

OCN - THE INDEPENDENT VOICE OF STRATA OWNERS

~ Celebrating ~

20 YEARS

2002-2022

Lithium-ion Batteries in Strata

OCN Webinar 15 February 2024

12pm – 1pm AEDT

SUPPORTED BY



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Strata+



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Welcome to Country

We **acknowledge** the Gadigal people of the Eora Nation, and all **Traditional Custodians** of the land on which we meet today. I pay my respects to their Elders past, present and emerging. I extend that respect to all **Aboriginal** and **Torres Strait Islander** people.

SUPPORTED BY



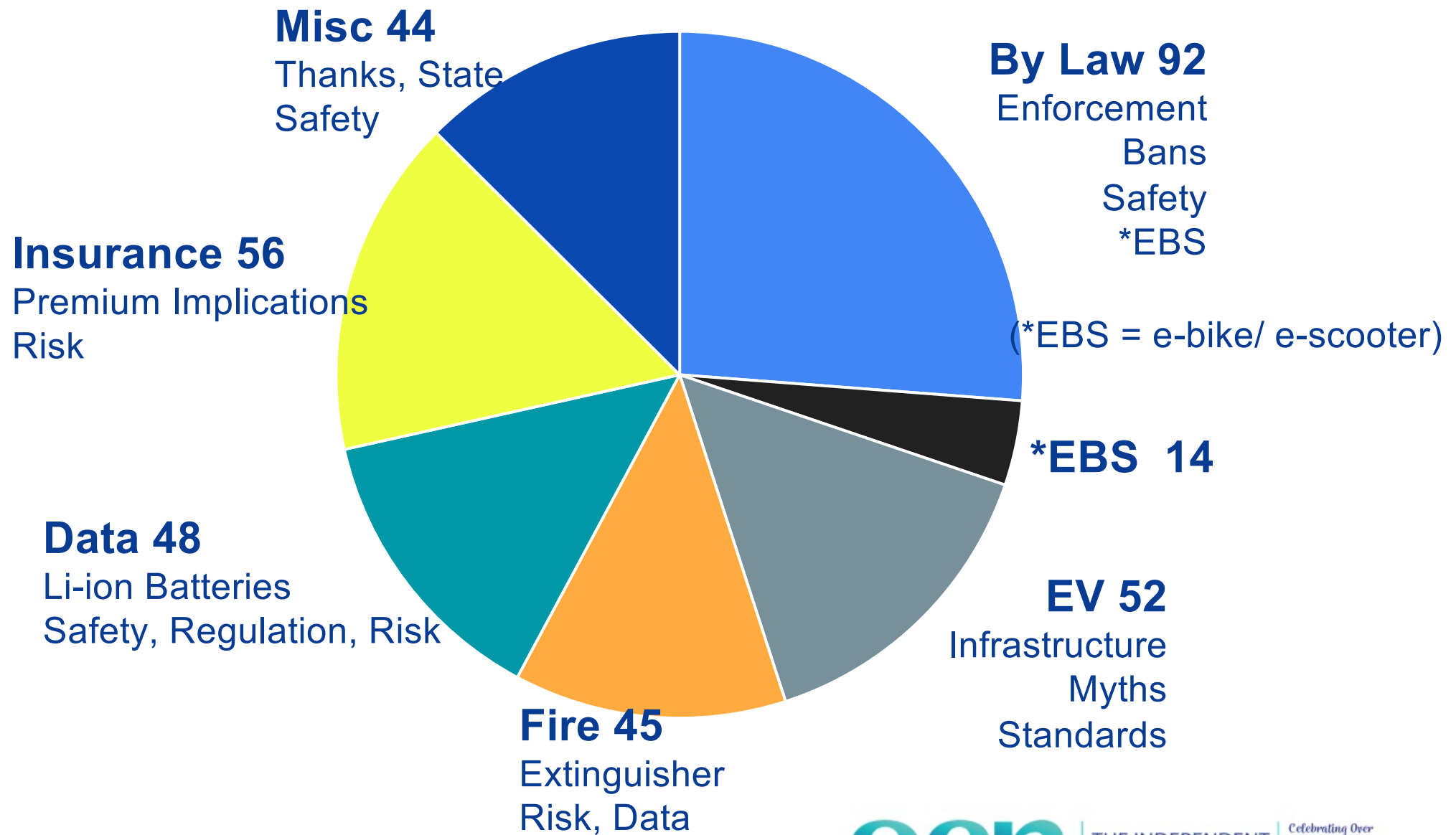
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350 Plus Questions



Agenda

1. Greeting

Lachlan Malloch Principal Adviser Office of the Strata and Property Services Commissioner.

2. Introductions and OCNs Role in li-ion battery education.

Fred Tuckwell. OCN Chair.

3. The real fire risks across common li-ion battery products.

Emma Sutcliffe. General Manager EV FireSafe.

4. Electric Vehicle Council responses and submissions to the EV Fire Risk.

Ross de Rango – Head of Infrastructure EVC.

5. Insurance Council of Australia advice to members.

Chris Wood, Emerging Risks Manager Allianz Australia and David Ellis - Director of Technical with Strata Community Insurance

6. Practical steps OCN is taking to help educate our members.

Fred.

7. Questions

Greeting, Introductions and OCNs Role in lithium-ion battery education

Lachlan Malloch, Principal Advisor to the Office of Strata and Property Services Commissioner

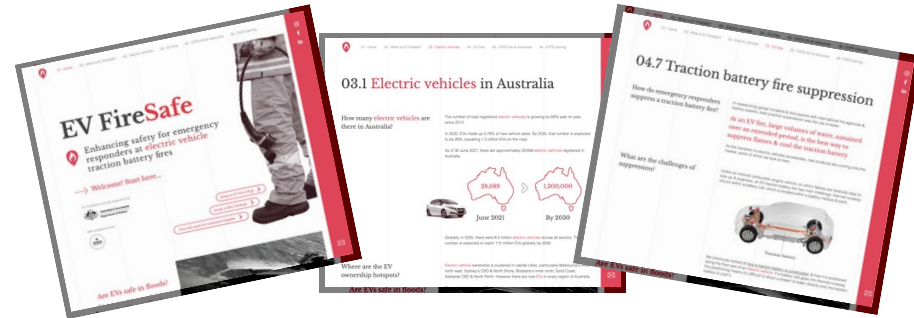
Fred Tuckwell OCN Chair

EV FireSafe's global work

Research funded by:



Australian Government
Department of Defence



Our work is referenced by &/or we collaborate with:



NFCC
National Fire
Chiefs Council



Nederlands
Instituut
Publieke
Veiligheid



We are invited Technical Panel members for Fire Protection Research Foundation's (at the National Fire Protection Association, US), 2 year testing & training program:

"Assessment of Electric Vehicle Firefighting Techniques, Technologies & the Impact of Stranded Energy"

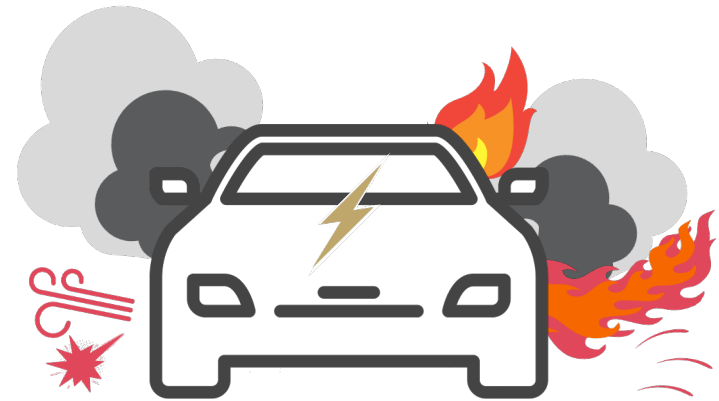
EV fires are ~~big news~~ clickbait



EV LiB fires are very rare

In passenger plug-in EVs, we have verified*:

504 EV traction battery fires globally, 2010-today
+ 67 currently being cross checked



“...the total number of electric cars on the world's roads to 26 million, up 60% relative to 2021, with BEVs accounting for over 70% of total annual growth...As a result, about 70% of the global stock of electric cars in 2022 were BEVs

International Energy Agency, Global EV Outlook 2023

EV LiB Fires in Australia



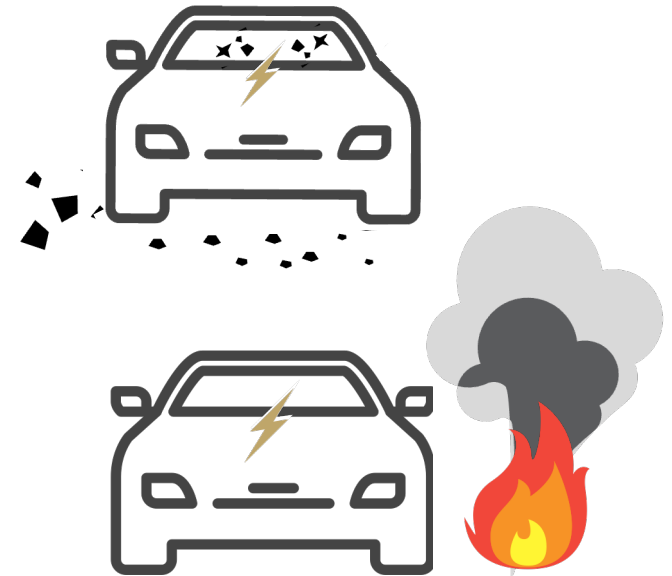
Approx 180,000 EVs on the road in Australia

Six EV battery fires, all caused by damage to the battery pack from:

- Arson x 1
- External fire (structure burnt down) x 3
- Collision x 1
- Road debris x 1

None of the EVs:






- Were on charge at the time
- Were spontaneous or unexplained
- Caused a vapour cloud explosion





Lithium-ion battery categorisation for emergency response - common uses

Depending on LiB types, emergency response may differ.
We created the following to assist departments buildings SOPs.

Category	Smaller Devices	Personal Mobility Devices (PMD)	Utility Task EVs (UTEV)	Road registered EV (EVs)	Battery energy storage systems (BESS)
OEM guidance					
Risk	No ERG Low risk	No ERG High risk	No ERG Moderate risk	Most ERGs available Very low risk	Some ERGs available Very low risk
Response	Submerge	Submerge	Cool - water on HV pack	Cool Burn Submerge	Protect exposures Burn

Personal Mobility Devices

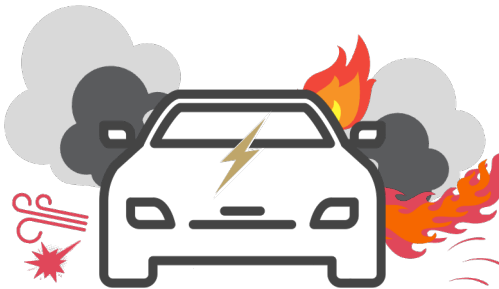
Causing DAILY injuries, fatalities & property loss globally.





First 6 months of 2023...

Passenger EVs



44

Battery fires

15

Injuries

4

Fatalities

Electric buses & trucks



3

Battery fires

2

Battery fire

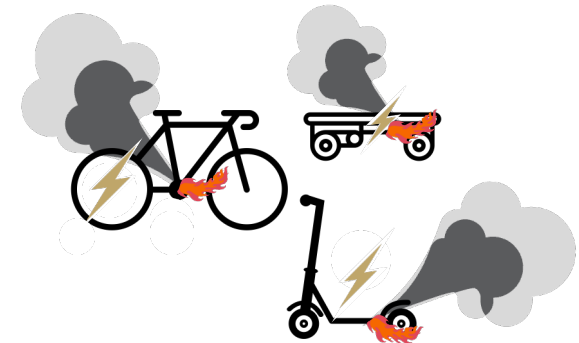
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Injuries

0

Fatalities

Personal Mobility Devices



500+

Battery fires

138

Injuries

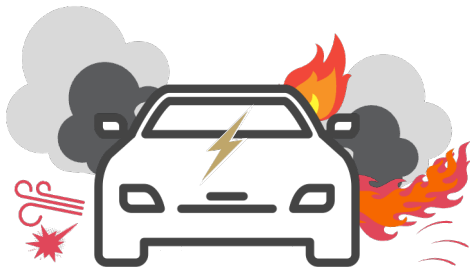
36

Fatalities

Why?

They all use lithium-ion batteries, so why the difference?

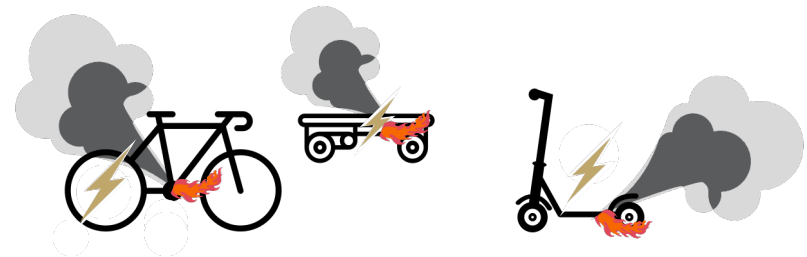
Passenger EVs



Electric buses & trucks



Personal Mobility Devices



- Very high quality LiB cells
- Sophisticated BMS
- Rigorous testing & certifications
- Excellent occupant safety
- Low wear & tear in daily use
- Typically outside / open space

- Often poorly constructed LiB cells & BMS
- No standards or regulations
- Few safety considerations
- High wear & tear
- Stored & charged indoors

FAQs:

“What can extinguish a battery fire?”

- Firefighters
- Time
- Water



What can't 'extinguish' EV fires

To use: choose two people you don't like & are happy to sacrifice to the battery fire Gods...



Solutions?

For EVs use the ABCB Advisory Notice. For EVs & PMDs, we have online information in a report & course format.



FULLY ONLINE, INFORMATION PACKED - ENROL & START ANY TIME!

EV Charging Hubs & Fire Safety

Enroll ~~A\$199~~ **A\$169**

Perfect for ANYONE installing EV charging at ANY site, ANYWHERE in the world! Design, install & maintain safer electric vehicle charging for users & responders...

In this short course, you'll discover

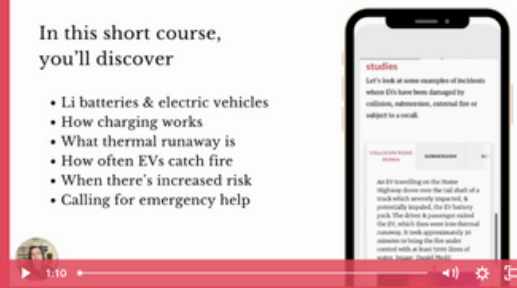
- Li batteries & electric vehicles
- How charging works
- What thermal runaway is
- How often EVs catch fire
- When there's increased risk
- Calling for emergency help

EV FireSafe SMEs, Emma Sutcliffe & Dan Fish with Lithium-Ion Safety expert Prof Paul Christensen

No prior knowledge needed (we'll step you through it!)

~30 minutes

AU\$199.00



evfiresafe.business/course/ev-charging-fire-safety



evfiresafe.com

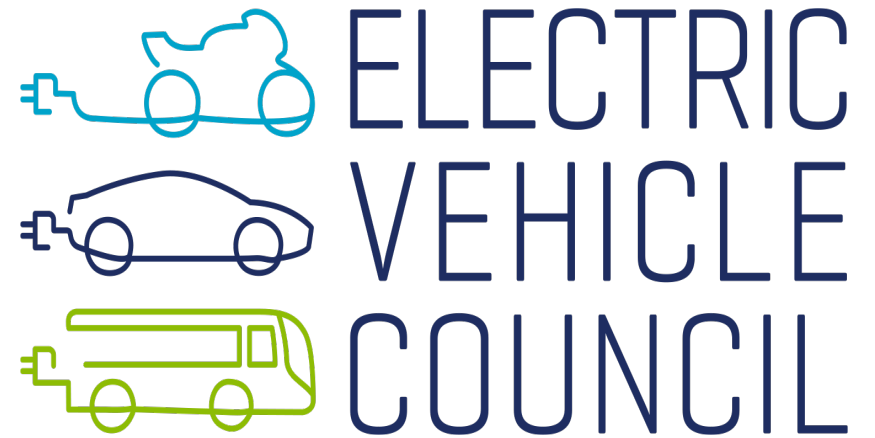
Many thanks for your kind
attention!

Emma Sutcliffe
Project Director
emma@evfiresafe.com



Electric Vehicle Council expert responses and submissions to the EV Fire Risk

Ross De Rango – Head of Infrastructure EVC.



OCN Webinar: Lithium-ion Batteries in Strata

ROSS DE RANGO
HEAD OF ENERGY AND INFRASTRUCTURE



The Electric Vehicle Council (EVC) is an industry peak body.

Our mission is the acceleration of the electrification of transport, with our primary focus being road-registered vehicles.

Our membership includes vehicle manufacturers, energy businesses, electrical equipment manufacturers, fleet operators, etc.

In addition to doing high level policy and advocacy work – New Vehicle Efficiency Standard for example – we get involved in standards, codes, and regulations wherever the vehicles touch the buildings and the energy system.

WHO WE ARE





The National Construction Code and the Australian Building Codes Board

- 2018: EVC saw the need for all new apartment buildings to be 'EV ready'
- 2022: New requirements published along these lines in NCC2022.

The response from the fire services (some openly, some by stealth):

- 2019-2021: opposed efforts to require 'EV readiness' in NCC2022
- 2022: made it public that they consider EVs to be a 'special hazard' under the NCC.
- 2023: opposed EV infrastructure deployment in existing buildings.

The role of the EVC in this domain today?

To call for requirements to be based on evidence, rather than fearmongering.



We make public submissions - links will be distributed.

ACCC:

Road-registered EVs -vs- everything else with a lithium battery in it:

Regulation across whole-of-life of the product.

NSW parliamentary inquiry:

The actual data on how often vehicles burn.

The conduct of individual fire services in this domain.

EVC website guidance:

For existing buildings retrofitting EV charging, don't call a fire engineer.

Call your electrician. Call your insurer.



The data is clear:

- EVs are significantly less likely to burn than petrol/diesel vehicles. They are safer.
- When they burn, existing firefighting techniques have proven effective in Australia.
- There's no demonstrated correlation between charging cars and car fires.

What happens in the unlikely event of an electric car fire in the basement of a building?

Exactly the same thing that happens in case of a petrol car fire

What's the real risk associated with road registered EVs in Strata?

Property values and rental returns.

Fail to support EV charging, and the property is less attractive.

Insurance Council of Australia advice to members

Chris Wood - Emerging Risks Manager Allianz Australia

David Ellis - Director of Technical with Strata Community
Insurance

Living in a world powered by **Lithium-ion** batteries

Emerging Risk – Insurance learnings





An Analysis of 183 fire claims linked to lib's & charging – Allianz Australia

Devices commonly involved

- ❑ eScooters, eBikes & eSkateboards
- ❑ Mobile phones, chargers & cables
- ❑ Drills & other power tools
- ❑ Battery chargers
- ❑ Battery cells
- ❑ Laptops & chargers
- ❑ Remote control (hobby) cars
- ❑ Children's toys (ride on cars)
- ❑ Battery banks
- ❑ e-cigarettes
- ❑ Vacuum cleaners



& where

- ❑ Apartments – inside, often blocking safe exit
- ❑ Carpet – device, cord & charger melts into carpet
- ❑ Laundry & kitchen areas – humidity & heat
- ❑ Children's rooms – bed or carpet as above
- ❑ Lounge / couch – soft furnishings / flammable
- ❑ In/on bed – under pillow, doona, other flammable bedding
- ❑ Office computer & gaming desks – on & under
- ❑ Garages & sheds
- ❑ Work benches - cluttered with flammable items
- ❑ In direct sunlight + hot day
- ❑ Commercial properties



An Analysis of 183 fire claims linked to lib's & charging – Allianz Australia



Childs toy car left on charge in lounge room whilst family sleeping



Repeating themes

- Majority of fires starting whilst device/battery was being charged
- Charging whilst unattended / unsupervised
 - Often whilst people are asleep
 - Hours / days / even weeks after fully charged
 - High reliance on device to manage charging safety
- Unknown history of device, batteries, cables or point of purchase or online
- Charger/cables not always that supplied or specific to device
- Often unable to determine if the device, battery, charger, or cable was the cause

- As an industry we recognise the significant environmental benefits of transitioning to electric vehicles as well the benefit of light electric vehicles, mobility equipment and scooters.
- We continue to embrace the fact that insurers can reduce emissions in underwriting by supporting customers to decarbonise their own activities, such as adopting electric vehicles.
- With this transition comes new opportunities, including developing new internal capabilities and investing in research to support improved safety.
- Insurers also recognise we are in a transition phase, and so we are focussing on understanding the unique risks and hazards and opportunities related to this evolving industry.



Three habits to adopt when using lithium-ion batteries:

Safe products

- Purchase products from reputable suppliers. Second hand devices should be checked thoroughly.
- Only use chargers and cords supplied with the device and one that meets Australian Standards.
- Do not modify or tamper with batteries and the devices they power.

Safe charging

- Charge your batteries and devices on hard surfaces. Never charge them on beds, blankets, or carpets.
- Never leave the devices on charge when you go to sleep or leave the residence.
- Do not charge a battery that shows signs of damage.
- Do not charge the batteries or devices while they are hot.
- Avoid places where the batteries or devices may get hot or wet such as in the sun or a hot car.
- Importantly, do not charge a device in an escape area such as a doorway, hallway, or corridor. You could be trapped if there is a fire.

Safety

- Stop using the product if you notice overheating, bulging, leaking, or unusual sounds.
- If you see smoke, flames, or a vapour cloud, call 000 immediately.
- Never throw lithium-ion batteries in your regular waste or recycling collection bins. Many battery-related fires start in household bins, rubbish chutes, and waste disposal areas.

Owners Corporations & Body Corporates

- Risk and Insurance
 - Managing risks in strata
 - Fire coverage
 - Legal Liability
- Is it an increase in exposure?
 - Increased hazard...increased risk
- What implications would there be with strata insurance, if any?
- How the fire risk of EV batteries will affect future insurance premiums?





The Strength of **Experience.**

 stratacommunityinsure.com.au

T 1300 SCINSURE (1300 724 678)

E myenquiry@scinsure.com.au



**RESIDENTIAL
STRATA**



**COMMERCIAL
STRATA**



**COMMUNITY
ASSOCIATION**

What is OCN Doing?

- Continue to support EV charging equipment for road registered vehicles
- Not supporting a ban on e-bikes or e-scooters.
- Developed three educational pieces:
 1. General Li-ion Battery Fact Sheet.
 2. Template by law for OC use considering e-bikes and e-scooters.
 3. Code of conduct to deal with common small li-ion battery powered devices.

All for Just \$200 plus GST for members.

Questions

Questions....

Thank you and close

Next webinar: Strata Disaster – How our research will help your strata community

Thursday 21st March 2024

12-1pm AEDT

Learn more here <https://ocn.org.au/events/>

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