

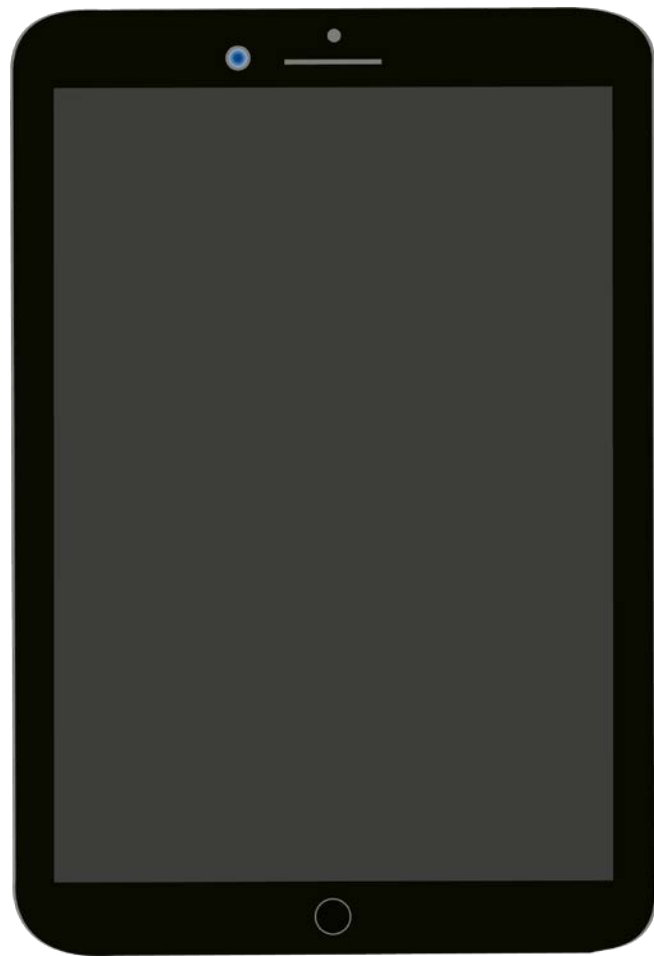


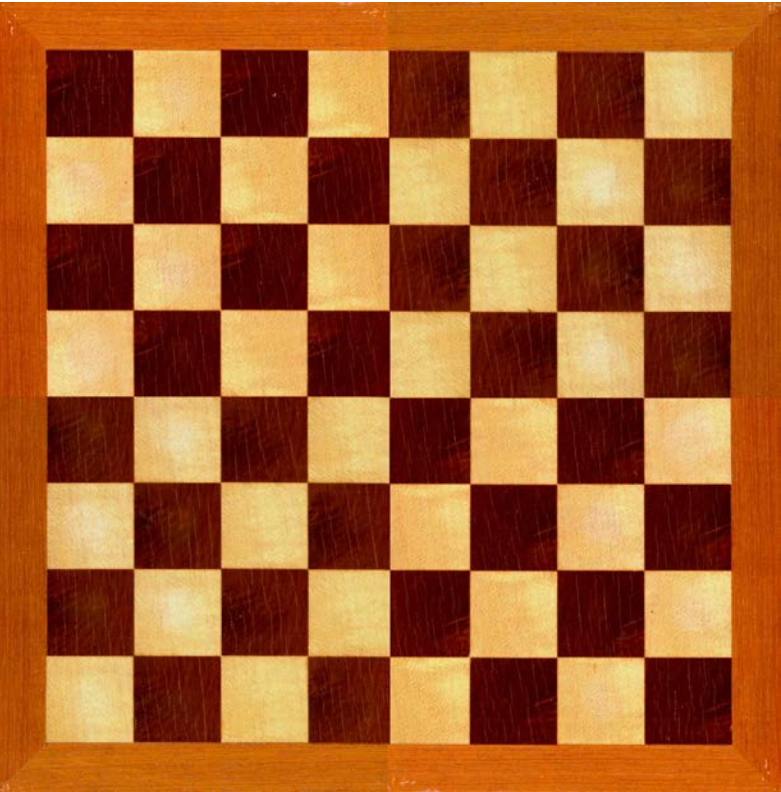
# Recycling as Risk Management

Sean Plasse  
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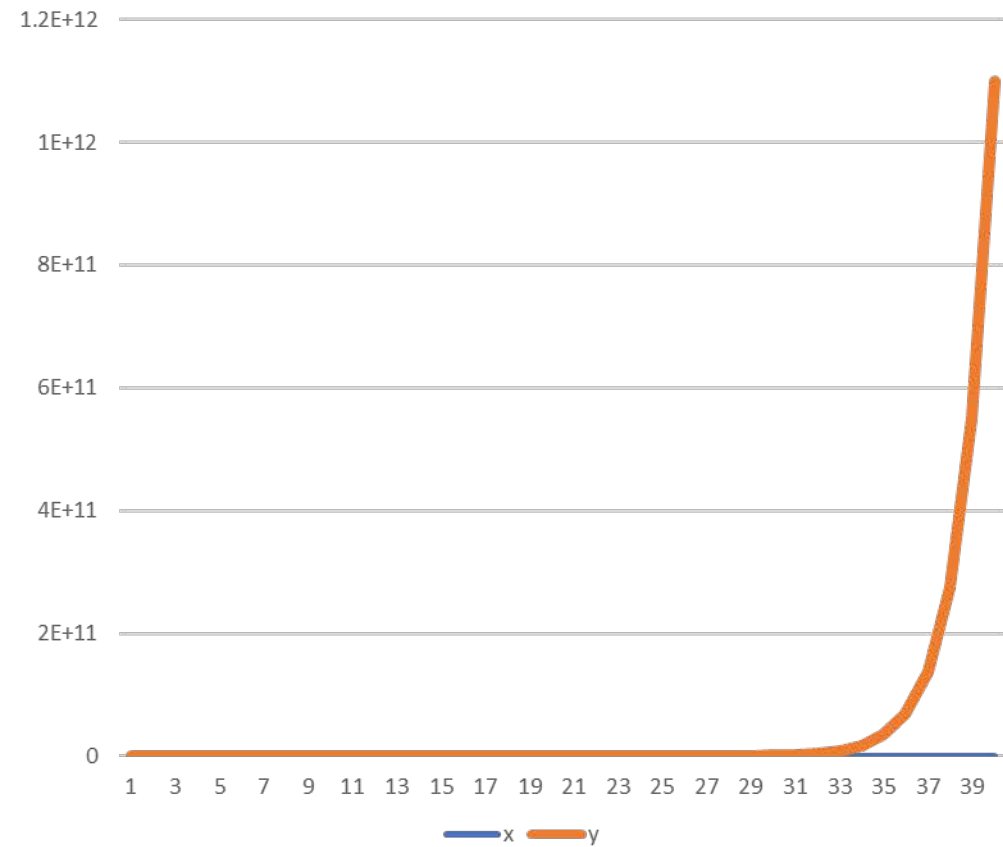
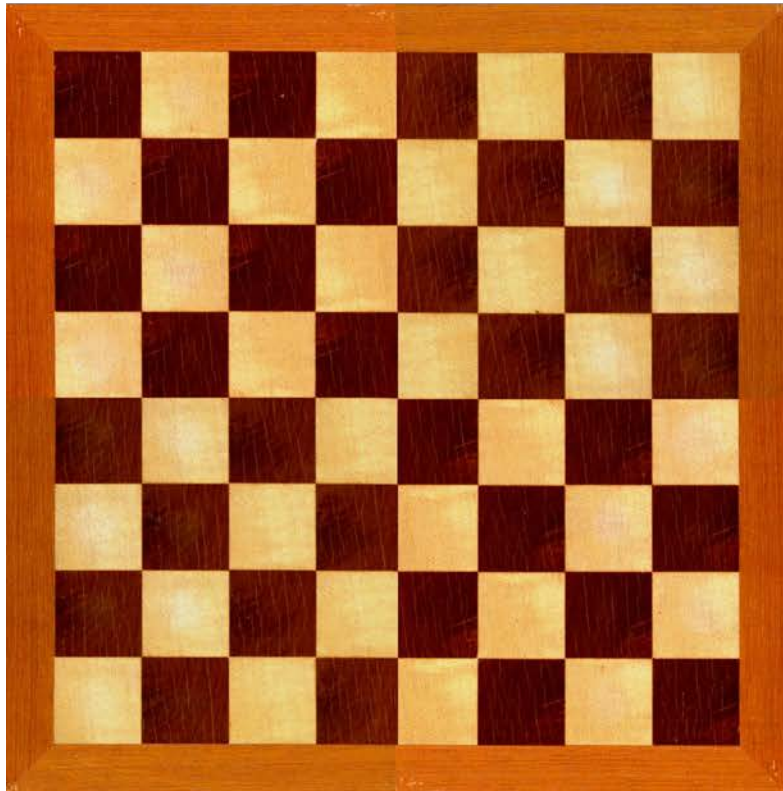
# Tioga County, NY January 2020







# Innovation: Second Half of the Chessboard



# Convergence

Integration of disparate technologies  
into single integrated system.

HD Video, 3D VGA, AI, 5G Cellular, Lithium Batteries, Etc.



## Emergence

**An entity's properties emerge from parts interacting but are not found in the parts themselves.**

**$H_2 + O = H_2O$**

**$3 + 5 = \text{Cheese}$**



**The future cannot be predicted by the present.**

## Lithium Batteries

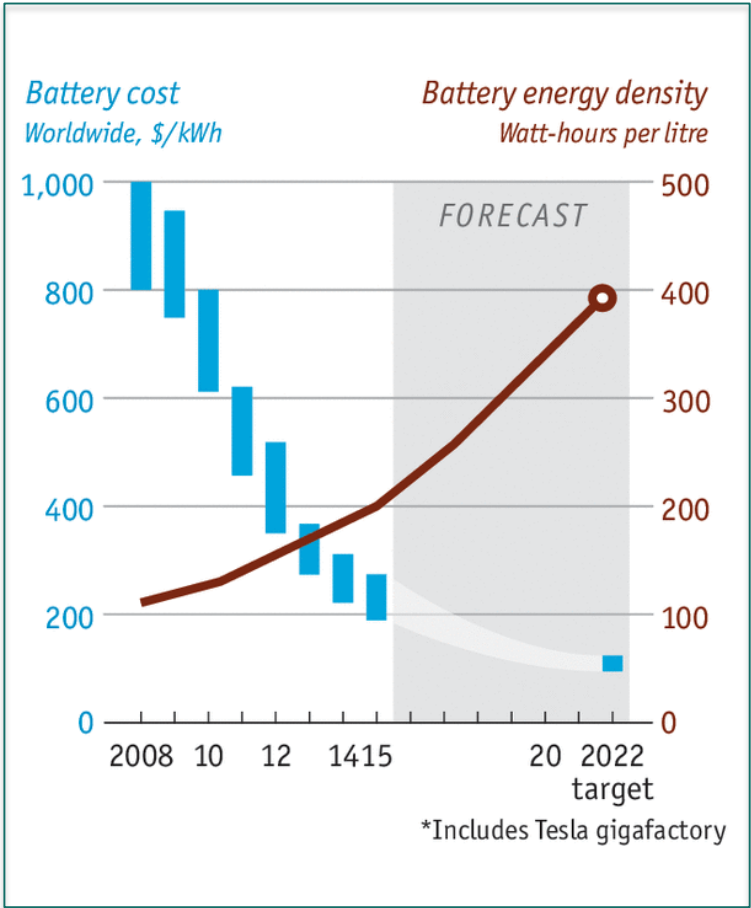
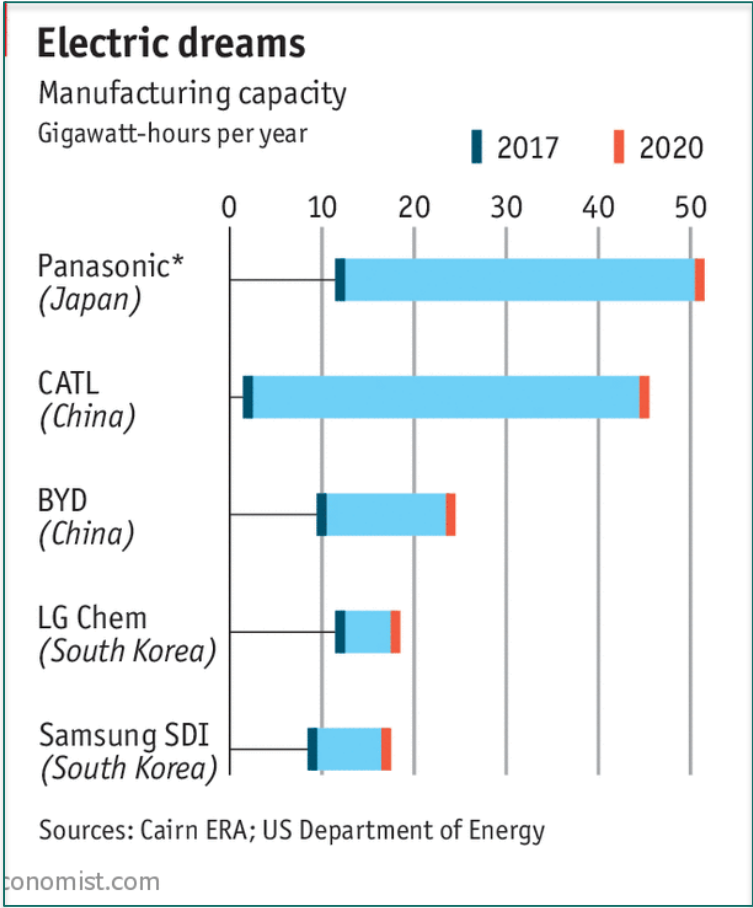
**“They have laid the foundation of a wireless, fossil fuel-free society, and are of the greatest benefit to mankind.”**



**Winners of the 2019 Nobel Prize in Chemistry  
John B. Goodenough, Akira Yoshino, M. Stanley Whittingham**



# The Dynamic Lithium Battery Market



## Internet of Things (IOT)

**2020 - 10 billion**

**2025 - 62 billion**

**400% Increase in Lithium Manufacturing Capacity**





# The Crap App



**How will you manage**

**convergence  
and  
emergence?**

# Innovation Outpacing Regulation and Legislation

**Market Share**  
**Embedding, Packaging**  
**Overseas Manufacturing**  
**Internet Sales and Services**





## **Recycling as Environmental Management**

## **Recycling as Risk Management**





**Non-profit – Atlanta - Founded in 1994.**

**Steward Fees, Fee-Based Services.**

**U.S. is voluntary program except in certain states.**

**Over 144 million pounds of consumer batteries recycled.**

**16,000 publicly accessible sites.**

**Collection and recycling program offered at no cost to consumers.**





**The country's largest, most reliable battery recycling program.**

**Over 32 million pounds of lithium ion recycled.**

**Then this happened...**

## Call2Reycle's Defining Moment - June 5, 2017



[Video Link](#)



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## Stewardship Services

If you are a battery or product manufacturer, Call2Recycle can help fulfill your recycling requirements in the U.S., including compliance with extensive state and federal regulations.



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## Product & Battery Return Management

Customized solutions for battery & product return services, including recalls, damaged products, deinstallation of large battery banks and warranty returns.



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## Collecting & Recycling

Whether you're looking to start a public-facing program, set-up an internal battery recycling program or have a one-time need, Call2Recycle offers flexible, safe and convenient options.

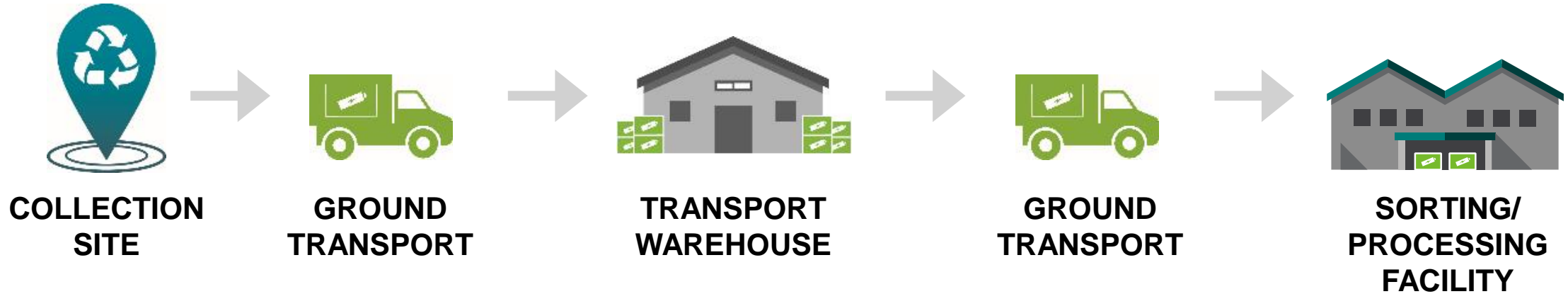


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## Battery Protection & Fire Suppression

As the exclusive distributor of CellBlock FCS products, Call2Recycle offers safe handling, storage and shipping solutions to minimize fire risks.

# Where does a used battery go?



**Safety is important during every step of the journey.**

# Recycled batteries are turned into new products.



**NEW  
BATTERIES**



**STAINLESS  
STEEL POTS  
& PANS**



**GOLF CLUBS**



**SILVERWARE**



**ASPHALTS  
FOR ROADS**

**No batteries to landfill, domestic or overseas.**



## **SERI - Sustainable Electronics Recycling International**

**Non-profit dedicated to the responsible reuse, repair, and recycling of electronic products.**

### **R2 Standard**

**Common set of processes, safety measures, and documentation requirements for businesses that repair and recycle used electronics.**

**R2 is rigorously and independently audited, emphasizing quality, safety, and transparency.**

# Call2Recycle Downstream Oversight

Required Safety Training

Monitoring and Auditing

Suspension / Termination for Violations

National/Regional Communications

Research – Best Practices and Equipment



# Main Reasons Consumers Do Not Recycle Batteries



**Don't know what to do.**

**It's inconvenient.**



# Hoarding Trash Wishful Recycling



# Findability and Accessibility

**WHERE WOULD YOU LIKE TO RECYCLE?**

wrentham ma 10 miles

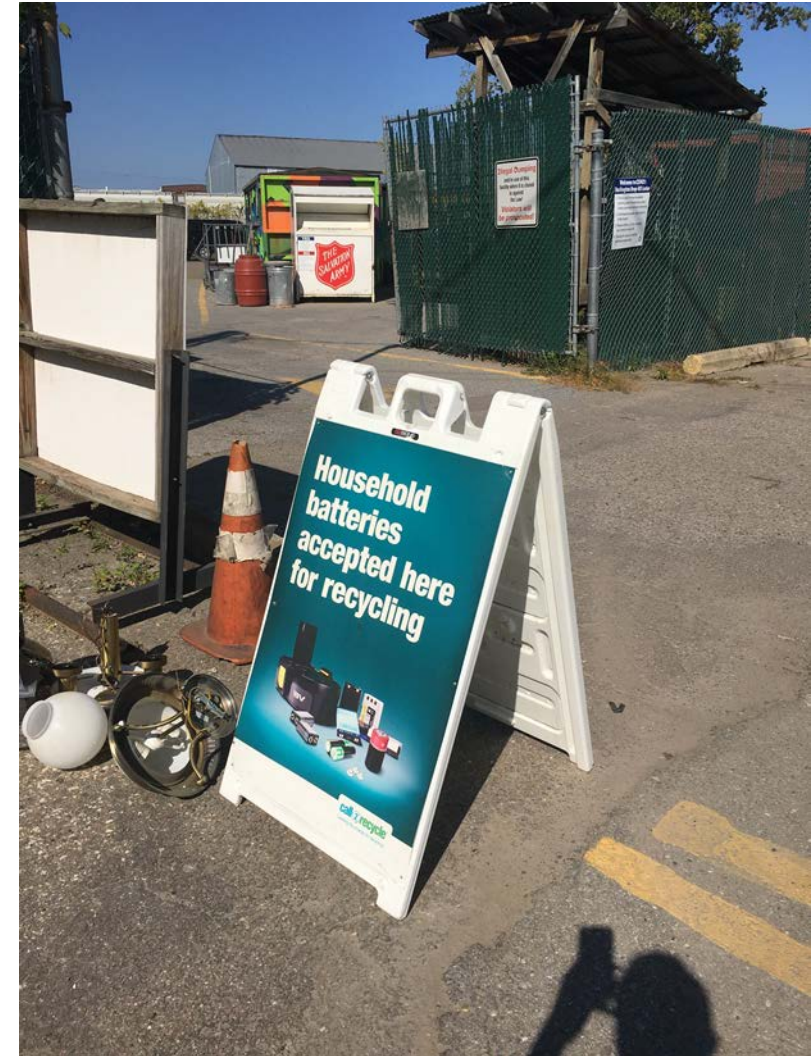
**WHAT WOULD YOU LIKE TO RECYCLE?**  
Click to add or remove from results

- RECHARGEABLE BATTERIES
- SINGLE-USE (PRIMARY) BATTERIES  
*Why single-use batteries are different.*
- CELLPHONES

Purchase a mail back kit from [our store](#).

**13 LOCATIONS NEAR YOU**

# Websites and Signage



# Battery Identification Challenges

Batteries are flooding the market from overseas in all products.

Chemistries are hard to identify.

Counterfeit batteries from other countries.



## **Two Battery Types**

**Primary – One and done.  
Rechargeable – Use it more than once.**

**Latin Roots  
Prime (one)  
Re (repeat)**

# Accepted Primary (Single-Use) Batteries

**Call2Recycle accepts primary batteries  
each weighing less than 11lbs (5kgs).\***



**Alkaline**



**Lithium Primary**

*\* Select collection sites have opted into Call2Recycle's fee-based program for primary batteries. Check to see if your collection site is one of them.*

# Accepted Rechargeable Batteries

Call2Recycle accepts rechargeable batteries each weighing less than 11lbs (5kgs).



Nickel Cadmium (Ni-Cd)



Lithium Ion (Li-Ion)



Nickel Metal Hydride (Ni-MH)



Small Sealed Lead Acid (SSLA/Pb)



Nickel Zinc (Ni-Zn)

# Rechargeable Battery Terminals Must be Protected



**They hold residual charge when appearing dead.**

**If terminals contact other batteries or metal,  
risk of spark, smoke, fire.**

**When in doubt, PROTECT!**



# Must Ship Batteries to U.S. DOT Guidelines\*

**ONE rechargeable battery per bag (or taped individually).**

**Call2Recycle boxes include self-sealing clear plastic bags.**

**\*U.S. DOT has specific terminal protection requirements.  
For a complete list visit [Call2Recycle.org/safety](https://www.call2recycle.org/safety).**



**When clear plastic bags not available,  
surround the battery with packing tape.**



**For button/coin cells, make a ravioli.**

**CLEAR packing tape, sticky side up.**

**Button/coin batteries on the tape with space between each battery.**

**Cover with a second layer of CLEAR tape.**



**Do not use any of the following for protecting battery terminals.**

**Do not put anything else in the box.**



**Grocery bags**



**Paper bags**



**Paraffin or other dipping products**



**Masking tape**



**Scotch tape**

# Research and Development of New Containers

DOT approved for 4 ft drops with 66lbs.

Fire retardant box liner.

Display, collections, storage.

No cost to municipal waste and recycling facilities for rechargeable batteries.



# Flame Retardant Liners

Patent approved, flame retardant box liner.

Third-Party Tested - Extensive testing by independent laboratory, withstood up to 1,100 degrees F.

Containment - Prevents flames & heat from spreading outside the box.



# Call2Recycle Online Store



FIND A DROP-OFF LOCATION:

REGION

[RECYCLING 101](#)

[COLLECTION PARTNERS](#)

[STEWARDS](#)

[SAFETY](#)

[NEWS & RESOURCES](#)

[CONTACT US](#)

## Call2Recycle Store

[Home](#) > [Call2Recycle Store](#)

Search



### Battery Collection & Recycling Services

Charge up battery recycling with best-in-class recycling solutions that are convenient, compliant and safe. Call2Recycle offers turnkey and flexible options to ship in boxes or in bulk. [Contact us](#) at 1-877-723-1297 to learn more about these services or to discuss your recycling needs in more detail.



Large Nested Battery & Cellphone Recycling Boxes

\$115.00

Add to cart



Large Battery & Cellphone Recycling Box

\$65.00

Add to cart



Small Battery & Cellphone Recycling Box

\$45.00

Add to cart



Pallet of 50 Small Battery & Cellphone Recycling Boxes

\$600.00 – \$2,000.00

Select options



Pallet of 50 Large Battery & Cellphone Recycling Boxes

\$750.00 – \$2,500.00

Select options

## CellBlockEX



**Fire-suppression material made from 100% recycled glass.  
Safe battery handling, storage and shipment.**

**For Class A, B, D and K fire loads, i.e. lithium-ion battery fires.**

**Displaces oxygen, absorbs energy and suffocates the fire.**

**Low dust content.**

**Extinguishes flames without the mess or dangers typically associated with water, vermiculite, pumice or sand.**

**Unaffected by heat, moisture and chemicals.**

**Binds liquids, gases and vapors, absorbing approximately 200% of its own weight.**

[CellBlockEX Video](#)



# CellBlock Drums for Storage and Transportation

Transport lithium-ion batteries when packaged with CellBlockEX.

Access to DOT Special Permit 20549 for transporting DDR lithium-ion batteries, providing relief from standard shipping and training requirements.

Innovative drums are lined with CellBlockEX granules in the perimeter and base to filter heat, smoke and fumes.

Includes lid with pressure vents.

Available in 4 sizes.

Reusable.



# CellBlock Lithium Fire Incident Kits



[CellBlock PEDPad Fire Video](#)

# DDR Batteries

**Damaged, Defective, Recalled LITHIUM batteries.**

**A Department of Transportation statutory term that ONLY applies to lithium batteries.**

**There is no such thing as another type of DDR battery.**

**EPA – Determines ‘hazardous waste.’ Example, NiCd Battery.  
DOT – Determines ‘hazardous material.’ Only Lithium DDR Battery.**



# CellBlock DDR Kits

**Safely and compliantly recycle DDR lithium-ion batteries with this U.S. DOT approved recycling kit.**

**Recycle up to 11 lbs. of lithium-ion batteries.**

**CellBlockEX non-combustible mineral based safety granules.**

**U.S. DOT Special Permit 20549 that fully complies in transporting hazardous materials.**

**Pre-paid shipping and recycling. Order online.  
[www.call2recycle.org](http://www.call2recycle.org)**





Leading the charge for recycling.™

thank you!

**Sean Plasse**

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