

LITHIUM-ION BATTERY RECYCLING PRIZE



U.S. DEPARTMENT OF ENERGY

A Public Document



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Submission Title:	Separating and Sorting of Lithium-Ion Batteries in the Auto Industry
Submission Track:	Separating and Sorting

Concept

- Existing workflows in the Auto Industry already require Auto Recyclers to separate and sort parts from end-of-life vehicles on a daily basis.
- **Cataloging data for Lithium-Ion batteries available to the Auto Recycling Industry does not enable sorting based on varying chemical composition of the battery.**
- Standardized electronic messages that send a serial number and receive corresponding information such as chemical composition would allow Auto Recyclers to sort by battery type, chemical make-up or any other strategically important factor more effectively than current practices.
- **CIECA currently provides standards for electronic messages in the automotive space.**

Approach

- Car-Part.com would partner with CIECA (Collision Industry Electronic Commerce Association) to build industry standard messaging to send a serial number and receive battery specific information.
- **The contents of the messages need to include battery type, precious metal content, safety and hazardous waste information, any information needed to route the batteries to remanufacturing plants, etc.**
- We suggest the government is involved in the creation of these messages to ensure the data captured includes National Security strategic objectives. (DOE should sit on this committee.)
- **Other partners will include vehicle and battery OEMs, ARA, Recycling Information Providers, Estimating/Shop Management Systems, Insurance Companies, etc.**

Potential Impact

- Once the relevant factors are identified and data is available via CIECA messages, Auto Recyclers can inventory batteries according to the serial number. Sorting will happen based on the needs of all forms of recycling: reuse, remanufacturing, and precious materials extraction.
- **The categorization will naturally happen as part of the inventory process. Sorting will happen electronically in seconds.**
- Precious material resource separation still needs to occur physically, but the process is pre-optimized based on the Auto Recyclers' ability to properly sort.
- **Car-Part.com's current marketplace scales to 200 million parts and \$5 billion worth of part searches per month.**