

Lithium-Ion Car Battery Recycling Advisory Group

Meeting Minutes for 8.31.2021

1. Call to Order, Roll Call, and Establishment of Quorum – Caroline Godkin, Deputy Secretary for Environmental Policy and Emergency Response, CalEPA

- Advisory Member roll call:
 - Ana-Maria Stoian-Chu (AS)
 - Mohammed Omer (MO)
 - Hannon Rasool (HR)
 - Terry Adams (TA)
 - Dan Bowerson (DB)
 - Todd Coy (TC)
 - Toshiya Fukui (TF)
 - Perry Gottesfeld (PG)
 - Steve Henderson (SH)
 - George Kerchner (GK)
 - Bernie Kotlier (BK)
 - Alison Linder (AL)
 - Geoff Niswander (GN)
 - Les Schwizer (LS)
- Absent for roll call
 - Mark Caffarey (MC)
 - Jennifer Krill (JK)
 - Nick Lapis (NL)
 - Teija Mortvedt (TM)
 - Lou Ramondetta (LR)

*Quorum met

2. Administrative items – Mohammed Omer, Engineer at DTSC

- Meeting is being video recorded and livestreamed
- Public can ask questions and comment via chat or calepa.workshops@calepa.ca.gov
- The minutes haven't been finalized and they will be brought to the meeting in September.
- Today we will be continuing the conversations we had last time about the

EPR and Core exchange and vehicle backstop proposal.

- Updates and questions
 - PG: There is an announcement from Tesla that they are recycling the batteries in Nevada. Can someone speak to that?
 - *no one from Tesla is at meeting*

3. Discussion on the proposals by AFAI (DB) and Ford (SH) facilitated by MO

DB: We have been having meetings to address questions brought up, but have nothing to present yet. We will get back to everyone in the September meeting.

MO: The goal is to continue the discussion so that is okay.

DB: The purpose of the proposal was to look at it two-fold. For the vehicles still in service, there would be a core exchange program a manufacturer by manufacturer. For vehicles reaching EoL, the dismantler would be responsible for it if it was pulled from the vehicle. For unwanted batteries still in the vehicles, the manufacturer would be responsible and as a type of backstop.

GK: To clarify, the vehicle manufacturer will be responsible for the vehicle and batteries. Does this apply if the battery is out of vehicle?

DB: Yes, thank you.

MO: This next slide is about the advantages of the program. I don't have any questions but I want to make sure folks from the public can comment.

TA: My question is on the complete vehicle—I can imagine a lot of scenarios where cars come through that aren't from an auction and we will get orphaned vehicles that will need the backstop. This absolute of having a complete vehicle, there will be a lot of vehicles that are orphaned. I think there needs to be a lot of thought to this.

DB: Yes, we are working with members to have a response to this.

PG: Is this only for licensed dismantlers?

DB: When we made the proposal, we were building on the concern about unlicensed dismantlers. This was to discourage unlicensed dismantling. The goal is to avoid unlicensed dismantlers from getting their hands on these vehicles.

PG: But will you take it back from unlicensed dismantlers?

DB: I don't know how this would look, but that is a good point.

PG: Does the offer extend to others besides the dismantlers?

DB: The dismantler wouldn't purchase the vehicle if it doesn't have value, the backstop is for the vehicles that aren't dismantled. The backstop is for any entity that has a vehicle that needs to be taken care of at the end-of-life.

PG: I am confused, it sounds like a narrow slice of the batteries.

MO: It sounds like we need to have more discussion.

TA: I agree that if the dismantler handles a car it needs to absorb the costs. I agree this backstop needs to apply to all other entities. The auction houses get a lot of the damaged vehicles that aren't necessarily complete, would these be eligible for the backstop?

DB: The complete vehicle needs to be defined. If the vehicle is in an accident and has some of the vehicle missing, it can still be covered. We just don't want parts to be removed by the dismantler and then be the auto manufacturers responsibility.

DB: This slide is the visualization of the program.

GK: So, this comment is related to in-service and outside of warranty. In this instance the service shops are responsible for participating in the core exchange. In this situation there is a damaged battery that needs to be replaced. Are those the entities that are on the hook for paying for the program.

DB: Yes, it would be the responsibility of the entities removing the battery for proper disposal.

MO: The outside of warranty program had the most questions.

DB: Yes, we expect those to be outside of warrant is the responsibility of the entity removing the battery and there needs to be record keeping involved to ensure proper disposal.

LS: So the OEM is responsible under warranty and then it is on everybody else.

DB: Those taking it out of the car, yes. Then at end-of-life there is a backstop program.

PG: The case of the in-service replacement, that is the current situation. Really the only new feature is the second half.

DB: Yes, and that is what it is like today. You are right.

MO: Thank you. Moving to the next slide. The unwanted situation is one of the bigger ones from last time in terms of the discussion.

DB: I can try to respond to the question for OEMs out of business. A lot of times there is a business that purchases the business. I think we would want to ensure the purchaser of the assets to take responsibility of the backstop. In those rare circumstances that they aren't purchased, then it would be considered orphaned. We see this being a small amount of vehicles but we need legislative text to take care of this.

MO: We have a question from the public. "If battery removal is expensive for out of warranty vehicles, it seems that the recyclers/junk yards might take the car after the battery is removed."

DB: That is not what we are proposing. We will not take the battery out and then ship the vehicle back.

MO: This is a follow-up from them, "Does this mean that junk yards won't purchase vehicles with batteries in them?"

TA: I want to raise one issue. We don't want to lose sight of the orphan batteries. The manufacturer shouldn't be responsible but this is a longer term vehicle and a good opportunity to use funds that are raised by the registration fee or something.

DB: This next slide is essentially taking the last three slides and putting them into one. There is nothing new on this slide—just more of a macro look.

MO: Moving along then and this next is some necessary safety net situations.

DB: The status-quo doesn't require recycling of the battery at the end-of-life, so this is a little new.

MO: Who is responsible doesn't change but the nature of the responsibility does.

DB: Yes

MO: So, could a dismantler call up an OEM to take the battery?

DB: The OEM would take the complete vehicle. We are trying to make sure that the dismantler doesn't remove parts of the car and then call us to take it. It has to be a complete vehicle but that term needs to be better defined.

TA: So on defining the EOL vehicle. The auction houses are places for wholesale cars. They are going to sell thousands of cars in various shapes. It is hard to determine at an auction if a car is sold for dismantling or use. So you don't need a dismantling license to buy from these auctions, so it is a bit hard to determine.

DB: Yes, this needs more fleshing out.

MO: There needs to be more fleshing out. The point here is that they aren't going to an unlicensed dismantler.

Gavin M: There is a distinction between insurance auctions and other auctions. Insurance auctions are for vehicle EoL.

MO: There were questions about streamlining the permitting process, for recycling specifically. The CA legislature cannot do this. The waste definition also can't be changed because it is based on the Federal definition. This is more of a consideration for federal legislation. The labeling is another thing that DB can talk about.

DB: All members support the labeling of batteries and we think we can pull from the SAE recommendations.

MO: It is great to see consensus about universally approved policies.

AL: My question is about the previous couple slides. I am trying to wrap my head around complete vehicle requirements. When you were talking about dismantlers from picking and choosing. I don't see what is wrong with that. Congruent with the goals of the committee to reduce resource use, I would like to see the whole vehicle reused. I have a concern that requiring it to be complete somehow prevents the maximum recycling. I think one reason for requiring that is related to the transportation requirements. I think we talked earlier about the type of waste requirements and everything; that route is better than looking at the complete requirement.

DB: The OEM will dismantle and recycle the full vehicle.

AL: So you said the OEM will properly dispose and recycle the full vehicle?

DB: The OEM would ensure proper dismantling of it.

AL: Why does it have to either, or? As in all or nothing? I don't understand why they should be denied that opportunity.

DB: The reasoning is due to efficiency for transporting, that there is no damage to the vehicle, I can take that back to the members.

TA: The OEMs will just contract with dismantlers and then they will dismantle them to the most economic advantage. The OEMs will not actually dismantle them.

BK: I do not work with an OEM or a dismantler but my own business background would suggest that if a dismantler doesn't purchase the EV they have made an economic calculation. I think that is why this proposal makes sense. There may be a transportation issue or that the other components in the vehicle contribute to the OEM being able to dispose of the EV in a more economic way. In each step there is a calculation as to if the entity can make money. I think we have to understand that the OEM has to have as much value as possible and that is why they want the complete vehicle.

DB: Well said, yes.

MO: I think TA and PG addressed this, that an EOL vehicle goes to a dismantler and they make an economic decision, if it puts them in the red then it goes to an OEM. At this point they work with dismantlers and pay them to take care of it. I don't think this will put anyone out of business.

TA: Everything will get recycled and there is not a problem that needs to be fixed.

PG: Well I think to add to AL's point. I think we are spending a lot of time thinking about a narrow case. I think this opens to opportunity that an OEM takes it back, what stops them from exporting it? This doesn't exactly mean it is handled by TA's company.

BK: I doubt it is the intention of OEMs to export and landfill but it is something we should discuss. Also, assuming the OEMs are responsible for disposing in the US, they would

probably be highly motivated to design the batteries to be easily handled at the end-of-life.

Lauren Roman: The proposal says the OEM is responsible if it is removed from the car, and if the OEM is responsible for orphaned batteries it is required to then take it to the dismantler. This seems more like an EOL vehicle program.

DB: The intent is for the OEM to properly dispose of the battery.

LR: So maybe I do understand, the dismantler will only take it if there is a positive revenue incentive.

DB: Yes

LR: So if I am a dismantler and I get a vehicle but it has a negative value, do I get a hold of an OEM and say how much will you pay me?

DB: I don't think the dismantler will even get the vehicle.

LR: How will the dismantler find out that there are vehicles that need to be picked up?

DB: The presentation didn't address that but there will have to be a way to contact them.

MO: This is the overall proposal for how the backstop works. We have made all these points.

MO: Steve Henderson, I will now show the two slides from the presentation.

SH: These I think are the words that are existing and the next slide we added to the wording. The idea here is that the OEM is responsible once they have their hands on it. We added texture as to what needs to be added to the responsibility. This includes the reverse logistics, documenting, and educational materials. I tell you, the one small thing is the last clause. The rationale is that if you want the OEM to be responsible, you need to give them control of the battery. What we came up with is companion legislation that when the battery reaches EoL then it is owned by the OEM. We didn't flesh this out in the same way, but when the battery has reached its EoL, most of the things that DB built into that policy would still be true. The OEM will still be responsible within the warranty. Right now it is 8 years but CA is negotiating a longer period. We also want to point out that the core exchange would also apply here. This would be a good thing to have in place no matter what scheme chosen. When you are taking it out for the very last time, we just need a mechanism that establishes responsibility. The main motivation for the OEM is that our batteries don't end up in a bad place because of safety and reputation.

TA: The last bullet point is my concern as an auto dismantler, again, this is private property and if Ford or the manufacturer wants these batteries back or wants to maintain control and ownership, then they ought to maintain ownership and never sell the battery and lease it instead. This is private property and creates all kinds of issues

and pushback that will blow up this proposal and it will never get done and I would encourage you to look at a program where you take back the orphan batteries, the scenario you described where if the auto dismantler or a homeowner that has a set of batteries in their garage and wants to get rid of them, having a program to get rid of those batteries when there is no intrinsic value, that is the problem that needs to be solved without having a disruption to entire industries that have been built up around vehicle afterlife.

SH: I don't think there was a question there, so I'll just say I understand where you're coming from.

PG: I see this as a very responsible and comprehensive proposal and just to clarify, Steve it seems to me what you're saying is that this incorporates all the aspects of the car that's been badly damaged in an accident, this would cover that vehicle as well.

SH: Yes, we know we would be responsible during warranty for eight years and then we'd be responsible at end-of-life, so the legislators or we would just have to decide how to handle the batteries in between those phases

NL: I really like the core of this proposal, the part I get hung up in is the same issue Terry raised. How would we possibly say that you have to return your battery to the OEM? That's not something we have done with any other product, I almost can't think of a precedent, so I'm wondering how critical that is to your proposal. In my mind, producer responsibility means financial responsibility, to physically taking control of the product.

SH: I think I said this last time, but we have essentially three types of proposals on the table. One is we establish a funded, probably partially by the OEM, partially by customers and then we administer that through a third party or regulatory agency. The decision of what happens to the battery is made by the third party. The backstop puts that decision on the backs of insurance companies or dismantlers to decide the value and what should happen. The producer responsibility means the OEM needs to have control of the battery; if we are going to be responsible, we need to have that responsibility.

NL: THE way we do this with any other product is either through a third party or the manufacturer funding a program, I don't think we have ever had a producer responsibility program that required the OEM to physically get back the product. I am still struggling with why that is so important.

SH: If you want to make the OEM responsible for the batteries, I don't know how they can be responsible without having access to the batteries. If you want us to just contribute to a fund, that's pretty easy.

NL: In my mind I think it is a semantic difference, I'm not imagining that you are physically responsible, I'm imagining that the cost of managing the battery are borne by the manufacturer or consumer.

SH: If it's just financial responsibility, there are many ways we can do it. If we are truly physically responsible, this is the only way I can think of.

NL: I think there is a lot of value in this proposal and don't think we should dismiss that third rail, and I appreciate you bringing this forward. Also, what this says option 1, is there an option 2?

MO: That was added by the UC Davis team.

Reading comment from Vanessa Coleman: "Individual EPR exists, as does operational not just financial"

Could you expand on this?

VC: Yes, there are many variations of EPR schemes. There are few that are individual but they exist, there is financial, and there is operational. Where Steve is headed looks more operational and hands on vs. a more standard financial EPR that we are used to seeing in California.

BK: Where would this proposal kick in, would this be only for batteries that do not have useful remaining life? Or would this apply to batteries that could be repurposed?

SH: That's an excellent question, does the battery have innate value when it's handed over? We didn't want to discriminate there because we want to be responsible. You could have another version of this where they do discriminate and batteries with remaining usable life stay in the system.

BK: If a manufacturer has that type of responsibility and has control over those batteries, there may be a lot of batteries that have repurposing potential where the legal advisors to the industry would say it will open up more liability and recommend avoiding repurposing and sending it straight for recycling, so that's a concern I have.

SH: That is something we have been thinking of internally. There is a concept called life cycle analysis, and if you are looking the least harm outcome you may get a different optimal pathway compared to purely economic. I don't have all the answers right now but acknowledge that it is a good question.

MO: Thank you Bernie and Steve. Just as an aside when you mentioned life cycle assessment, I'm sure the UC Davis team was excited because they are big on LCA. We had one more comment from Gavin McHugh at the State of California Auto Dismantlers Association that were sent out yesterday, I will read word for word:

"The State of California Auto Dismantler's Association (SCADA) has reviewed both the Alliance for Automotive Innovation proposal and the Ford EPR proposal. SCADA is generally supportive of the Alliance's proposal, although, they did want to offer a few comments and suggestions.

1. SCADA requests the Alliance's proposal be revised to explicitly provide that a battery removed from an EV by a licensed dismantler can be used as a

replacement battery for repairs. In both the “in-service out of warranty” and “end-of-life” scenarios it is not clear that this is an option. The language includes reference to “reuse” as an option for the licensed dismantler and the repair facility, but this should be clarified to explicitly provide that a licensed dismantler can sell a battery directly to an entity doing the repairs.

2. The proposal does not address vehicles acquired by licensed dismantlers from tow yards, repair shops, local government abatement programs, public, etc. As such, SCADA recommends the proposal be clarified that vehicles acquired by a licensed dismantler from any source be managed and handled just as vehicles purchased at auction.
3. SCADA recommends the OEM backstop program be expanded to include abandoned and orphaned vehicles that are dumped along roadways, in fields, etc. Such an expansion would provide an additional pathway for vehicles, that for whatever reason, are not being managed/processed through a local government abatement program.
4. SCADA recommends that there be a state entity responsible for enforcement and compliance of these requirements and that there be established a stable source of funding to support and maintain the effort. Would the proposed core exchange program fund be a viable option to fund the enforcement program?

Unfortunately, SCADA is not supportive of Ford’s ELV EPR program as currently proposed. Over time it would be very harmful to the licensed dismantler and repair industries because it cuts out licensed dismantlers. It would also hurt consumers because there would be substantially less affordable repair options and likely lead to a windfall for unlicensed dismantlers that are not regulated and operate in the underground economy.

Thank you for your consideration of SCADA’s views on these proposals.”

MO: At this point we have gone over the two proposals. Caroline has stepped away to address a fire-related emergency, a reminder that we are impacted by these natural disasters and our best wishes to everyone. The survey is not due until late next week and the AG members will not be responding to the survey at this time, but we will discuss the questions again to have another opportunity for people to offer their opinions. We will have the responses when we meet next on September 28. Alissa, Meg, or Jess, do we know who will be presenting?

AK: I’ll be doing it. This will look pretty familiar except that it includes the changes we made based on our meeting two weeks ago. The goal is different than our goal before when we were just trying to get our wording; today is an opportunity to have discussions about specific questions. We will try to get through all of these but the likelihood may be low given how much discussion was inspired by the discussion we just had with Steve and Dan. I’ll invite folks to raise their hand or say in the chat if they have a comment.

MO: Maybe we can work backwards since last time we were rushed towards the end?

AK: That's a great suggestion, I'll advance through to the end. The last group of questions that we didn't spend too much time on were related to supporting safe and efficient reverse logistics. I'll step through here and you can interrupt or raise your hand anytime you want to say anything.

MO: A quick comment on number one, there are similar efforts moving through the state legislature right now so this is something I think would receive broad support moving forward. Number 1 as well as number 2. Just to raise that to the group's attention.

AK: The other policies are requiring pre-approval to bid on EVs at auctions and interpretation of universal waste regulations, this basically says any opportunity to reduce regulatory burden on batteries should be adapted but this may be a function of federal law not state.

MO: Generally speaking, we are in favor of reducing the burden to promote responsible recycling. This may not be under control of the legislature but if the EPA changes regulations, DTSC can follow those changes.

PG: Can't the legislature write a bill saying DTSC has one year to follow through with changes made by EPA?

MO: They can give a timeline. One year is pretty rapid. They could write a bill giving a timeline for DTSC to analyze and update after the EPA makes changes, but they couldn't unilaterally change the regulation.

AK: The next are developing strategic collection and sorting infrastructure and identify strategies to reduce the burden of transportation. I don't see any hands or comments. That wraps up the reverse logistics sections. We did get a comment that there is no identification of how these efforts should be funded.

TF: For some reason, I can't find my raise hand function. My question to Mohammed is regarding 4 and 6, I understand that US EPA sets regulations and states can follow. Has there been discussion at the federal level of some of these issues?

MO: I am not personally aware, I do know there has been a lot of effort and discussion around critical minerals and batteries, but I have not heard about discussions to change universal waste interpretations to facilitate recycling.

TF: I know a lot of our colleagues are following these advisory group meetings. Do you know if anyone on the federal level is following what this advisory group is discussing?

MO: I know that US EPA is following our work, I don't think to the point yet of indicating what we should or should not do, I have not received those comments. But currently they are following but we have not received input or guidelines.

TF: I understand this is out of the purview of this group, but I believe some of these issues we've discussed are critical, I believe California is on the leading edge and we have differences of opinion, but a lot of people would like to see an efficient answer.

Maybe are there are initiatives or actions that could be taken to bring this to attention at the federal level?

MO: I think it makes sense to bring this to executive and legislative branches. Related to waste classification, that is a barrier and the only way that can be changed internally within California is if US EPA makes a change that DTSC believes is a necessary one to adopt within the state, so that would be the way forward within that space.

GK: To that point about what's going on at the federal level, the infrastructure bill that's making it's way through congress, if you wanted to go through that and find out what kind of funding is being made available to support infrastructure for LIB manufacturing and recycling, there is a lot of money that will be made available to agencies to look into product stewardship issues. Some is focused on portable rechargeable batteries but there are \$6.1b focused on the battery infrastructure world if this passes which we expect it will.

AK: Any other comments or thoughts? We will work backwards and talk about the circular economy and quality recycling. The first is a minimum material recovery rate. This already inspired quite a bit of conversation, so I'll give you a minute to read it.

We did hear from some stakeholders at the last meeting who wanted to mention that they are not supportive of MMRs and felt that it could handicap the ability for recyclers to handle batteries in the near-term since pyrometallurgical recyclers will not recover lithium, for example.

TA: If you force recyclers to recycle things that are not economical, it will come out of someone's pocket. This will evolve as technology develops and putting hard numbers will constrain recyclers. It will be hard to impose this on out-of-state recycling and there are so many factors that can affect how this is determine. There could be a policy that we maximize recovery but putting in absolute targets I think is a mistake.

NL: Why do you assume that we would not be able to put the same targets on anybody processing batteries from California? One of the reasons we would do this is to level the playing field for California processors who have high standards.

TA: These batteries will go out of state, there will not be a facility in California for at least five years. You can recover black mass which is 100% of these materials, then it will be sent to a refiner in Europe or China. The first place will check the box and it will be meaningless.

NL: There's no reason we couldn't have targets that go beyond that.

TA: You're just chasing these things that you will not have the ability to audit. These things will end up where it's economically viable and that's just where it's going to go. We can try to force it, if you add thousands of dollars to the price of every car you can get all the batteries recycled in California, but that's not a good use of resources.

NL: I think we should tease this out because I think the metals that are less valuable will not get recovered and it will be a race to the bottom and

TA: Then you have to start subsidizing recovery. Manganese for example is a very low-value. If you want to recover manganese, you'll have to.

NL: We aren't worried about stuff that is economical, it is the metals that may not be economic that we want to get recycled that we are targeting. We require this with construction materials because they may not be

TA: Or you tell manufacturers you have to use recycled content, and then they have to buy it. We are trying to encourage

NL: I disagree with this being outside the scope because I can't imagine us introducing a bill that wouldn't include this so we should have further conversations. The EU's bill included this too, so I don't think it's outside the scope.

PG: I do think this is extremely complicated and difficult to define in the practical recycling world we see ourselves in now. There are crazy claims about how much recovery is being done at a specific plant in the US. But as Terry pointed out this just means the black mass has that % of materials listed, it doesn't mean that material will get further refined where material recovery rates will reach the levels that are proposed here. It is complex to define recovery rates based on the multiple steps in the process and the changing technologies, and layer that with the six different varieties of LIBs it will make this very complex. This will be a great goal but unless you have regulators overseeing this it will be difficult to achieve on a global level.

TF: Part of the issue is that we don't have a domestic supply chain. I think the EU and EC will have a challenging time setting this up, and things are more tightly controlled there, and they have a battery supply chain. I agree that this is a tricky can of worms we are opening up.

AK: The next option was third-party verification of recycling to ensure environmental performance and worker safety.

TF: Conceptually I like this idea, but what are the qualifications of the party doing this verification? There are very few people who are knowledgeable about the battery recycling industry. There may be more neutrality with a public agency than a private third party. It may be difficult to find someone who can do an unbiased and have the experience to do a qualified assessment.

PG: Just to respond to that, this couldn't be done by a regulatory agency because this is to make regulatory agencies in jurisdictions to respond to a single set of standards. There is already a large certification industry that I'm sure Honda and other companies here at the table are already contracting to obtain certain certifications that are required in the auto industry. This would be a new effort and would not relate to the OEM operations but to the recycler's operations by putting them on an even playing field.

TF: We do have a lot of ISO certifications and others, but I think we have to get agreement on what certifications are necessary and maybe the certifications don't pertain to recycling capabilities. We can have certifications on environmental or other issues. Maybe I'm overthinking this and if it meets the environmental standards of the car company or the state of California it's fine, but I think we should talk more about

PG: Yes, and keep in mind that it wouldn't happen tomorrow because the first step would be to develop what the standards should be, and then who would be the qualified auditors. This is a long-term goal but it's one that the legislature could set in motion.

TF: My point is that this is not something that will happen overnight.

TA: I have a concern about the lithium-ion batteries, production scrap, and derived materials. We are getting beyond the scope of the battery. You are introducing a term with "other derived materials" that has never been defined and for these purposes I would limit it to lithium-ion batteries.

MO: We received a comment from Lisa Crosby (LC): "E-Stewards is considered a leadership standard rather than a consensus standard"

NL: Can you clarify that distinction?

LC: I am hesitant to speak on this, but my understand of the difference between a leadership and consensus standard is that the standard is meant to set a goal for the highest performance and give companies an edge as recognized leaders, and that's why it is not a consensus standard.

AK: The third and fourth are to develop a reporting system for batteries retired from use and for LIB recovery rates.

TA: When you say "final recipient of the battery" in number 3, if you're a recycler and you sell the batteries to somebody, is that what you're looking for here? "Final recipient" may need to be defined. Anyone handling this is only capable of reporting the next in line and not the final recipient.

AK: That's a good point, the phrasing is ambiguous but the intent was to be able to trace batteries to where they are going.

PG: The way I read this is that it would be something similar to what we have for other hazardous waste where there is a manifest that tracks the waste.

TA: That's not how a waste manifest works, it goes from point A to point B.

PG: The way I read this is that it would be online instead of a paper receipt.

TA: If I sell an EV battery to somebody who is going to refurbish it or sell it to somebody else, I don't want to be responsible for finding who the final recipient is. Move it to the next responsible party and document that and move on.

AK: Any other comments or thoughts? Terry, I think your point about recovery rates applies here as well, in terms of the format of the battery and black mass, that should be specified. The next option is recycled content standards.

TA: I have a question. Is the intention here that the recycled content standards would apply to manufacturers if they want to sell a car into California?

AK: I believe that is how it would work; I invite anyone from the subcommittee to chime in if I'm misrepresenting anything.

AMSC: Yes, that is what was discussed in the recycling subcommittee, Terry, this would be an obligation on the manufacturer.

TA: I support manufacturers using recycled content, but the manufacturers would need to weigh in on whether the numbers make sense. I support recycled content, but it comes down to what is the best home for material. Nickel is used for stainless steel and for the nickel hydroxide used in LIB manufacturing. Putting the nickel into stainless steel which is a 100% recyclable outlet and displacing virgin material may be a better economic option than forcing it back into batteries. So you are forcing something that the market may not support just to say we are recycling it back into batteries.

MO: The rates and numbers and the dates are just an example, the point would just be to say that the legislature would potentially convene a similar advisory group to this one and look into what the research and market has shown about the optimal destinations for recovered materials and then create phased-in rates and review and revise them as necessary. The numbers and dates included here are just an example.

AK: Thanks Mohammed, that's correct. These numbers were drawn from the EU battery directive. Any other comments on this? The final option was some kind of requirement for design for repurposing, reuse, and recycling. The next section is support repurposing, reuse and recycling industry development. The first two are establishing a timeline for DTSC permitting process and an economic incentive package provided to LIB recyclers. The next two were to expand eligibility for relevant incentive programs to include repurposed batteries, and incentivizing a disassembly industry within California.

PG: I'm not clear on number three. What is the subsidy are we talking about?

AK: I believe this is a program through the CPUC.

RB: The CPUC oversees a program that subsidizes new energy storage system. Expanding the eligibility rules for this program to include repurposed vehicles would support the repurposing industry. There are general survey questions in here about incentive packages for disassembly industries and recycling industries but not for repurposing industries so this is a narrow example of how the repurposing industry could be supported but it's a far cry from the sweeping incentive packages that are supported for others.

BK: If you're going to get into this issue then it seems like we would need to

MS: The purpose was to make reused battery systems eligible for the same incentives as new batteries to allow them be cost-competitive with new storage systems, which was mentioned as a barrier from the reuse committee. We have addressed that responsibility for recycling or disposal

GN: The only thing I'll add is that point three also ties into California's renewable energy standard

BK: I'll add my comment that I think if this is within the scope that it should stay.

NL: I think this is within the scope.

MO: I also agree this is within the scope and what happens after will be yet to be seen, and I see Todd has said in the chat that he agrees as well.

CG: I received a comment from Freeman, are you able to unmute? If not go ahead and email that email address and I will read your comment or question.

MO: There is a comment from Thomas Novak in the chat: "If there's a requirement to track the battery from recycler to next vendor in the value chain, need to include specific car information on the battery, I.e. vin."

AK: The next section of questions is about access to information. The first options are requirements for a physical label and an electronic information exchange (i.e. QR code). The next is for a Universal Diagnostic system, the difference between this and the CARB standards is that it would be readable after the battery is removed from the vehicle.

RB: I would say that assessment of battery pack state of health is a critical issue facing the reuse and repurposing industry today and this would go a long way. You can pretty easily read pack state of health while it is in the vehicle, but this would enable access to critical information after removal. This is very important and would support reuse and repurposing.

AK: There was a general recommendation after this to make data available without specifying the mechanism. Okay, leaving the toughest for last. The first question on defining responsibility for EOL management and financing is the producer take-back option that Steve presented. Would anyone like to discuss this further?

The next option was producer take-back where returning the battery to the auto manufacturer was optional and EOL responsibility transfers to the repurposing company.

SH: I had forgotten that we had this option on the list but my read on this in case anybody cares is that this is like the full vehicle backstop that Dan explained but it would be a battery backstop instead of the vehicle.

TA: Question on where the auto manufacturer responsibility begins. It says responsibility begins once they have been notified. Are you saying they have responsibility upon notice?

SH: The intent would be that we would be responsible when notified and then would be responsible to pick up the battery.

AK: I think the intent was to specify that the manufacturer has the responsibility to pick the battery up. If this moves into our report we can make sure that the clarification is included.

MO: Just a note that we are about fifteen minutes away from the scheduled end of the meeting.

AK: We will skip the vehicle backstop since Dan discussed it earlier. The next options discuss schemes where fees are gathered to finance EOL management. The seventh is defining the current as the responsible party for EOL management. The final question asks if a fund is created, which party should manage the program and what should the funds be used for.

MO: I think we will have to wait to get answers from the survey.

MO: Next I think Caroline was going to take the next section and we were going to talk about scheduling for the rest of the year.

CG: I'll hand it over to you to schedule while I get my notes together.

MO: Our next meeting is scheduled for September 28 by which point we will have results to present from the survey and we will discuss the next step, which is drafting the report. The UC Davis team is working on this and will present a draft report by November 1. Let's try to schedule a meeting for one of those first Tuesdays in November (2 or 9). [went through roll call] and there is a preference for November 2.

Freeman Hall: We have inputs on some of these recommendations. I wanted to see if there is a way for us to provide feedback on the survey.

MS: We can create a public version of the survey for people who are not part of the advisory group to provide feedback.

NL: How hard would it be for members of the public to fill out the survey and tally up those responses?

MO: I think we don't intend to do that or tally their votes but members of the public can provide feedback that can get incorporated into the report.

CG: To add onto that, the purpose of this is to understand where we stand on the committee and how we will move forward into the report writing phase. We do want to gather input but this was the purpose of the survey.

NL: I think there are advocates and others who we have not heard from and sending them the survey would be one way to get their input.

CG: Is there anything else we are missing or topics where we should dig deeper?

MO: We are trying to cast a wide net to get input and everyone should feel free to forward the survey to their networks but the purpose is to understand where the advisory group stands. To wrap things up, we discussed policy proposals from Dan and Steve, heard an update from Alissa about the survey, and finalized the date for our next meeting. Thanks everyone for your time and for another productive meeting.

CG: Thanks so much everyone and meeting adjourned.