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Calif. EV Battery Recycling Plans Could Set National Trend

By **Thomas Manakides and Mark Tomaier** (December 8, 2022, 3:58 PM EST)

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In October, the White House launched its American Batteries Materials Initiative, which is aimed at "secur[ing] a reliable and sustainable supply of the critical minerals that power everything from electric vehicles to homes to defense systems."[1] This initiative is in part a response to a growing demand, spurred by the Inflation Reduction Act, for domestically sourced battery minerals.

Among other new requirements, the IRA requires that, to obtain an electric vehicle tax credit, EVs must reach a specified percentage of the value of the battery's critical minerals that are "extracted or processed in the United States or a U.S. free-trade agreement partner or recycled in North America."[2] This percentage ramps up from 40% in 2023 to 80% in 2027 and after.[3]

These are challenging requirements to meet, because most of the minerals used in the U.S. come from outside the country.[4] By including domestic recycled minerals as a viable source to meet the requirement, the IRA recognizes that mineral extraction alone will not meet the domestic need for EV battery minerals. EV battery recycling offers a partial solution to this challenge.

The American Batteries Materials Initiative reflects this in seeking to "help guide research, grants, and loans supporting environmentally responsible critical minerals … recycling."[5] Although battery recycling offers some potential supply chain relief, it presents a significant issue: how to address the management and policy issues inherent in recycling these critical minerals.

California has provided some guidance on this growing need. Earlier this year, the California Lithium-ion Car Battery Recycling Advisory Group released its finalized recommendations on policies pertaining to the recovery and recycling of lithium-ion vehicle batteries sold with motor vehicles in California.[6]

The advisory group, comprised of state agencies, automakers and other interested parties, has been developing these recommendations since 2019. This report of recommendations was shared with the California Legislature on May 9, and may serve as a blueprint for legislation — not only in California, where the Legislature returns to session in January,[7] but also in other states, and at the federal level.

The advisory group's recommendations come in advance of an influx of EV batteries that will need to be retired. According to the director of the California Department of Toxic Substances Control, the state has

"five years to get the infrastructure and procedures in place to extend the life of EV batteries and properly recycle them once they are no longer useful."[8]

This infrastructure is critical to address the batteries in over 400,000 zero emission vehicles on the road in California, which have a projected lifespan of 10 to 20 years.[9] The challenge is that these batteries contain metals and corrosive materials, which the advisory group asserts can trigger a host of regulations when the batteries need to be recycled or disposed of — though the group recognizes a lack of clarity as to the applicability of those regulations, and a lack of alignment generally between regulations at the state and federal level.[10]

As the major takeaway, the advisory board provided recommendations on assigning responsibility for managing battery reuse or recycling. with the purpose of defining responsibility for the coordination and payment of recycling in cases where the cost presents a burden for the vehicle owner and the battery is unwanted. The most popular recommendation on this issue — "core exchange with a vehicle backstop policy" — gained 93% support in the advisory group.[11]

Under this approach, responsibility is assigned as follows for out-of-warranty battery reuse, repurpose or recycling under three possible circumstances. If the EV is:

- Still in service, and the battery is replaced before the vehicle reaches end of life, or EOL, the entity removing the battery is responsible;

- Reaching EOL and set to be dismantled, the dismantler is generally responsible unless the battery is refurbished or repurposed[12]; and

- Reaching EOL and has a battery certified by the original equipment manufacturer, and the battery is not being removed by a licensed dismantler, then the vehicle manufacturer is responsible.[13]

67% of the advisory group also supported a producer take-back policy.[14] Under this approach, the auto manufacturer is "responsible for ensuring proper repurposing, reuse, or recycling of its EV traction batteries by a licensed facility at no cost to the consumer if and when they are no longer wanted by the owner, and in the event no other entity has taken possession of the battery."[15]

The auto manufacturer's responsibility begins under this policy recommendation when it "has been notified the battery has reached its EOL and is available to be properly managed," and it must provide "educational materials to customers and the service/repair industry, explaining the return process."[16]

The advisory group further recommended that if the battery is repurposed, "responsibility transfers to the repurposing company," which includes "arranging reverse logistics to transport the batteries to recycling hubs; being responsible for the recycling costs; and documenting the proper disposal of the battery."[17]

Some advantages of these policy recommendations by the advisory group include identifying the contours of responsibility for recycling or repurposing EV batteries, and also providing for EV batteries to be sold to third parties at EOL.[18] On the other hand, the advisory group recognized that under these approaches, battery suppliers and vehicle manufacturers will potentially have higher costs, because they will often be responsible for managing negative-value EV batteries.[19]

The advisory group also recommended a number of policies addressing specific barriers to EV battery recycling. Because it is not readily apparent what batteries are composed of, the advisory group recommended battery labeling and digital identifier requirements.[20] By providing easy access to battery information, the time and cost of the recycling process would arguably be reduced and efficiency gained because the same batteries can be processed in uniform batches.[21]

Additionally, the advisory group supported development of strategically located collection and sorting facilities, through state-facilitated site selection, permits and land use. These facilities would support a more efficient reverse logistics network, and make EV battery recycling more cost-effective.[22] To address unlicensed dismantling, the advisory group called for increased resources for enforcement, which it maintained would improve the business environment for the licensed auto dismantling industry.[23]

Even assuming these policies are implemented, California and national regulations present significant barriers to battery recycling and repurposing.[24] As one example, a central issue for all the committees in the advisory group was defining at what point EV batteries become hazardous waste.[25] This classification affects which activities are hazardous waste treatment, and who is classified as a hazardous waste generator, handler or treatment facility.[26]

Currently, the California Department of Toxic Substances Control classifies EV batteries "at their EOL ... as a universal waste."[27] The advisory group explains that, because nationally EV batteries "meet the definition of hazardous waste under [the Resource Conservation and Recovery Act],"[28] significant regulatory burdens would be eliminated if EV batteries were considered waste only after they did not have sufficient remaining capacity for reuse or repurposing.[29]

According to the advisory group, these regulatory changes would need to occur at the federal level first. But the advisory group recommended that if the U.S. Environmental Protection Agency were to adopt this change, the Department of Toxic Substances Control should make similar changes to California hazardous waste regulations.[30]

A further issue is that slow permitting timelines for hazardous waste facilities hinder potential business development. In California, even the expedited process for obtaining a recycling permit for hazardous waste takes on average two years, a long and costly time for business developers.[31]

Moreover, the last hazardous waste recycling facility sited within California was permitted over eight years ago, adding uncertainty to the permitting process.[32] This lengthy and uncertain process can provide an impediment to industry development in California.[33]

At bottom, the advisory group's recommendations represent a significant step forward in the potential for encouraging the growth of an EV battery recycling industry in California. And given the increased demand for domestically-sourced EV battery minerals, and the coming influx of EV batteries that will need to be retired, other states will need to implement policies tailored to encourage recycling industries to develop while also maintaining environmental safety.

States are likely to rely on the California advisory group's recommendations to inform their policies on these key issues.

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[1] Press Release, Biden-Harris Administration Driving U.S. Battery Manufacturing and Good-Paying Jobs (Oct. 19, 2022), available at https://www.whitehouse.gov/briefing-room/statements-releases/2022/10/19/fact-sheet-biden-harris-administration-driving-u-s-battery-manufacturing-and-good-paying-jobs/.

[2] Inflation Reduction Act of 2022, H.R. 5376, 117th Cong. § 13401.

[3] Id.

[4] Katie Pyzyk, How the Inflation Reduction Act is heating up an already active market for critical metals in EV batteries, UtilityDive (Sept. 27, 2022), available at https://www.utilitydive.com/news/battery-recycling-metals-lithium-copper-inflation-reduction-act/632469/.

[5] Supra note 1. Supporting this goal, on Nov. 16, 2022, the White House announced $74 million in funding for projects aimed at advancing technologies and processes for EV battery recycling and reuse. Press Release, Biden-Harris Administration Announces Nearly $74 Million To Advance Domestic Battery Recycling And Reuse, Strengthen Nation's Battery Supply Chain (Nov. 16, 2022), available at https://www.energy.gov/articles/biden-harris-administration-announces-nearly-74-million-advance-domestic-battery-recycling.

[6] CalEPA, Lithium-ion Car Battery Recycling Advisory Group, https://calepa.ca.gov/lithium-ion-car-battery-recycling-advisory-group (last visited May 8, 2022).

[7] A California bill predating the Advisory Group's report sought to put a recycling program in place to dispose of, and recover critical materials from, rechargeable lithium ion batteries in zero-emission battery electric vehicles; the bill was never voted on. See State fleet: recycling program, S.B. 1346 (Cal. 2020).

[8] Kathryn Barnes, EV batteries are toxic and weigh 900 pounds. Where do they get dumped?, KCRW (Feb. 7, 2022) available at https://www.kcrw.com/news/shows/greater-la/ev-russia-ukraine/electric-car-batteries.

[9] Supra note 6.

[10] See CalEPA, Lithium-ion Car Battery Recycling Advisory Group Final Report 41 (2022) ("The regulatory environment within California, and at the national and international level, is considered a barrier for the [lithium ion batteries ('LIB') recycling industry. There is a lack of clarity as to regulations relevant to LIB recycling and a lack of alignment between regulations at the state and national scales"); id. at 2 ("A complex set of regulations and standards cover the logistics, reuse, and recycling of LIBs within the U.S. and California").

[11] Id. at 6.

[12] "If an EV battery is directly reused in another vehicle with no alterations, the process for EVs still in

service shall apply. If the battery is refurbished or repurposed, the responsibility transfers to the refurbisher or repurposer." Id. at 6.

[13] Id. at 6.

[14] Id. at 6.

[15] Id. at 6.

[16] Id. at 6.

[17] Id. at 6.

[18] Id. at 7.

[19] Id. at 7.

[20] Id. at 43, 48.

[21] Id. at 43, 48.

[22] Id. at 54.

[23] Id. at 53.

[24] Id. at 41.

[25] Id. at 53.

[26] Id. at 53.

[27] Id. at 53.

[28] Id. at 53.

[29] Id. at 53.

[30] Id. at 53.

[31] Id. at 42.

[32] Id. at 42.

[33] Id. at 42.