

NAATBatt Recycling Committee for Advanced Automotive Batteries in North America

11Feb20 8:00am-10:00am Meeting Minutes

Committee Mission Statement, updated 13Sep17:

To identify and promote the best methods for safely and responsibly recycling advanced automotive lithium-ion battery packs in North America in a manner that will extract positive economic value from the batteries and provide a useful template for the recycling of industrial and stationary lithium-ion energy storage systems.

Attendees:

NAATBatt Advanced Battery Recycling Committee Roster				x = In Attendance
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Meeting Minutes

1. Welcome by Committee Chairs and brief introductions by all attendees
2. Reminder of obligation of all attendees to abide by the NAATBatt Antitrust Compliance Policy (Coy)
 - a. Todd reminded group of applicability of NAATBatt antitrust policy
3. Overview by Committee Chairs of significant developments in lithium-ion battery recycling in North America (Coy, Karlson, Kincaide)
 - a. Opening up discussion to whole group, get everyone's perspective on this
 - i. Todd:
 1. DOE recycling prize
 2. Legislative happenings in California and other states in terms of driving recycling and collection across the board
 3. Cultural shift is what is needed
 - ii. Galyen
 1. Brunp recycles vehicles and batteries, including recovering active materials in the form of precursor
 2. 220 recovery sites across China

3. Recover 96% of copper, 95% of aluminum, 99+% of actual active materials in the battery
 4. Critical mass of materials is needed to make recycling profitable, when will North America hit this level is uncertain.
 5. Todd points out that recycling is happening in North America, contrary to popular belief
 - a. May not currently be as closed loop as people would like, in that some recovered materials may go into other products or industries (not necessarily back directly into a battery)
 - b. Will growth be organic growth towards point we need to be, or will there need to be a regulatory/push?
- iii. Sharon Bonesteel
 1. Part of issue is education, letting people know that we are using these materials in this country, it is valuable to recycle. Not just the idea that we are out exploring and finding new sources for these materials.
 2. Proposed a “This country needs what’s in your drawers” message, letting people know what could be done with the stuff if we could leverage it
 3. If we are going to transition the culture, need to look at the demographics of the people who will be doing the battery recycling process
 - iv. Shaun
 1. Market signal is what is important, whether this is created by government or private enterprise
 - v. John Kincaide
 1. Infrastructure to collect materials that consumers may want to bring back needs to be built
 - vi. Lauren
 1. In January, battery passport concept was introduced to give batteries a digital identify for the purposes of lifecycle tracking
 2. Cost to implement this is still to be determined
 - vii. Steve Sloop
 1. Potential barriers are whether manufacturers will accept materials that come out of recycling processes
 - viii. Pablo Valencia
 1. Gave example of regrind plastics, once the regrind became equivalent to virgin materials requirements were able to change to not limit regrind
4. Discussion of Possible Summer Workshop on Issues in Lithium-Ion Battery Recycling
 - i. Jim feels the last workshop was successful and that there is appetite for another one
 - ii. What kind of items would we want to focus on, where should we have this?
 1. John Kincaide suggests Buffalo as the location

- iii. General agreement in the room about having another workshop. **Jim requests people to send topics to cover, and suggestions on location**
 - iv. Todd Coy:
 - 1. Feels that what is missing from other meetings is OEMs being able to speak openly about what the issues are that we are trying to solve. Auto OEM voice to the recycling community.
 - v. Bob Galyen proposes going to the location of BIC, could get a tour of it
 - vi. Peter K proposes that we could have in a location where we could actually see the reality on the ground of places that receive batteries
5. Divide into Subcommittees, with each subcommittee to direct its own discussion (about 45 minutes)
- a. Regulatory (Loch)
 - i. Scope: concise overview of US and Canadian regulations for reverse logistics of used consumer and automotive battery ... (ask Keith for details)
 - ii. Will create a summary and will put on the NAATBatt website. An amateur can get themselves up-to-date on these regulations.
 - iii. Working to reduce size and have more concise summaries
 - iv. Develop a list of current NAATBatt recyclers and repurposers, advocacy for NAATBatt
 - b. Tracking and Exchange (Roman)
 - i. Survey of recyclers and repurposers in group, asked what data would they ultimately want to have about a battery that shows up in facility to increase efficiency and safety
 - ii. Creating a business case to show to OEMs that takes the list of data, and what is the ultimate value in providing this information
 - c. Education (Bonesteel)
 - i. Three key areas:
 - 1. Education
 - 2. Advocacy
 - 3. Culture Change
 - ii. Creating a database at NAATBatt to determine whom within the organization is a contact with various organizations
6. Reconvene as a Whole Committee and Report-Outs by Subcommittee Chairs of Subcommittee Discussions and Going Forward Plans
- See above summaries
7. Other business as may be proposed

- John Kincaide
 - Found a class 1 railway that was willing to accept and transported spent lithium ion batteries by rail
 - Reduced cost of shipping by 1/3
 - Carbon expenditure significantly reduced. Rail vs truck – Truck about 1 ton of fuel for 45,000 lbs, versus railway 200-300 lbs of fuel to move the same load
 - Important because until we have localized recycling spots, need to move around the country
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