

Lithium-Ion Car Battery Recycling Advisory Group

Meeting Minutes for 12.7.2021

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)
 - Mark Caffarey (MC)
 - Todd Coy (TC)
 - Toshiya Fukui (TF)
 - George Kerchner (GK)
 - Steve Henderson (SH)
 - Bernie Kotlier (BK)
 - Nick Lapis (NL)
 - Alison Linder (AL)
 - Nathan Nye (NN) for Teija Mortvedt (TM)
 - Geoff Niswander (GN)
 - Les Schwizer (LS)
- Absent for roll call
 - Mark Caffarey (MC)
 - Jennifer Krill (JK)

*Quorum met with 16 members

2. Comments from Jared Blumenfeld (JB), California Secretary for Environmental Protection

JB: Congratulations to Caroline and the rest of staff, and to the rest of you for doing an absolutely tremendous job. You're probably in the top 10% of task forces in the world who are actually meeting and coming up with tremendous policy. Obviously it's a complicated, multifaceted issue and the commonsense approach you've used here has been great. The Governor's goal of 100% EVs by 2035 has prompted a lot of momentum. Recycling and EOL has been one of the barriers that prevents some people from engaging and wanting to buy an EV, so the work you're doing has been so helpful. Really appreciate UC Davis, the facilitating and report writing has been great and I really appreciate you guys. I also want to appreciate everyone who is not a member who has participated and provided expertise in this issue. I think the legislature will be surprised that Caroline and the UC Davis team have kept everyone on track so it will actually be a report that gets submitted on time, and the recommendations you've made are directly implementable and will be useful to turn into policy. I think a lot of people will

be following what you've done. This has been a great exercise in civic engagement, hopefully you've had some fun, from what Caroline has said it's been a constructive, cordial, civil discourse on how to move forward so I appreciate that. I'm happy to take any questions but mainly I just wanted to share my thanks and turn it back to Caroline.

CG: Does anyone have any questions? Suspiciously quiet group today

JB: You may not know this but Caroline in the rest of her job is responsible for emergency response during fires, and [something else very important that I wasn't able to type fast enough to catch]

NL: I wanted to express how much your staff really contributed to this process. I've been thinking about it and one of the things about this issue is that it crosses from the CEC perspective, to CARB, to CalRecycle, to DTSC, and having all the folks in the room really helped us create a better outcome. As we're moving towards implementation there is a need for the State as a whole to be a convener and facilitator of whatever the final product is because there are so many perspectives that need to be incorporated. What are your thoughts on that?

JB: Appreciate the comments. On the first issue, there's nothing that really replaces people working together. Government is created in silos that almost intentionally seems to preclude people working together as issues arise. Almost any issue deals with multiple facets of government. I also want to thank Mohammed for all his work, to your point about cross-department conversation. Nick you're probably even better situated to see this with your experience working with legislature. This is a subject that will be of a lot of interest to the legislature and from our perspective from the Governor's office, whether it's budgetary or other elements we can support, we will look to the recommendations to do that. They are an essential part of our journey to 100% electrification of the transportation sector. I am confident there will be a lot of receptivity to these recommendations primarily because of the consensus of the main recommendations you came out with. Thanks to everyone, I look forward to seeing the bound version going on to the legislature. Caroline and I both grew up in New Jersey but we thought for the purposes of this task force we'd study English elocution.

CG: New Jersey has a special place in my heart but that's a story for another time.

3. Administrative items – Mohammed Omer, DTSC

MO: Thanks everyone, I am the unit chief in the permitting division at DTSC. First a few administrative items, this meeting is being recorded and will be available on the website. Draft meeting minutes will be uploaded as well. Live webinar is available for those who do not have access to zoom. We request that questions be sent to calepa.workshops@calepa.ca.gov and I encourage all members of the public to visit our webpage and subscribe to the listserv. In a moment I will open the floor to members of the Advisory Group to share updates. Last meeting we did not approve the minutes from October so I'd like to move to approve those as well as the minutes from November 2. *no objections.* If anyone has updates to share go ahead.

BK: This is poorly timed but maybe not completely since we have a meeting today. I received an email yesterday as did Todd Coy from my co-chair on the second-life subcommittee at NaatBatt. He asked about the carbon trading market referencing ours

in California and also one in Quebec. He asked if second use of batteries might qualify for carbon credits because by delaying the final disposition of the battery we are extending the use of the energy used to make them. Could they possibly be eligible for carbon credits if the batteries are used in second-life?

CG: I wonder if you could share the email with me and I will get feedback from my colleagues at CARB.

NL: It is unlikely since any offsets must be additional to common practice. To the extent that we want something to be common practice that [inaudible]. I can follow up with you offline.

BK: I'll forward you the email and Caroline if anyone else is interested you can send it along to them as well.

LR: Just commenting on that I love the idea for what that's worth, I think it's a great way of incentivizing what we're already doing and if there's a way to make it happen I think it's a great idea.

MO: With that I'll turn it over in a moment to Dr. Alissa Kendall from UC Davis, since a couple of members were absent when we voted Alissa will give them a chance to vote now and then we'll have an update for the report. This will primarily be an opportunity to provide large substantive comments.

*LR is in car and JK is joining at 10 so we will circle back

4. Update on report draft process—Jessica Dunn, UC Davis

JD: We will go through some of the changes in the latest draft of the report, then we will go over the final process for developing the final report including a timeline for additional revisions. As you all know there were a lot of policies so

Thank you all for sending edits, it was clear that was a lot of thought that went into the feedback and improved the report. We did a similar editing process as we would do with an academic paper where we systematically documented the responses on how the report was modified or explained why we did not make changes. If you provided comments you should have received the edits back in an email from Meg and I, so if you haven't let us know. And if you have lingering questions or concerns about how we addressed your revisions bring it up with us, we can continue to make changes or provide an explanation.

There were a lot of substantive changes. We added an Executive Summary, added details in the introduction about the ZEV mandate, added information about the Lithium Valley Commission in the critical materials subsection, added projects funded by the CEC in the reuse section, added a quick overview about EOL policy in China and the EU, added a conclusion, and also added the survey outcomes in the appendix. You'll also see for the policies that aren't recommended but did receive majority support they are discussed here. So we added a beginning and end and tried to contextualize the information with aligning efforts in California.

The Executive Summary is on page 1-5. It summarizes the process we've gone through, the policy recommendations, and emphasizes that this is a new industry and policies will need to be reviewed as the industry develops.

The projects funded by the CEC will provide more data on battery degradation and enable more accurate lifespan estimates. We have heard from two of the participants in this project, Ryan Barr from RePurpose Energy presented for the Advisory Group in 2020, and Steven Chung from ReJoule was not an invited speaker but was an active participant and contributed a lot of helpful insight.

We added information about the EU's proposed regulation which we have discussed extensively, as well as some information about China including a recent proposed ban on using second-life batteries for large-scale storage.

Finally, in the conclusion we summarized the most widely supported policies, highlighted areas where further research was recommended and emphasized the importance of revisiting policies given the nascency of the industry.

JD: I'll pause here in case anyone has any comments.

DB: In the survey results I believe the results for EPR with and without companion legislation were swapped.

JD: Thanks for pointing that out, those details are the hardest sometimes but they make a big difference. Now we'll talk about the final revisions process. This draft of the report will be available until February 16 and we will ask AG members and the public to submit comments by that date. We will incorporate the feedback and provide a revised draft by March 15, and the Advisory Group will vote on the final report.

DB: Is there another period where you'd like Advisory Group comments in the near-term or is it the same period as public comment?

JD: It's the same as public comment, the deadline is February 16 but you can certainly provide us with comments before then or reach out if you'd like to have a dialogue. And feel free to share this draft with anyone you think should read it and provide feedback. Finally we got a suggestion to add an area for future research, which we thought was a great idea but something that should be discussed for the Advisory Group. This list was drawn from policies that are already in the report. I'd like to open this up to the Advisory Group for feedback on whether you think this is a good idea, if these are appropriate research topics to include, and whether there's anything you think should be added.

GN: I like the bullet points that are here and I'd include reevaluation of the safety aspects of our recommendations as the battery chemistries change.

JD: Great point, thank you

TF: I like the idea of areas of future research but how would that apply? Will there be a mechanism to follow up or is this just a recommendation to follow up on?

CG: This could be a place where if additional funding became available these could be high priorities, it could feed into supporting work, or if someone wanted to take it on outside this space.

TF: I've often said that this is a moving target and these recommendations need to be revisited as the industry develops. There may be unforeseen circumstances.

JD: Thanks Toshi and we have tried to hit that in conclusion, the last paragraph states that it's a nascent industry and policies will need to be evaluated, but I hear your point that maybe that should be included in the recommendations as well.

BK: I think it would be interesting to add further research on how the utilization of second-life batteries reduces the carbon footprint of the manufacturing of those batteries.

JD: Great thanks Bernie. If anyone thinks of anything not on the spot please send us an email, we're tracking all the comments we get via email as well.

CG: Thanks UC Davis and thanks to the team for doing such a thorough job tracking and responding to the comments. Where we are now—we have the option to say that with some minor revisions we give our blessing to send the report out to the public for public comment. Or, we can do more work on the report and meet again in January to make that determination. Any meetings after January will take place in person, likely in Sacramento. With that, I'll go down the list and call on everybody. I'd appreciate getting everyone's feedback on putting out this version with minor changes for public comment.

TA: I read through everything over the last couple days and I think it's a good product, the only thing that really caught my eye was cleaning up the interchange between disposal and recycling, I don't think there's anything contentious there. It seems like you've captured all the voting and proposals and made it clear how everybody selected them. I'll continue to read through a bit more closely but overall I think it looks good.

DB: Similar to Terry, overall I think the documents are looking good. If there are minor comments would it be possible to get those to the team by the end of the week before it goes out for public comment?

AK: If they are modest changes we can get those done by the end of the week and we'd need them by Friday morning at the absolute latest.

CG: Let's say Friday at 10am at the absolute latest.

MC: *absent*

TC: Well done, I don't really have any comments other than that there seems to have been confusion that people think our name is KBI recycling and it should just be KBI on page 14.

TF: I think it's a well-written, informative report. There are a few things I want to re-read but overall I think it's well done, it's hard to capture all the perspectives. I think I'm happy putting it out for review, the more feedback we get the better it will be so I'm comfortable with that.

SH: I also support using this version with the excellent work of UC Davis.

GK: I think it's time to let it go and let some other eyes take a look at it. I'm sure the public will find some things that we might have missed. Hats off to UC Davis and the team for the work you've done. I should add that the State of Washington will be introducing an EPR battery legislation and they want to capture what they refer to as "large-format batteries" and I told them they don't need to do a study, I recommended they take a look at what we've done here and save themselves some time.

BK: First of all, I want to congratulate and thank Caroline, Mohammed, and the UC Davis team. I don't have further comments, I think it's ready to go. There might be a few small things here and there but I don't think that should hold up the process.

JK: *absent*

NL: I think the report does a good job of capturing the conversation we had and want to thank the UC Davis team because it really is a well put-together report.

AL: I want to echo everyone's comments thanking the EPA team and UC Davis team for getting us to this point. I also will be submitting some minor comments but I think we can move forward with the process and release this to the public.

TM: I think we are pretty supportive of the current draft and we'll let you know if we have any edits before Friday.

Audrey Depault (Tesla): I think this is pretty exemplary compared to the processes or lack thereof that we've seen in other jurisdictions and I appreciate the work you've done engaging a variety of stakeholders.

GN: I'll echo my fellow committee members, two years ago I didn't think we'd have something this well thought-out to stand by so thank you Meg, Alissa and Jess and Caroline and Mohammed. As committee members we're pretty well saturated and I think it's time to turn it loose to the public.

LR: Comprehensive, detailed, if you guys are looking for a job upon graduation let me know.

LS: Big ditto, kudos to the UC Davis team for handling this group, I agree we should let it loose to the public.

HR: Hey, sorry, I double muted. Really great job, it's a solid product. I haven't had a chance to look over the most recent revision. From an Energy Commission perspective we want to make sure we don't add cost to EVs and I think the report did a nice job of balancing those priorities.

AMSC: I agree this is a comprehensive report, I think we are ready for external review. We also had more minor comments so we will send those by Friday. Thank you to UC Davis, you did a tremendous job.

MO: I certainly will not say anything different from everyone else. This has been a tremendous lift by the Advisory Group and Alissa, Jess and Meg. I was not pessimistic but didn't imagine we'd be where we are today.

CG: It sounds like we are of a mind, **if we have comments on this draft we will get them to UC Davis by 10am on Friday. They will be incorporated into a draft that will be sent to the public early next week. We will provide information on how we will be receiving comments and we will be accepting comments until February 16.** I don't feel at this point we need to convene in January so our next meeting will be in-person in March and we will start planning that in the new year. I think with that, Mohammed?

5. Policy vote from AG members who were absent at the last vote

- Backstop and core exchange:

- LR: in favor
 - JK: in favor
- Producer takeback with no companion legislation
 - LR: oppose
 - JK: In favor
- Producer takeback with companion legislation
 - LR: oppose
 - JK: In favor
- Environmental handling fee:
 - LR: in favor but there's a tendency for these fees to get out of hand. But if there is a careful evaluation of what the fee should be I'm in favor
 - JK: In favor
- Environmental handling fee gathered through registration:
 - LR: in favor
 - JK: in favor
- Hybrid fee:
 - LR: Oppose
 - JK: In favor
- Access to battery information
 - Physical labeling requirement
 - LR: in favor
 - JK: in favor
 - Electronic information exchange
 - LR: In favor
 - JK: in favor
 - Universal diagnostic system
 - LR: In favor
 - JK: in favor
- Industry development

- Economic incentive package provided to LIB recyclers in California
 - LR: in favor
 - JK: in favor
- Economic incentive package for disassembly
 - LR: in favor
 - JK: in favor
- Establish timeline for hazardous waste processing permits
 - LR: in favor
 - JK: abstain
- Expand eligibility for relevant incentive programs to include reused and repurposed batteries
 - LR: in favor
 - JK: in favor
- Circular economy and quality recycling
 - Material recovery rate
 - LR: oppose required targets
 - JK: in favor
 - Design for reuse, repurposing, recycling
 - LR: in favor
 - JK: in favor
 - Third-party verification
 - LR: oppose
 - JK: in favor
- Reverse logistics
 - Support enforcement of unlicensed dismantling laws
 - LR: oppose
 - JK: in favor
 - Develop training materials
 - LR: in favor

- JK: in favor
- Identify strategies to reduce the burden of transportation
 - LR: in favor
 - JK: in favor
- Develop strategically located infrastructure
 - LR: abstain
 - JK: in favor
- Universal waste interpretation
 - LR: in favor
 - JK: in favor
- Additional supporting policies
 - Recycled content standards
 - LR: oppose
 - JK: in favor
 - Reporting system for retired EV batteries
 - LR: oppose
 - JK: in favor
 - Develop reporting system for LIB recycling recovery rates
 - LR: in favor
 - JK: in favor
 - Require pre-approval to bid on EVs at auctions
 - LR: oppose
 - JK: in favor

AK: The Universal Diagnostic System changed to majority support so that will be reflected in the final report.

6. Public Comment and Final Remarks—Mohammed Omer, DTSC

MO: Thanks everyone, at this point I'd like to address any questions from the public that we may have received. Did we get any emails to the public comment address? *no* I will wrap up and adjourn the meeting at this point. First we convened, established quorum, approved minutes. We were lucky to have secretary Blumenthal address the group. Next Jess provided an update of the report, we established that AG can send

comments by Friday at 10am, then we will send out the report for public comment next week. Our next meeting will be in March in-person. Lou and Jennifer voted ,so now we have votes from every advisory group member.

CG: Thanks Mohammed, thanks to the UC Davis team, thanks everyone for joining. I look forward to seeing everyone's comments and getting the draft to the public. I hope you all have a restful holiday season, and we will see you in March for an in-person meeting. Meeting adjourned