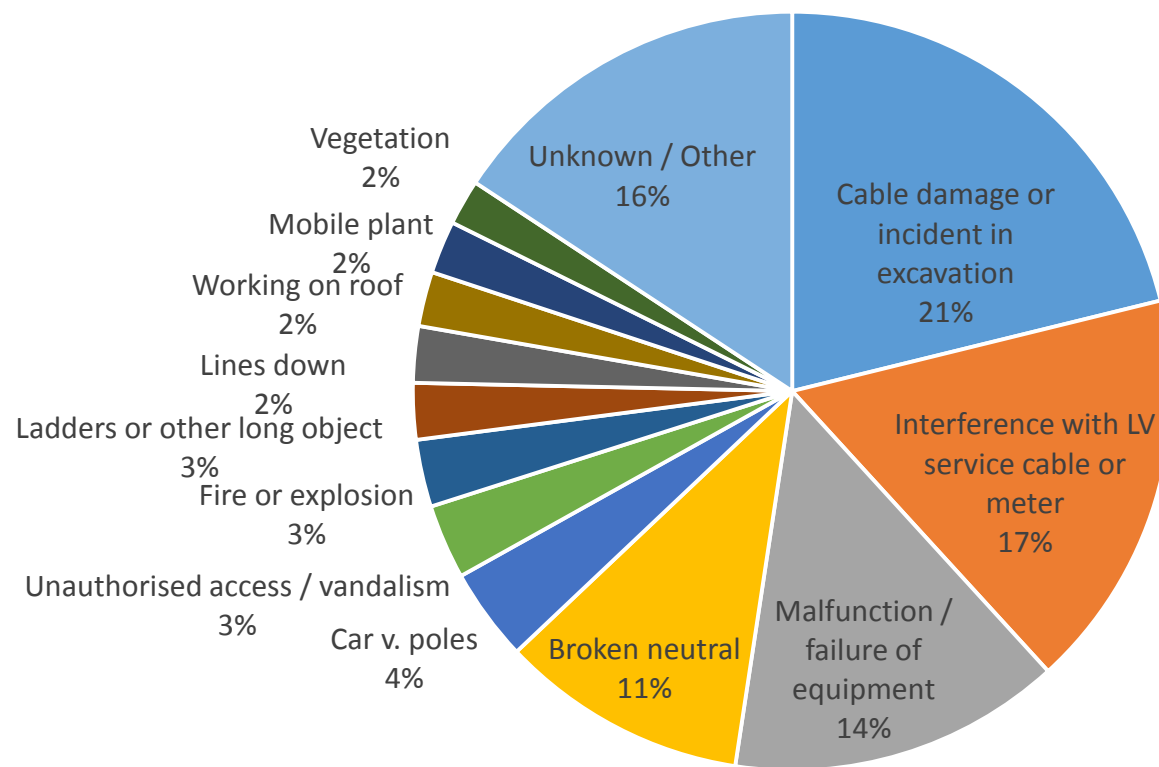
Lessons from overseas - Fatalities in the UK

Figure 14. UK Fatalities by accident causes



Lessons from overseas - Accident causes in the UK

Figure 15. UK - Accident causes and percentage of harm, 2012-2015 (YE March)



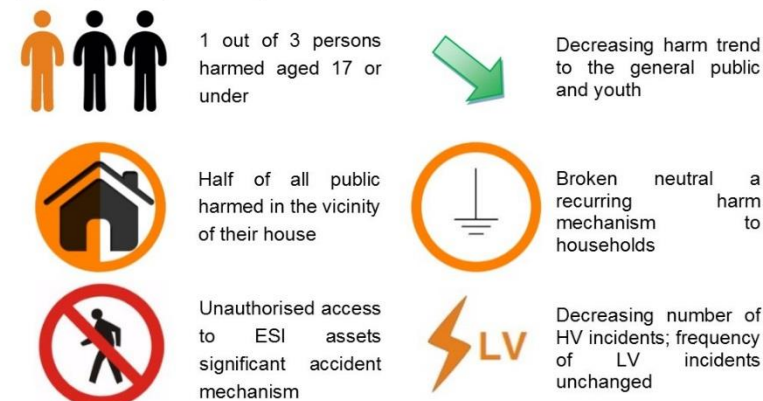
Recommendations

Focus on:

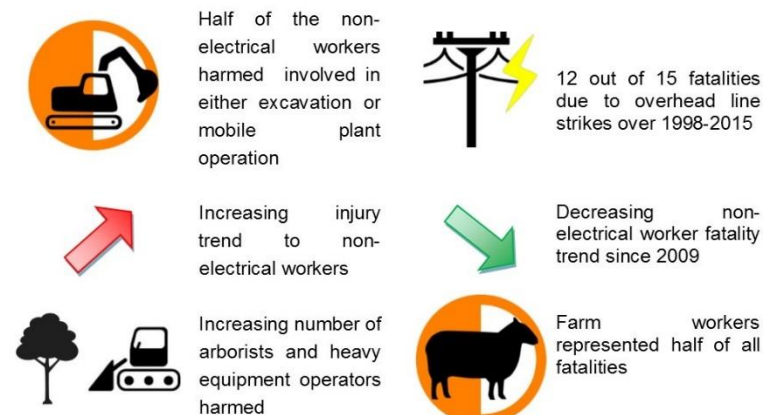
- Safety procedures related to LV accidents affecting the general public
- The protection of both low and high voltage assets against trespass and vandalism
- Educating non-electrical workers on the risks associated with accidental contact with overhead lines and underground services
- Support further analysis of public safety data at a national level by the EEA

Public Safety in the Electricity Supply Industry Key findings

General public (1998-2015)



Non-electrical workers (1998-2008)



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Any questions?

