



NextCycle
POWERED BY RRS

Accelerating Solutions for Batteries to Grow the Circular Economy

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Michigan's Sustainable Path to Battery Circularity

Industry Engagement

Education

Funding

Data

Initial Focus:



Consumer single-use batteries
(alkaline, button, etc)



Consumer rechargeable batteries
(lithium-ion, nickel-metal hydride, etc)

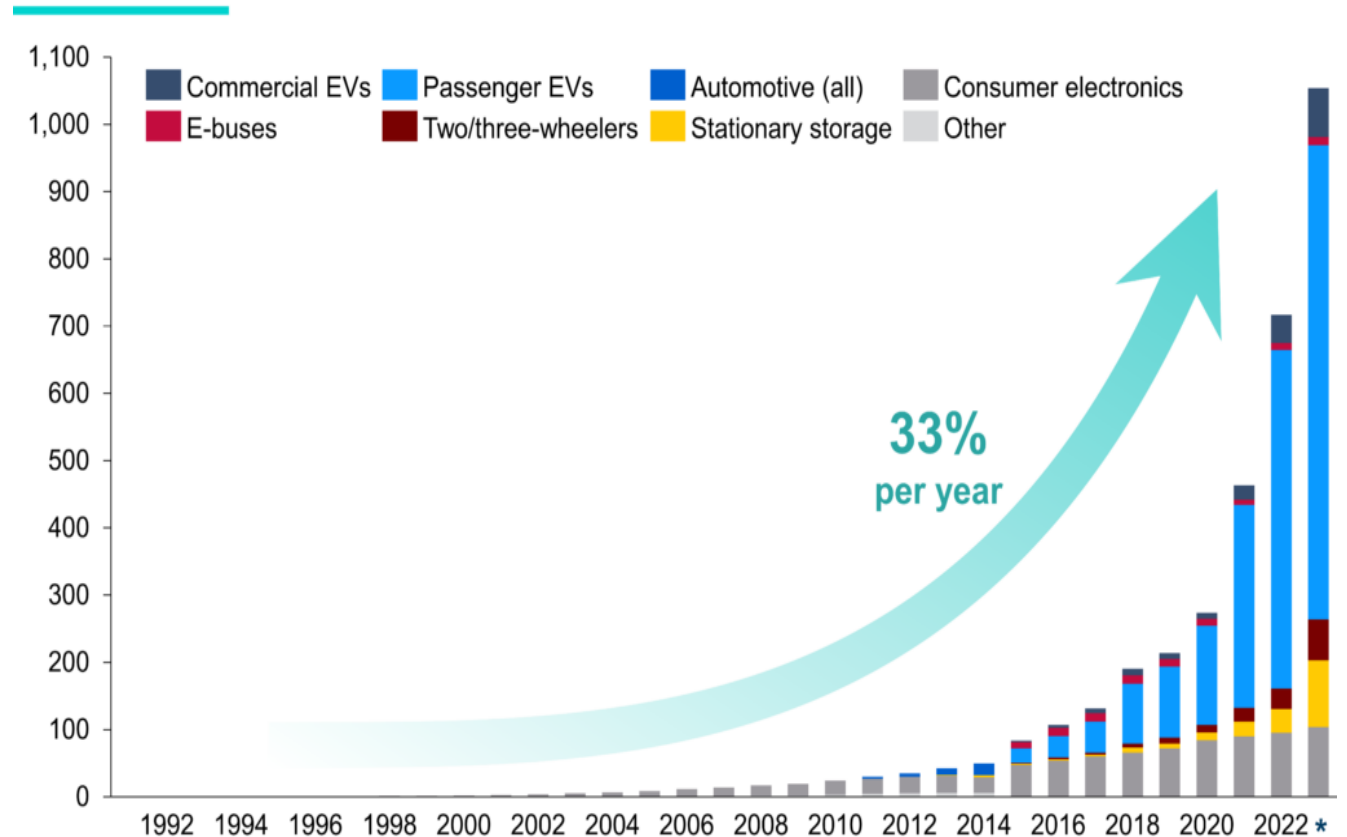


Electric Vehicle batteries and large-format battery units

Battery Projections

US Battery Market is expected to grow by 15% from 2024-2031

Global Battery Sales by Sector (GWH/y)



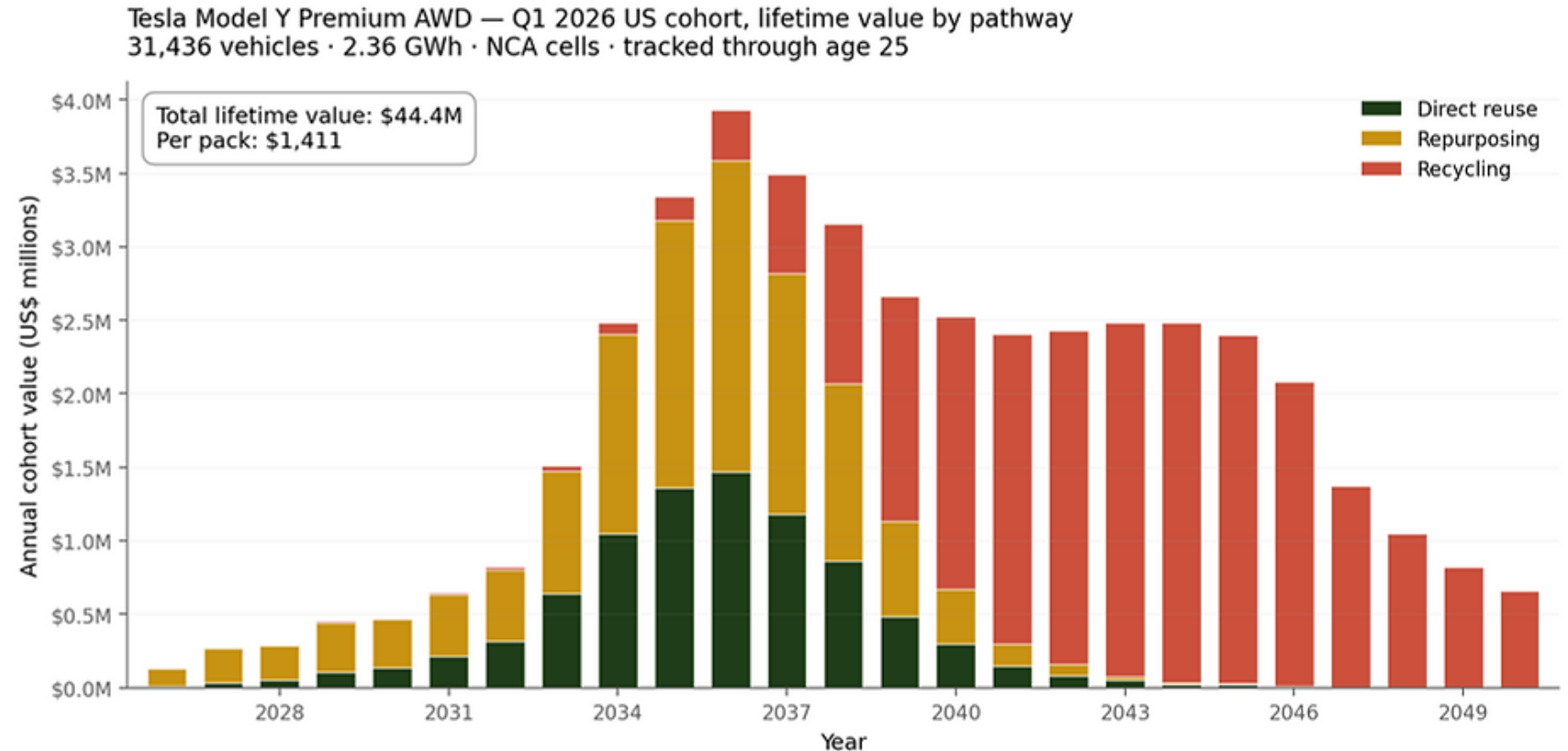
Source: Ziegler and Trancik (2021), Placke et al. (2017) for 1991-2014; BNEF Long-Term Electric Vehicle Outlook (2023) for 2015-2022 and the latest outlook for 2023 (*) from the BNEF Lithium-Ion Battery Price Survey (2023)

Battery Projections

EV Batteries lasting longer than projected

Reuse applications delaying when recyclers will get material

Tesla Model Y Lifetime Value



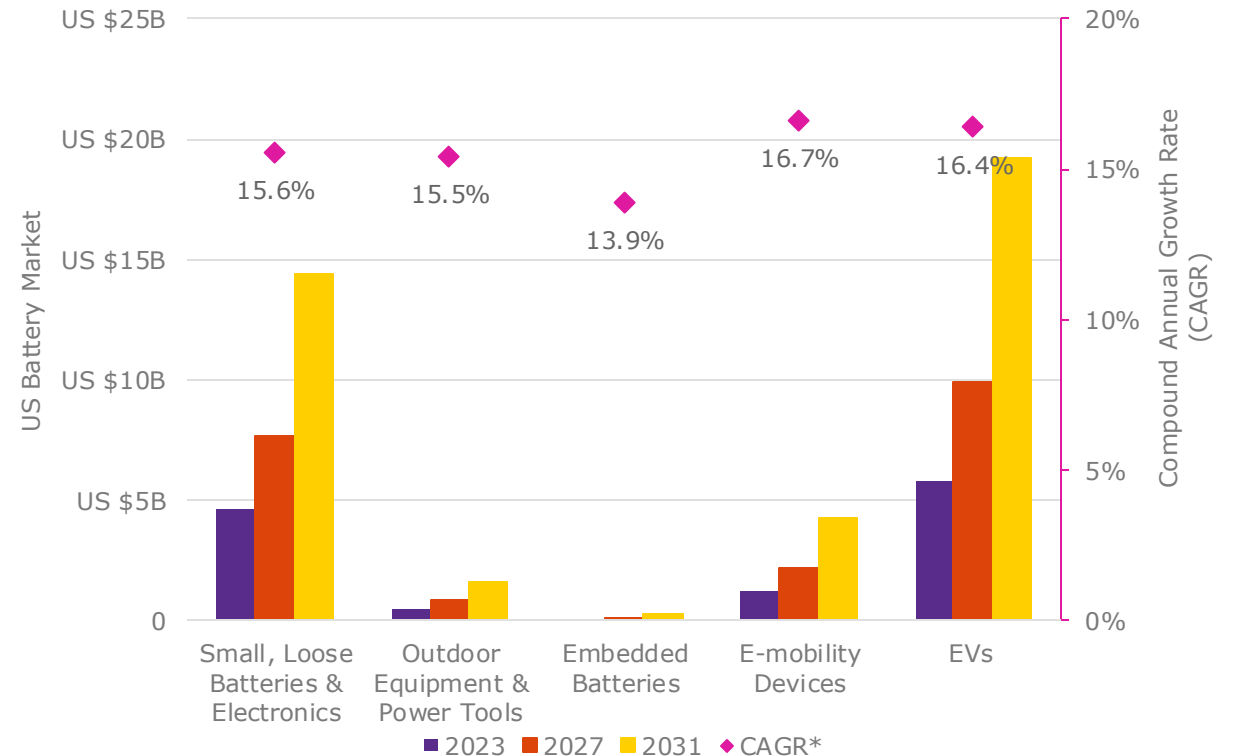
Source: CES Research & Consulting (2026), 'The reuse pivot, the recycling stumble, and what the data actually says.'

Battery Projections

Important to look across types and formats:

- Small, Loose Batteries & Electronics
- Outdoor Equipment & Power Tools
- Embedded Batteries
- E-mobility Devices
- Electric Vehicle(s)

Battery Market Landscape



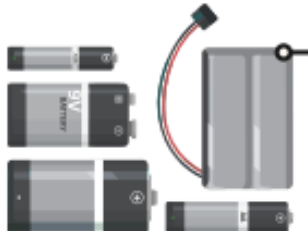
* The Compound Annual Growth Rate (CAGR) shown reflects the average projected growth rate from 2023 to 2031, as calculated by Data Bridge Market Research. This figure is based on current market values and future market forecasts.



2025 Michigan Consumer Battery Survey

The Michigan Department of Environment, Great Lakes and Energy (EGLE) is examining strategies to divert batteries from disposal and support a domestic supply chain for battery recycling. Understanding consumer activity helps inform education and outreach needs, gaps in recovery, and opportunities for battery recycling.

Survey Focus: Small + Medium Format Consumer Batteries

BATTERY TYPE	COMMON FORMS	SELECT EXAMPLES
 Alkaline and Zinc-Carbon Batteries, Lithium Single-Use (Lithium "Primary")	AAA, AA, 9V, Button-Cell, Coin	Watches, musical cards and books, string lights, digital scales and thermometers, cameras, smoke detectors, handheld games, remote controls, hearing aids, medical devices, e-cigarettes/vapes, keyless vehicle entry remotes
 Lithium-Ion Batteries (Li-ion) (Lithium "Secondary") (Rechargeable)	Prismatic (flat), Cylindrical (e.g., 18650), Pouch, Button-cell	Cellphones, e-cigarettes/vapes, laptops, digital cameras, consumer electronics, some small and large household appliances (may not be removable.)
 Nickel-Cadmium Batteries (Ni-Cd) (Rechargeable)	AA, AAA, C, D, 9V, Pack (custom shapes for tools)	Cordless power tools, digital and video cameras, bio-medical equipment
 Nickel-Metal Hydride Batteries (Ni-MH) (Rechargeable)	AA, AAA, C, D, 9V, Pack	Older cellphones, digital cameras, cordless power tools, kids toys
 Nickel-Zinc Batteries (Ni-Zn) (Rechargeable)	AAA, AA	Consumer Electronics, Medical Devices

Estimated Tons of Consumer Batteries Replaced Annually and management Method

A total of 12,430 tons of consumer batteries are estimated as replaced annually in Michigan while only ~10% are captured for recycling programs



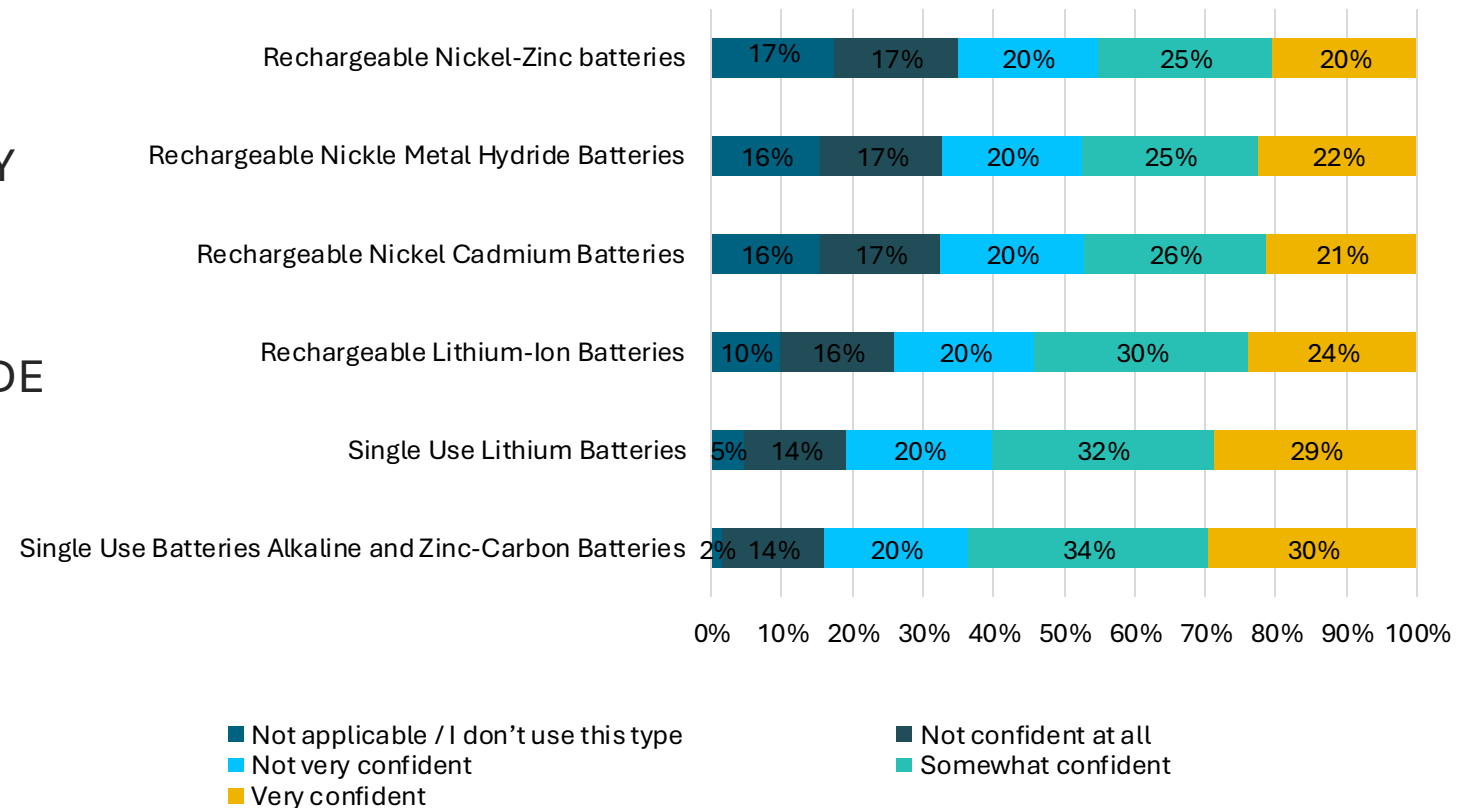
Data Source: Kept at home and recycled: Residential battery survey

Recycling Note: Contamination can still occur in recycling streams. A resident reporting that they “recycled” batteries does not guarantee proper preparation or sorting. For example, batteries brought to a retail drop-off may still be contaminated or handled incorrectly, potentially leading to disposal rather than recovery.

Around Half of Respondents Felt Confident on How to Properly Manage Batteries

PERCENTAGE OF RESIDENTS WHO REPORTED BEING SOMEWHAT TO VERY CONFIDENT IN MANAGING EACH BATTERY TYPE:

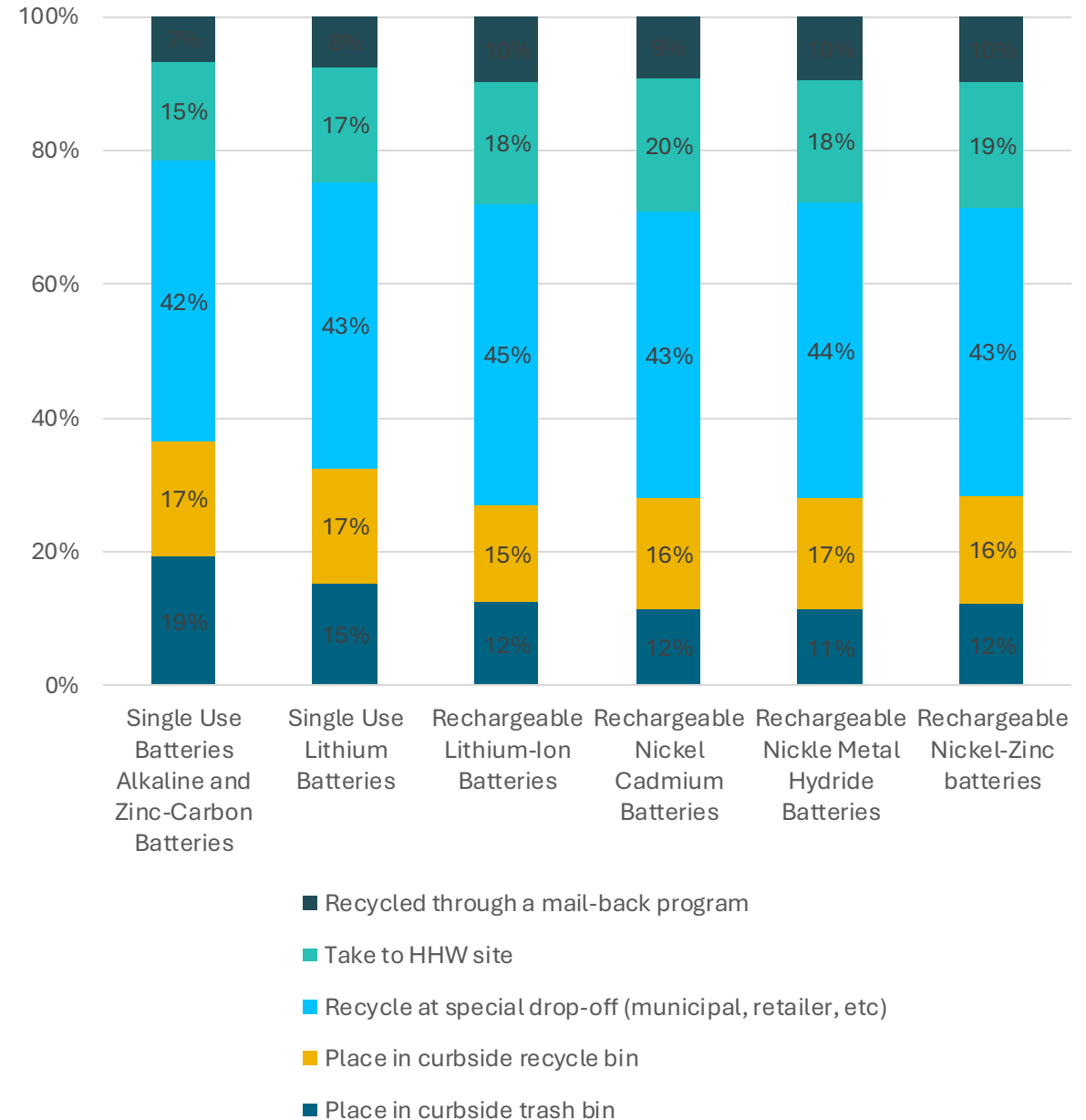
- 45% - RECHARGEABLE NICKEL-ZINC
- 47% - RECHARGEABLE NICKEL HYDRIDE & NICKEL CADMIUM
- 54% - RECHARGE ABLE LITHIUM ION
- 61% - SINGLE USE LITHIUM
- 64% - SINGLE USE ALKALINE



But Confidence Does not Necessarily Translate to Appropriate Management

AT THE SAME TIME, A SIGNIFICANT NUMBER OF RESPONDENTS INDICATED THAT BATTERIES SHOULD BE PLACED IN CURBSIDE TRASH OR RECYCLE BINS:

- 36% - SINGLE USE ALKALINE
- 32% - SINGLE USE LITHIUM
- 27% - RECHARGEABLE LITHIUM ION
- 28% - ALL OTHER RECHARGEABLE CHEMISTRIES



Respondent Reported Battery End-of-Life Management

CURBSIDE WASTE SERVICES – 43%

- 32% of respondents placed batteries in curbside trash
- 11% placed batteries in curbside recycling

BATTERY RECYCLING PROGRAMS – 41%

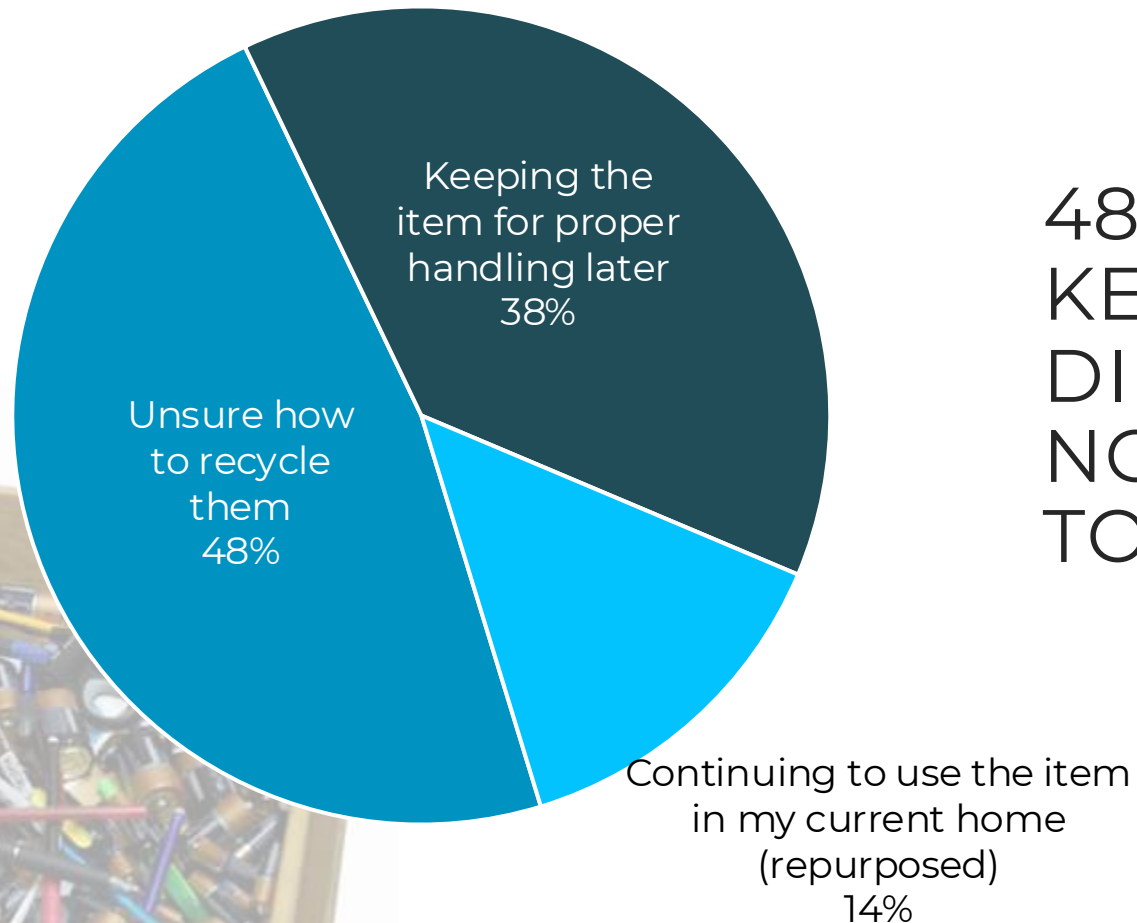
- 13% brought batteries to a retail drop-off location
- 12% used a community or county drop-off program
- 12% brought batteries to a household hazardous waste (HHW) site
- 4% used a battery mail-back program

KEPT AT HOME – 17%

- 17% reported storing replaced batteries at home



Why Batteries are Kept at Home

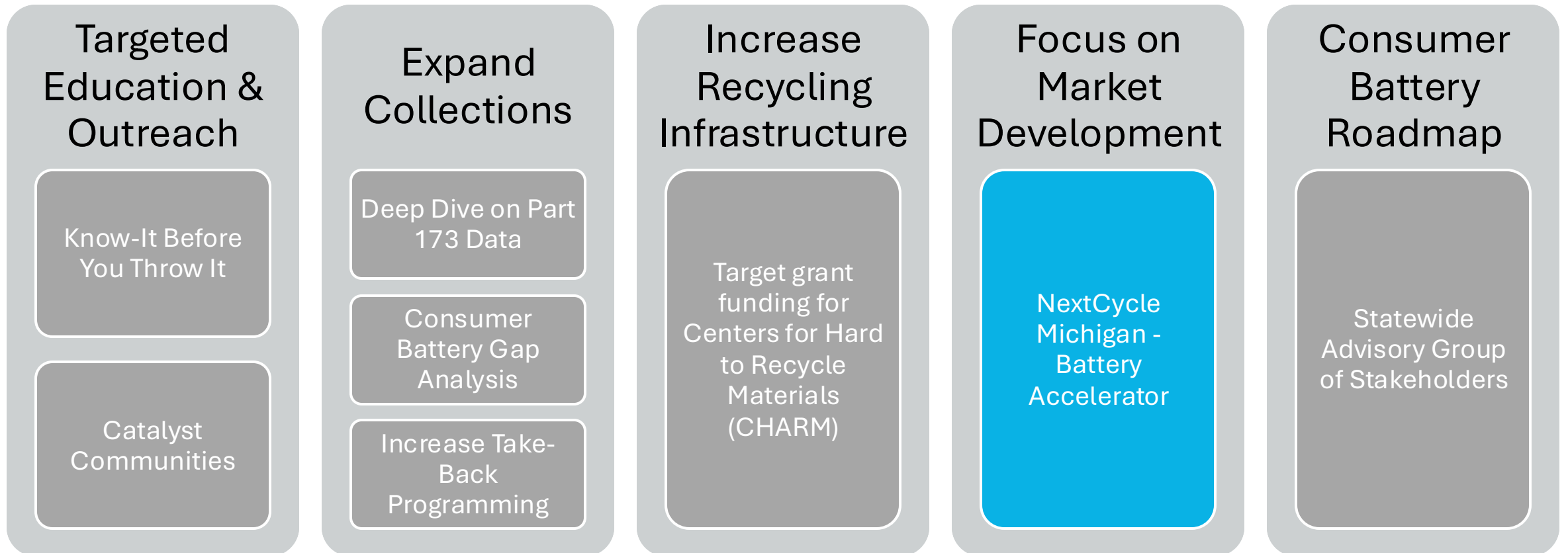


48% OF RESPONDENTS WHO KEPT BATTERIES AT HOME DID SO BECAUSE THEY DID NOT KNOW HOW OR WHERE TO RECYCLE THEM



Michigan's Sustainable Path to Battery Recycling

Objective: To coordinate existing battery funding and program efforts, and to develop a statewide strategy that will enhance outreach, collection, recycling and reprocessing of batteries in Michigan.





Six-Month Accelerator Program



Grant Administration & Funding Strategy



Facilitated Partner & Network Engagement



Pitch Showcase & Investment Readiness



Jobs & Economic Output



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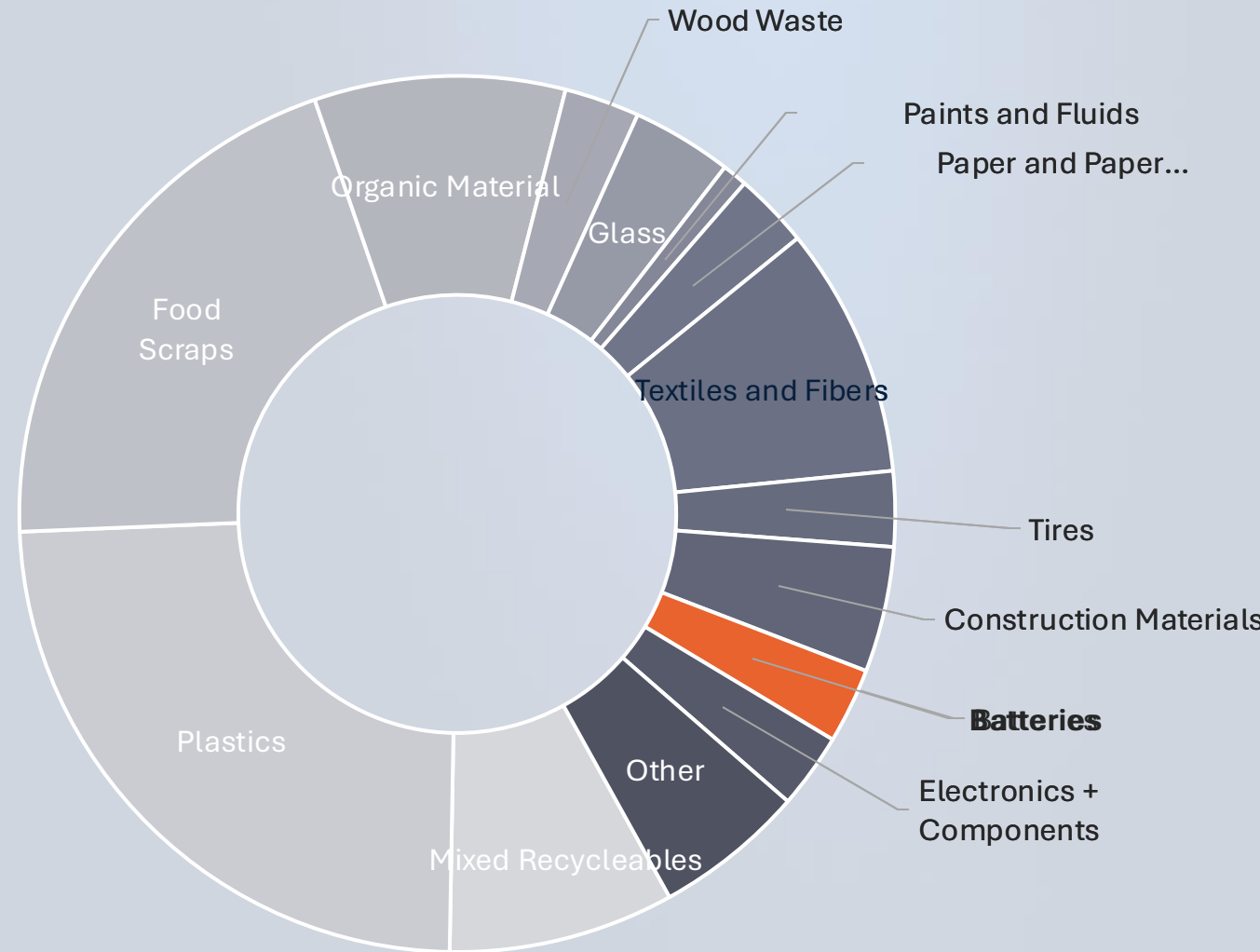
Six-Month Accelerator Program

- Business model development
- Industry-specific support and expert coaching
- Partnership connections
- Workshop-based, collaborative learning
- Showcase to pitch solutions



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Material Streams Addressed Through NextCycle Projects



Spotlight Projects

Alumni & Partners focused on Battery Innovations and Solutions



CITY OF BIG RAPIDS
Consumer Battery Collection



CIRBA SOLUTIONS
Consumer Battery Sorting and processing



VEOLECTRA
Portable Energy Storage from used EV batteries



VOLT HARBOR
Battery Electric Stationary Storage from used EV Batteries



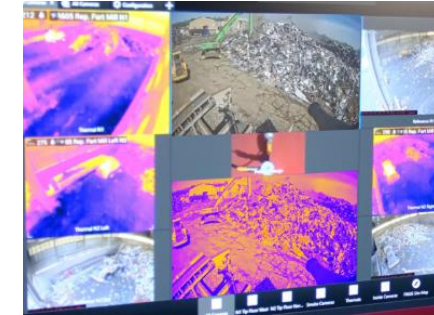
GREAT LAKES RECYCLING
EV Battery Dismantling for Recycling & Reuse



MISSION LLC
Hero Project for Vape Pen Recycling



REVEX
Mining waste reutilization and black mass processing



FIRE ROVER
Monitoring solutions for thermal events

Looking Ahead

Data Driving Solutions

Identifies gaps and supports informed prioritization of needed solutions

Policy and State efforts

Widespread policy needed with consistency across states

NextCycle Accelerator

Adaptable for different State and regional needs to address material and circular economy challenges

Drive your local circular economy.

Design a NextCycle program for your
state or region.

recycle.com/nextcycle



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