



THREATS POSED BY LITHIUM BATTERY FIRES

CalRecycle Workshop Summary – November 8, 2018

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THE DANGER OF BATTERY RELATED FIRES AND POTENTIAL SOLUTIONS

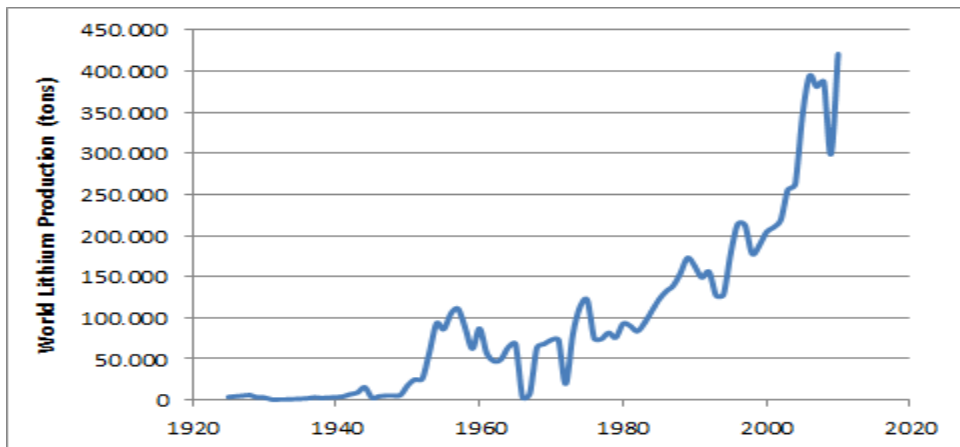
Perspectives:

- National:
 - RRS
 - Fire Rover
- Recycler: ERI
- Manufacturer: Call2Recycle
- Local Government: Rethink Waste



POWER & CONVENIENCE VS. UNLEASHING POWER

“The Li-ion (battery) is the backbone of the mobile electronics revolution, with some calling its impact as big as the transistor’s” - *Fortune*

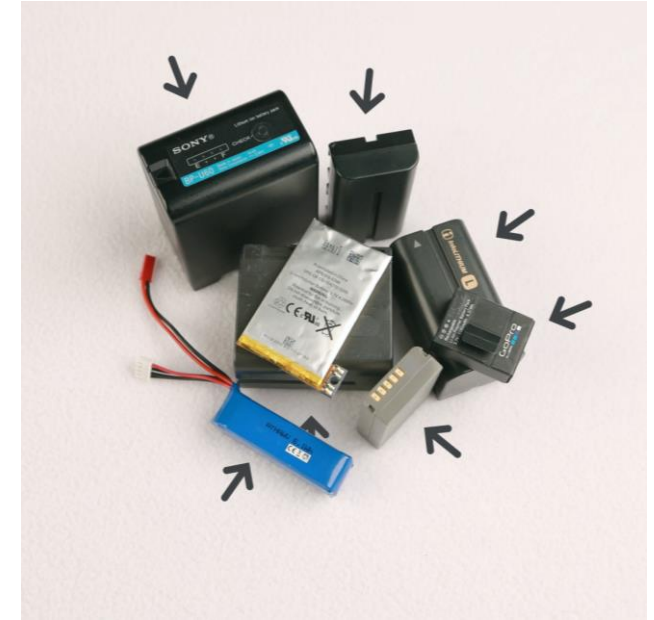


Lithium-ion battery technology is not intrinsically safe. Short circuit, overcharge, over-discharge, crush, and high temperature can lead a thermal runaway, fire, and explosion” – UL Laboratories



Compared to 2010 Lithium batteries are:

- 60% more powerful
- 55% lighter
- 40% cheaper



Consumption (last 12 months):

575 Million units = 175 Million pounds produced



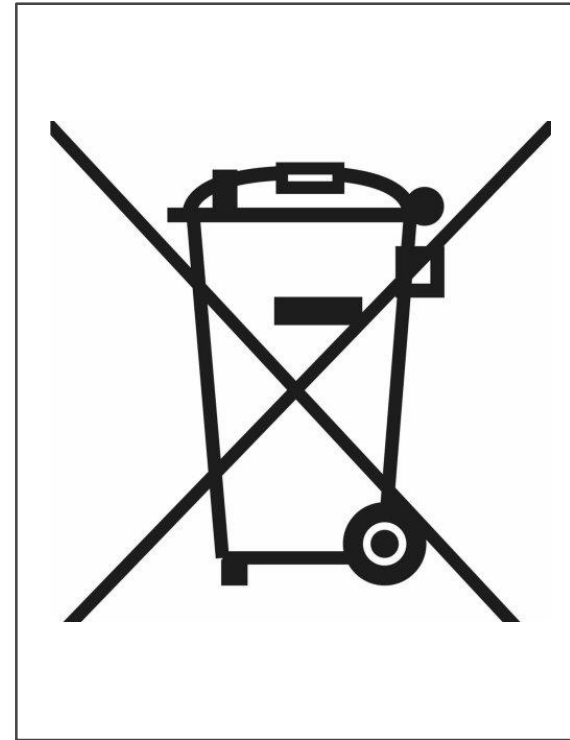
FIRES IN THE RESIDENTIAL RECYCLING SYSTEM

- Lithium Batteries are easily damaged during collection and material recovery:
Crushed - Punctured – Ripped – Dropped
- Waste Management urges the public to “recycle right” this holiday season.
- Past 12 months:
369 Fires Reported
Presumably there were a total of 1,800
Impacted 40% of the recovery industry.
5 Deaths and 12 Injuries



LABELING CAN BE CONFUSING SENDING THE WRONG MESSAGE

- 31,000 different configurations and sizes
- Some with European symbols
- Recycling symbol and/or No Can symbols lead to confusion
- Could be construed as “Do not put in the garbage, instead put battery in the recycling bin”



ACCORDING TO THE CALIFORNIA PRODUCT STEWARDSHIP COUNCIL (CPSC)

- 26 respondents from 22 waste facilities
- 56% of the reported fires were due to batteries
- 44% made up traditional hazards of combustibles





EVERYONE BLAMES THE BATTERIES, BUT IT IS THE NEED OF EDUCATION THAT WILL LEADS TO PREVENTION, EARLY DETECTION, AND FIRE ELIMINATION

Fire Planning:

- Fire Safety Plan Covering Fire Prevention
- Early Detection
- Emergency Response
- Daily Operation Protection
- Targeted Suppression
- Outdoor Material Pile Fire Elimination

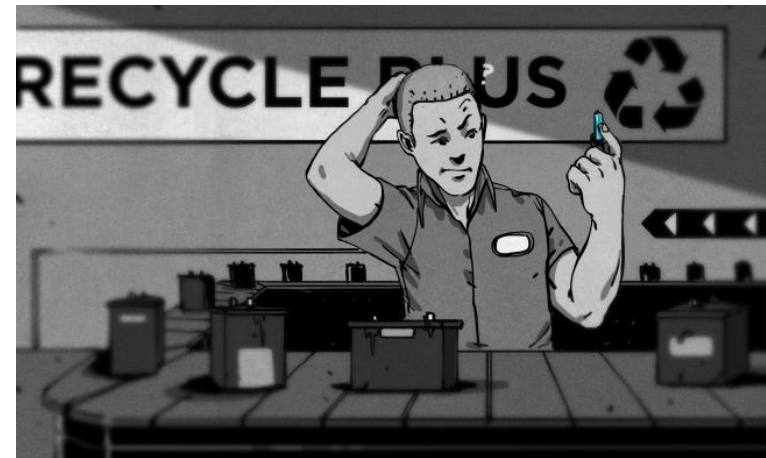
Recycling Lithium-Based Batteries: Residents

- A Spent Battery Isn't
- Don't Remove Non-Removable Batteries
- Tape or Bag Damaged Batteries
- Curbside is Seldom Wise
- locate a disposal facility



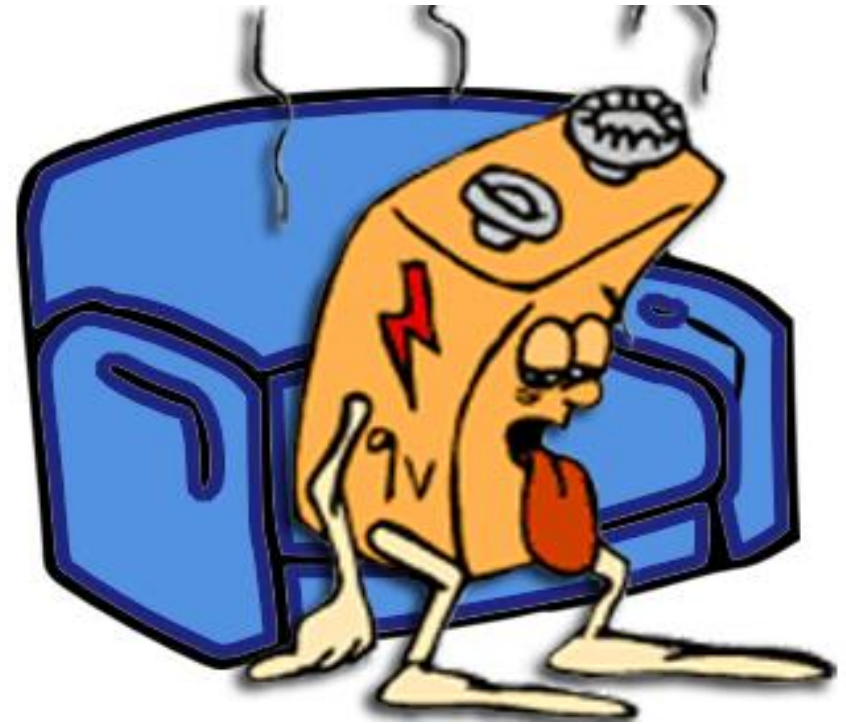
Recycling Lithium-Based Batteries: Scrap Industry

- Running with Scissors
- Stormy Weather
- Fire and Ice
- Separate but Equal
- Proper Handling of Batteries



SOUTH BAYSIDE WASTE MANAGEMENT AUTHORITY (SBWMA)

- Brown County Lithium-Based Fire
 - I. \$8.5 Million cost damage
 - II. Recovery facility down for three months
- Lithium batteries will continue to cause fires
- LEA Efforts:
 - I. Continuing Data-build from Counties
 - II. Train on identification
 - III. Increase Fire Watch
 - IV. Suppression System
 - V. Causes counting of Incipient Fires





DRY CELL BATTERY MANAGEMENT LAW

PRC 15015(a) – Rechargeable Battery

PRC 15011 – Rechargeable Consumer Product

PRC 15013 (a) and (b) – Consumer Product Requirement

PRC 15014 - Exceptions

