

The Frontline Vehicle Recycler Reality

Fire Safety Hub <https://recycledmaterials.org/firesafety>

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Recycled Materials
Association
Sustainable. Resilient. Essential.

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Consumer Batteries ≠ Vehicle Batteries

Small and Medium Format (under 25 lbs.): public is uncertain what to do

- **Problems:** collection pathways, public education, detection
- **Small size and weight:** fits in recycling and waste bins
- **Safety concerns** for employees, collection vehicles, facilities
 - Dangerous if compacted, bent, or pierced: commonly occurs during collection, intake, sortation, and processing
 - Undetected batteries can survive bailing at MRFs and cause incidents downstream.

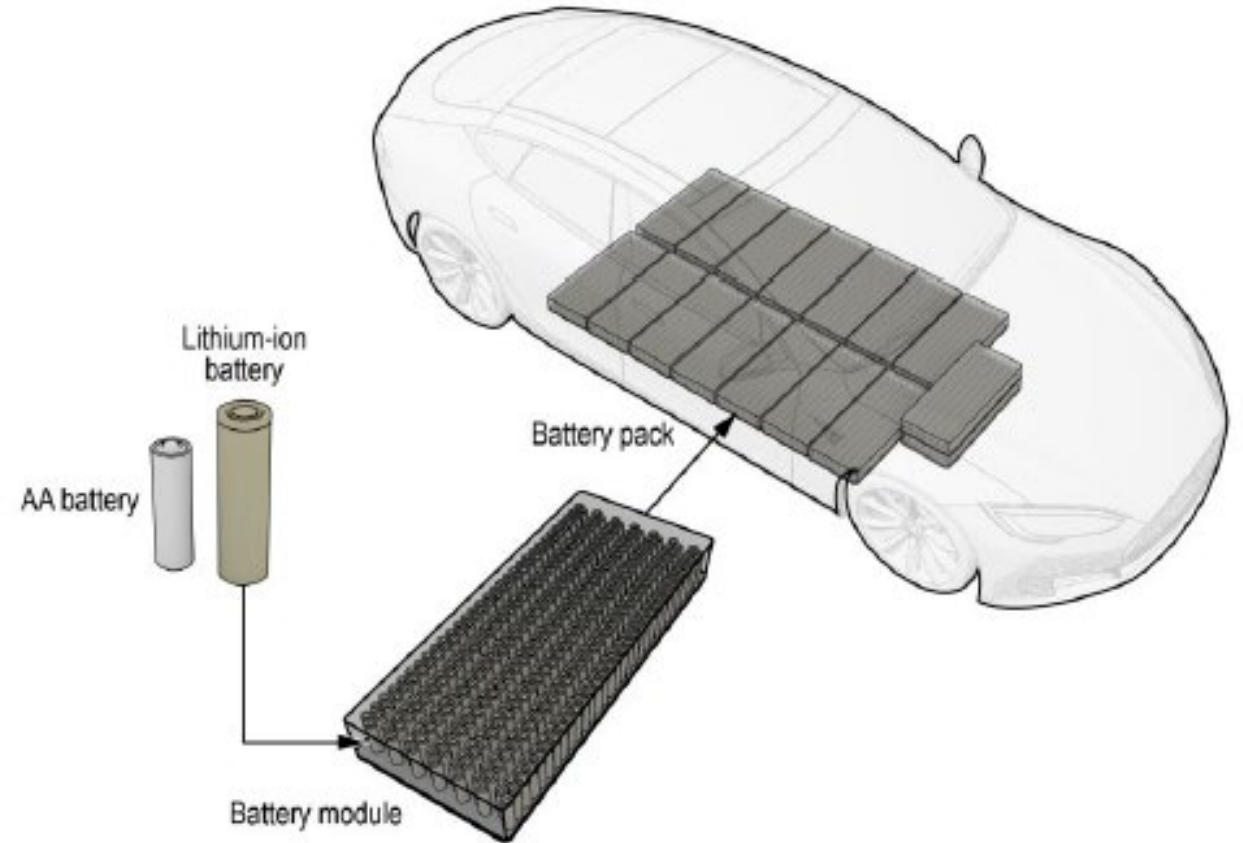
Vehicles Have Collection Pathways, BUT

Dealer trade in, repair shops,
vehicle recyclers, tow operators

Secondary Handlers need to adapt
to new safety, training, and market
challenges

Public education focus is different
from small / medium:

- Risks of DIY
- Notify that the vehicle is EV / hybrid.



Vehicle Recyclers and other Secondary Handlers Need to Know:

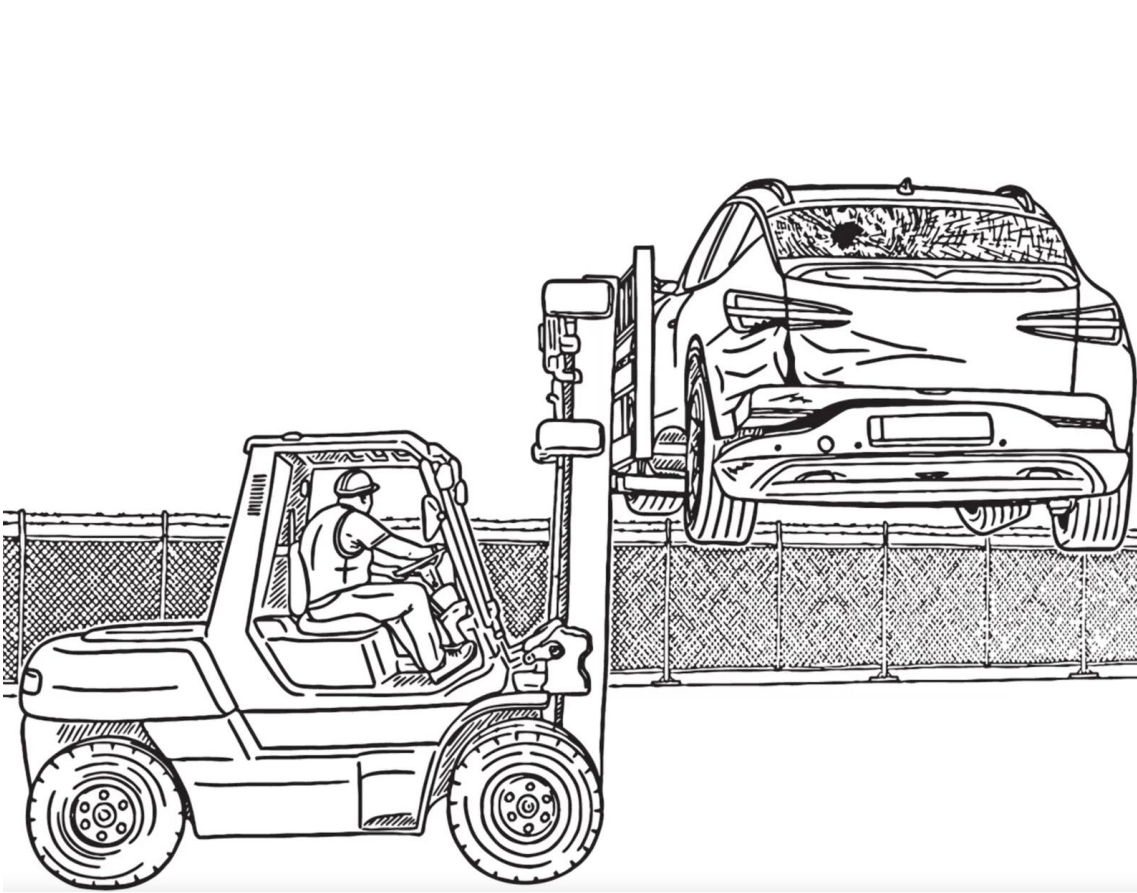
- **How to identify** EV, hybrid, and other alternative fuel vehicles
- **How to safely** disable, remove, and transport
- **End-of-life market** opportunities: reuse, repurpose, recycle



VS



Safely Disable, Remove, and Transport



Training & Partnerships are Needed

Specialized Courses Exist and are Being Developed for Vehicle Recycler Safety

- ReMA High Voltage Electric Vehicle Technology Training
- Automotive Recyclers Association: Auto Recycling Training Institute
- NFPA Electric Vehicle Community Preparedness Series: Tow and Salvage

EPA, DOE, and DOT regulations and best practices on management, transportation, etc. pending; 3rd party standards in development.

Partnering with Manufacturers and Second Life Markets is the Key!

Training Levels: ReMA High Voltage

Awareness: Level 1

- Free online course, EVERYONE at a facility handling EV / hybrids should take
- Focuses on identifying and operating safely around an EV / hybrid
- **DOES NOT** train to attempt to work on an EV / hybrid
- Identify in the Stream, Understand Risks, Prevention and Response

Technician: Level 2

- Hands on, in-person training required

Trainer: Level 3

Specific Dangers and Training Covered

Health and Safety

- Using your senses
- Common risks
- Thermal Runaway
- Fire & Explosion
- Off-Gassing
- Electric Shock

Identification

Handling and Storage

Fire Response

State Partnerships

ReMA's Safety team conducted a high-level overview for safe handling of electric vehicles with

- New Hampshire Department of Environmental Services
- Vermont Department of Environmental Conservation, Salvage Yard Program.

ReMA also hosted a mock fire drill with:

- Town of Moultonborough NH
- NH DES and State Fire Marshall's Office
- Pimex3.

Three scenarios were conducted to evaluate facility operators and emergency responders on their response procedures.



End-of-Life Value: Recycling is the Last Step

- Recycling closes the loop to **retain critical materials** in the supply chain.
- **Vehicle recycling is for profit:** public expects to be paid for vehicles at EOL
- Programs like New Jersey's and Colorado's provide support where and when needed as markets mature and chemistries change.
 - **Avoids EOL charge for public** / recycler hesitancy in accepting.
 - Protects against inadvertent receipt when a vehicle recycler is not trained and equipped to handle.
 - Ensures management hierarchy.

ReMA Resources

ReMA Fire Safety Hub: <https://recycledmaterials.org/firesafety>

- Hazard Recognition, Operational Guidance, High Voltage EV Training (online and in person), Fire Plan Guidelines, MRF Guidelines, etc.
- Links to partnership resources with ESFI, South Carolina Be Battery Smart, U.S. EPA, JASON Learning
- Links to ReMA Positions on Non-Embedded and Propulsion Management

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- Jerry Sjogren: Sr. Director, Safety: decades of on the ground safety manager experience with EL Harvey and Sons in MA before we stole him
- Holly Brownell: Manager, Safety Outreach: rockstar organizer