



# Ensuring the safe installation and usage of battery storage systems

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ENERGY  
[www.csiro.au](http://www.csiro.au)



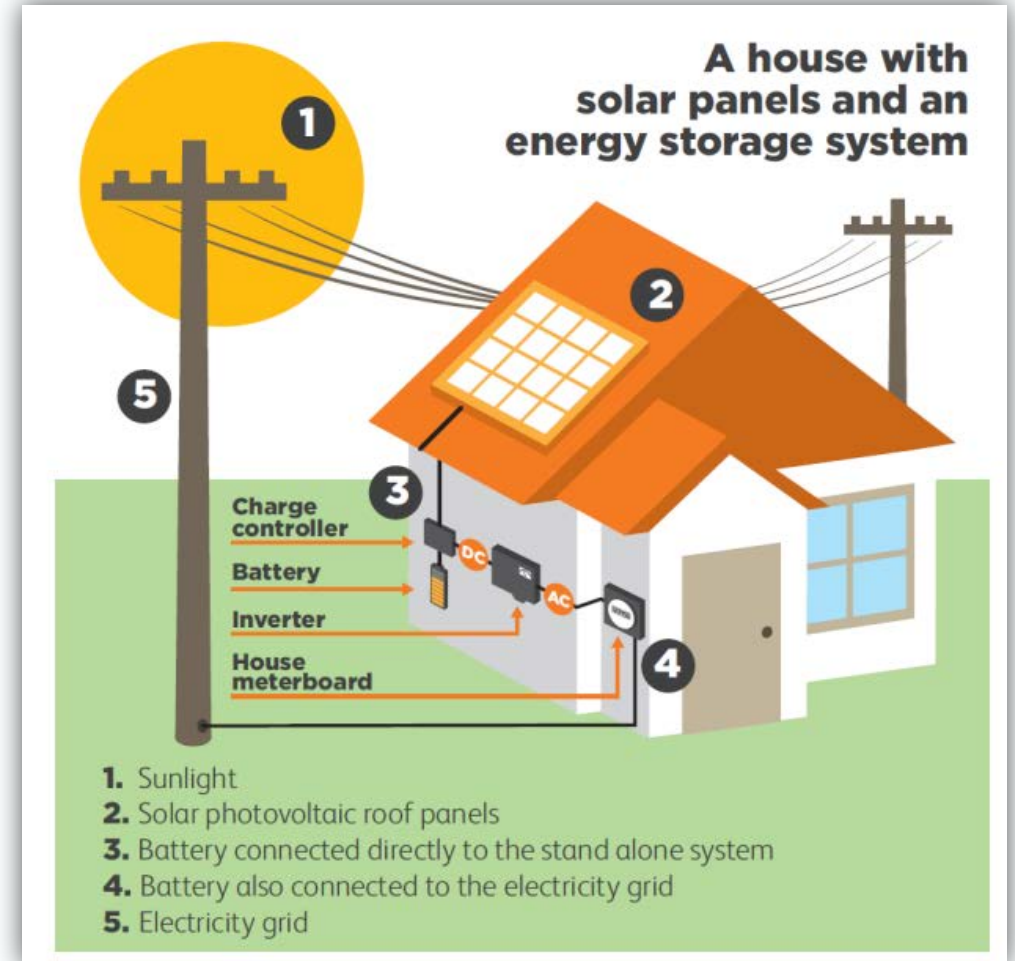
# Outline

- CEC and CSIRO Storage Safety Performance Study (November 2015)
- What has happened since the study?
- What happening now?



# CEC and CSIRO's Storage Safety Performance Study

- Review the literature – national (& international)
- Consulted with all stakeholders- this included battery vendors, solar installers, utilities, general public, etc.
- Presented and reported on key findings and recommendations



# 2015 Study key findings

- Lack of knowledge- technology types, how to care for and operate
- Limited consensus on appropriate response for lithium battery fires
- No national database, and lack of coordination of incident reporting
- Insufficient accreditation and training
- Lack of standards



**GOT QUESTIONS ABOUT BATTERY STORAGE SAFETY?**  
**We've got answers.**

The CSIRO and Clean Energy Council have prepared a guide for consumers and small businesses on the safe installation and use of household and small commercial battery storage systems.

Battery storage is becoming increasingly affordable for the average consumer, and with solar panels now generating power on roughly 1.5 million Australian rooftops, it could be a great option to manage your own power supply and use.

Battery storage does have its safety issues and risks. When used properly and well looked after battery storage is safe, but it's important to be aware of the relevant risks so they can be properly managed.

If you have already purchased battery storage or are giving it some serious thought, the Battery Storage Safety Consumer Guide answers a range of common safety questions on everything from how to seek out a qualified person to safely install your system, to storage, monitoring and recycling.

To view the guide as well as other information on how to install both solar and battery storage, visit [solaraccreditation.com.au/consumers](http://solaraccreditation.com.au/consumers)

ARENA  
Australian Renewable Energy Agency

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CSIRO

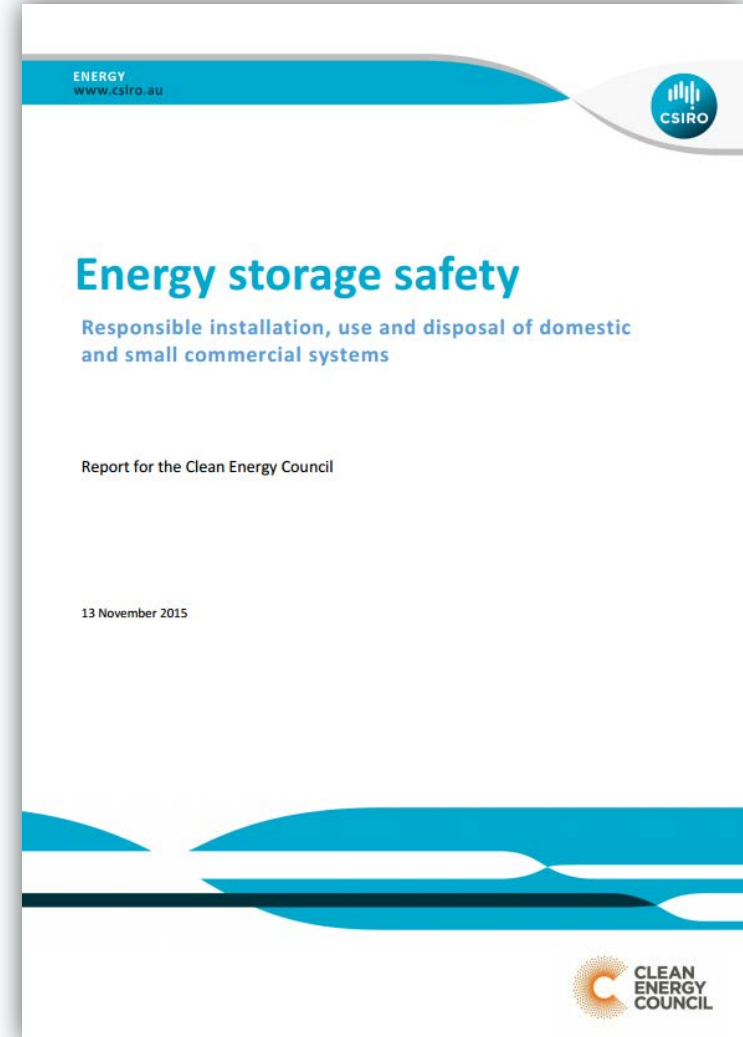
CLEAN ENERGY COUNCIL

# 2015 Study key recommendations

- Educate all stakeholders
- Develop a national database
- Establish a set of best practices
- Develop product and installation standards

For more information see:

<http://www.cleanenergycouncil.org.au/fpdi/reports/storage-safety-study.html>



# What has happened since the 2015 study?

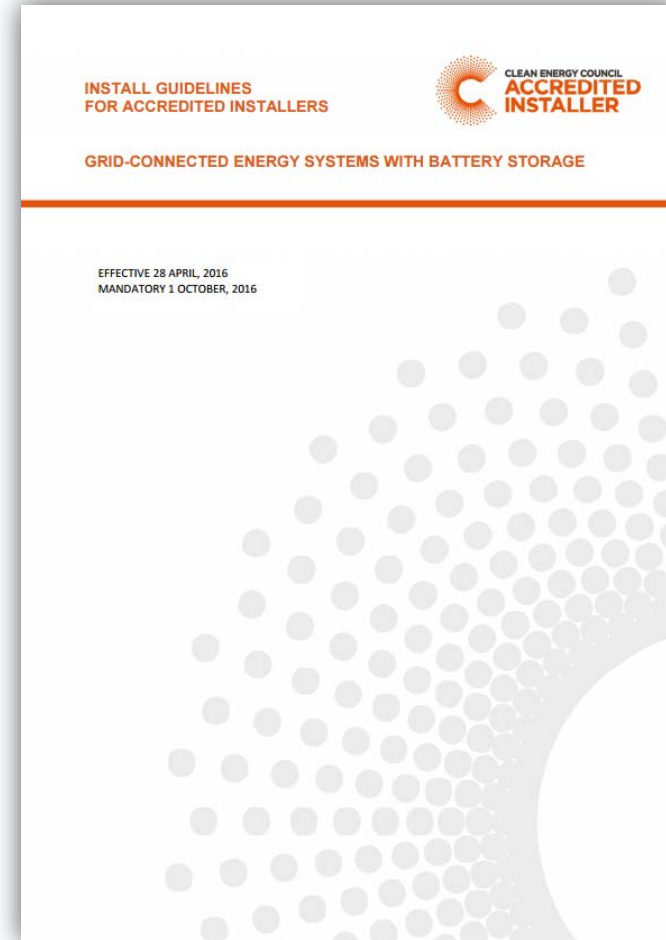
- New residential products coming out every month e.g. GCL, Zcell, Evergen, etc.



- (Number of battery incidents in the media e.g. Hoverboard)

# What has happened since the study? (cont.)

- ACT Next Generation Renewables Program – heavily reference CEC/CSIRO Storage Safety Performance Study
- CEC battery storage install(er) guideline <http://www.solaraccreditation.com.au/installers/compliance-and-standards/accreditation-guidelines.html>
- Energy Storage Council published “The Australian Battery Guide” [http://energystorage.org.au/wp-content/uploads/2016/05/BATTERY\\_GUIDE\\_WEB.pdf](http://energystorage.org.au/wp-content/uploads/2016/05/BATTERY_GUIDE_WEB.pdf)
- COAG agenda item. ACT, NSW and Victorian government starting to develop policy, etc.
- Australian Standards have completed roadmapping exercise



# What is happening now?

- A lot of media attention
- Technology under constant change. Newer, safer battery technologies been developed, etc.
- A number of Virtual Power Station trials going ahead e.g. AGL, etc.
- Residential battery storage sales accelerating
- AS/NZS 5139 “Safety of battery systems for use in inverter energy systems” development





# Is battery system failure testing needed?

- CSIRO is investigating the need for battery system abusive-destructive testing
- Testing could include:
  - Extreme heating
  - Collision
  - Flood
  - ... Etc.
- Justification:
  - Severity of failure modes e.g. fast vs slow?
  - Clarification of Standards
  - Detect potential issues, and report early



# Thank you

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# Disclaimer

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