Electric Vehicle Battery Recycling and Reuse Working Group
Meeting Minutes

Date: December 18, 2025
Time: 9:00 AM
Location: Hawai‘i State Energy Office and Zoom

Members Present

Hawai‘i State Energy Office:

- Mark Glick, Chief Energy Officer
- Monique Zanfes, Managing Director of Energy Efficiency and Renewable Energy
- Munashe Silverberg, Renewable Energy Analyst
- Kevin Moy, Energy Resilience Project Specialist

Hawai‘i Department of Health:

- Lene Ichinotsubo, Acting Branch Chief, Solid and Hazardous Waste Branch
- Lenora Mau, Engineer, Solid and Hazardous Waste Branch
- Kelly Ann Lee, Project Specialist, Solid and Hazardous Waste Branch
- Rebekah Morales, Environmental Health Specialist
- Michele Freitas, Hazardous Waste Program Supervisor
- Kolea Praywell, Planner
- Tracie Saito, Planner

Working Group Representatives

- Aki Marceau, Hawaiian Electric
- Archibald Morgan, Matson
- Ashley Seaward, Redwood Materials
- Christina Kaser, County of Kaua‘i
- Curt Augustine, Alliance for Automotive Innovation
- Dan Bowerson, Alliance for Automotive Innovation
- Daniel Zotos, Redwood Materials
- Darla Arians, Product Stewardship Institute
- Ed Washburn, Pasha Hawai‘i

- Greg Jenkins, High Hazard Management LLC
- John Redman, General Motors
- Jordan Brandt, Voltek Hybrid and EV Repair
- Kevin Krick, Matson
- Laura Kaakua, Hawai‘i Department of Transportation
- Melissa Pavlicek, Hawai‘i Automobile Dealers Association
- Michael Cooney, Hawai‘i Natural Energy Institute, University of Hawai‘i
- Mike Gaffney, Pasha Hawai‘i
- Nick Garofalo, Radius Recycling
- Ricardo Yost, Honolulu Fire Department
- Robert Potter, Synapse LLC
- Sumreen Rattan, Moment Energy
- Thor Toma, ServCo Pacific
- Will Giese, Solaray Corp

Meeting Overview

The December meeting of the Electric Vehicle Battery Recycling and Reuse Working Group featured two major presentations: one from the Hawai‘i Automobile Dealers Association on dealer perspectives regarding battery recycling, and another from Redwood Materials on repurposing and recycling operations. The meeting included extensive discussion on shipping challenges, liability concerns, hazardous waste classifications, and the need for alignment with national standards. Members discussed the practical realities of Hawai‘i's unique geographic and regulatory situation, including the current reluctance of salvagers to accept EVs due to costs, shipping restrictions for batteries, and the need for workforce development.

Presentation 1: Hawai‘i Automobile Dealers' Perspective *Presented by Melissa Pavlicek, Hawai‘i Automobile Dealers Association*

Melissa Pavlicek from the Hawai‘i Automobile Dealers Association (HADA) presented on the dealer perspective regarding EV battery recycling and end-of-life management. She explained that when battery replacement is needed, dealers typically work with the original equipment manufacturer (OEM) facility on the mainland, sending battery cores back for processing. If a whole vehicle is involved, the OEM facilitates a third party to handle pickup and return. Pavlicek highlighted that Hawai‘i has 71 new car dealerships representing approximately 6,400 jobs, ranging from small mom-and-pop operations on neighbor islands to very large companies in Hawai‘i's Business Roundtable. This diversity means dealers have very different abilities to

absorb costs and adapt to regulatory changes. She noted that battery electric vehicles and plug-in hybrids in Hawai‘i represent above-average market share compared to other states.
Regarding warranty and shipping, Pavlicek explained that when battery repair or replacement is covered by warranty, the manufacturer facilitates and pays for return of the battery core. Shipping an EV battery or whole vehicle requires specific conditions—vehicles must be running and battery percentage must be below a certain amount. She emphasized that setting standards or policies unique to Hawai‘i might cause additional challenges for customers and dealers to be allocated vehicles. HADA emphasized the importance of aligning with national standards and OEM requirements rather than creating unique Hawai‘i requirements, referencing the Alliance for Automotive Innovation's 2021 policy framework. Pavlicek also noted that access to qualified technicians is a major issue, with auto technicians facing competitive pressure from cheaper living locations like Las Vegas.

Working Group Discussion:

Sumreen Rattan noted in the chat that battery testing tools can be provided to battery removal technicians, along with high voltage safety training and visual inspections to help inform whether the battery is damaged, defective, or recalled (DDR) or not for correct classification of shipping.

Curt Augustine shared in the chat a link to California EPA’s final recommendations from the lithium-ion car battery recycling advisory group, noting that the Alliance endorses these as a national plan.

Michael Cooney and Melissa Pavlicek agreed to chat offline about specific topics and report back to the task force.

Presentation 2: Repurposing and Recycling *Presented by Daniel Zotos, Redwood Materials*

Daniel Zotos from Redwood Materials presented on battery repurposing and recycling operations. He explained that Redwood Materials is North America's largest lithium-ion battery recycler and handles batteries from automotive manufacturers, dealers, and consumer devices. For in-warranty batteries, OEMs work with companies like Redwood through commercial partnerships, and Redwood handles aggregation, logistics, and DDR packaging. For out-of-warranty batteries, Redwood works with secondary handlers, automotive recyclers, and dismantlers who take end-of-life EVs or batteries.
Zotos discussed Redwood’s Second Life energy storage program, launched earlier in 2025, which repurposes qualified EV packs for grid energy storage. He showcased their pilot project at their Northern Nevada campus, the largest microgrid in North America and largest second-life battery deployment in the world, 63 megawatt-hour storage capacity installation using approximately 800 repurposed EV battery packs of different brands and sizes. He emphasized that repurposing provides significantly lower cost than other energy storage solutions while maximizing the value of battery materials before ultimate recycling.
Zotos also presented on Redwood's work in Hawai‘i, including their partnership with Kaua‘i Island Utility Cooperative on decommissioning a stationary storage project and their

collaboration with the EPA in response to the Lahaina wildfires, where they safely packaged and recycled burnt battery packs from electrified golf carts, electric vehicles, and residential stationary storage.

Working Group Discussion:

Lenora Mau asked whether Redwood would accept batteries from Hawai‘i that had been shredded but not fully processed to black mass, noting the Maui wildfire materials were sent as wet shredded batteries.

Daniel Zotos responded that he would need to verify the exact format of the Maui materials, but cautioned against using that disaster response as a model for normal operations. He emphasized the key question is how Hawai‘i will address end-of-life management economics—whether through pre-processing, better aggregation, or streamlined shipping agreements.

Lenora Mau followed up asking if Redwood would accept material that still has plastics and other components—essentially a "smashed" battery not fully processed to black mass. *Zotos* confirmed yes, Redwood can handle various form factors including materials in worse condition than that, though economics may vary. When asked what format would be cheapest for Hawai‘i to send, *Zotos* indicated it's a case-by-case basis and he would have his commercial and engineering teams review specific scenarios. He noted Redwood receives end-of-life batteries in all sorts of conditions, stages of charge, and health status from their customers.

Greg Jenkins asked a hypothetical about the economics of recycling versus disposal if government subsidies were removed and excluding specialized reuse applications like microgrids. *Zotos* responded that Redwood aims to be commercially viable beyond just pureplay recycling by diversifying their approach, and this value would be passed on to entities making disposal decisions. *Jenkins* then asked about processing turnaround time from receipt to processed raw materials. *Zotos* indicated they can move through their entire Nevada yard in about three months, though timing depends on customer needs, material chemistry, and desired output.

John Redman provided critical clarification on regulatory constraints. He explained that during the Maui fire response, EPA issued an executive order allowing batteries to be crushed into black mass, but normally this treatment would require permitting from EPA. He emphasized that even if batteries fall under universal waste exemptions, they still must be transported as lithium-ion batteries. Generating black mass is the safest way to process batteries for shipping, but doing so on the islands would constitute managing or treating wastes, creating a regulatory fork in the road. *Redman* stressed his concern about how damaged batteries are currently being transported off the island and the need to find safe, cost-effective solutions for hazardous material transportation. *Zotos* agreed with Redman's comments and acknowledged that a unique approach for Hawai‘i is needed.

Michael Cooney recommended connecting with Travis Hesterberg from Ecobat in Arizona, who operates a facility processing batteries of all formats into black mass profitably. He noted Ecobat sells to various markets beyond Redwood, demonstrating that markets exist for black mass.

Cooney emphasized the critical question is whether batteries can be shipped without shredding into black mass and at what cost.

Meeting Chat Discussions

Maui Wildfire Response and Confidentiality
Greg Jenkins clarified in the chat that he has an NDA with Redwood Materials connected to his role as an EPA ERRS Consultant who co-created and led the Maui Wildfire Response specific to the 30 tons of batteries processed via the "Maui Method." He stated he has not and will not share information from Redwood's site or any operation without their expressed permission, and appreciated Daniel Zotos answering his questions.

Michael Cooney responded in the chat that Greg Jenkins was speaking about a process that was operated under an emergency declaration, which needs to be understood. Normal procedures will not have that mandate. He stated he was speaking for all the businesses that cannot operate under those unique conditions.

Greg Jenkins replied that the material is the material and needs to have government approval for its disposition prior to shipment for safety. The process regardless of a disaster or emergency requires a mandate to specific standards established by public trust leadership and not a private, non-profit, or other NGO given any type of authority outside of the government system of public trust approval and accountability.

Recycling Capabilities and Shipping Challenges
Ricardo Yost asked in the chat whether it's a generality that most recyclers will take batteries in a variety of stages of disassembly, and whether that is the limiting factor on getting material off the island. He stated he doesn't think the limiting factor is the recyclers themselves, but more how the material is shipped off island. Making the batteries into "not batteries," regardless of how refined it is, should be the point. He expressed gladness that OEMs are taking responsibility to help pay for the conversion of batteries into not batteries.

Daniel Zotos shared his email address (daniel.zotos@redwoodmaterials.com) in the chat and invited participants to send follow-up questions or requests for help figuring out what to do with EV batteries or any lithium-ion batteries.

Public Comment

Public comment period was held.

Adjournment

The meeting was adjourned.