

# LITHIUM-ION BATTERY RECYCLING PRIZE



U.S. DEPARTMENT OF ENERGY

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<b>Submission Title:</b>	IonView-Ultrasonic 2nd life Li-Ion State of Health - 1 second test
<b>Submission Track:</b>	Track 2 – Separation and Sorting

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## Concept

- Titan AES will demonstrate IonView – a commercially viable ultrasound enabled lithium ion State of Health testing platform with the following capabilities:
- 99% accurate State of Health test result in less than 1 second
- Automated ultrasound transducer movement
- Touchscreen GUI interface for untrained users
- Hands Free voltage testing function
- QR code or barcode reading functionality
- Test result/printing capabilities integrated into station.
- System is designed to be integrated into high volume recycling operations and will economically Separate and Sort 2<sup>nd</sup> life Li-ion batteries for potential re-use prior to final recycling.

## Approach

- Titan is partnering with two of the largest Li-Ion battery recyclers in the US to commercially test and validate the technology:
  - Retriev Technologies (Largest USA EV Li-ion recycler)
  - Call2Recycle (Largest USA consumer Li-ion recycler)
- IonView is an extremely disruptive technology innovation in the battery testing industry reducing the time to reliably test the State of Health of a Li-ion battery by 99.9%.
- The use of ultrasound to determine the State of Health of a Li-ion battery will dramatically decrease the cost of testing, re-purposing, and bring centralized efficiency to the final recycling process.

## Potential Impact

- Efficient repurposing and ultimately final recycling of over 90% of the used Li-ion batteries in the market.
- Enables 2<sup>nd</sup> life repurposing of batteries by reducing costs to the OEM, recycler, and integrators.
- Increases the safety associated with second life batteries with the ability to detect internal battery outgassing to avoid Li-ion failures and fires.
- Economically enables the full utilization of Li-ion battery before ultimately recycling.
- Reduces carbon emissions by extending the usable life of batteries and promoting the 2<sup>nd</sup> life use of Li-ion batteries for renewable energy projects.
- By 2026 enables over \$2B/year in 2<sup>nd</sup> life batteries to be repurposed safely and efficiently.