Oregon
Tina Kotek, Governor

Department of Environmental Quality
Agency Headquarters
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5696
FAX (503) 229-6124
TTY 711

February 16, 2024

To: Co-chair Dembrow, Co-chair Pham and members of Joint Committee on Ways and Means, Natural Resources Subcommittee

From: Oregon Department of Environmental Quality

Supplemental Information Related to Concerns about EV Battery Management at End of Life

EV batteries can be recovered, reused, or recycled in a variety of ways. They can be deployed as small scale energy storage systems (ESSs) for homes, cell towers, or streetlights; as large scale stationary ESSs providing back up power supply; reused in electric bicycles or low speed vehicles, or even as portable charging stations in areas where power supply or outlets are unavailable. Second-life batteries reduce the demand for newly mined materials used in the production of new energy storage batteries. Finally, batteries can be recycled, as this kind of recycling is continuing to improve and expand every year. A list of battery recycling plans in the United States has been compiled by the International Council on Clean Transportation.[1]

In instances where recovery, reuse, or recycling is not an option, EV batteries must be disposed of properly to mitigate environmental, human health, and safety risks. Lithium-Ion batteries (the predominant battery chemistry used in current EVs) are designated as Hazardous Waste under RCRA (40 C.F.R. part 273). As such, they cannot be disposed of in any of the solid waste landfills in Oregon. RCRA does provide exemptions for household hazardous waste, which allows certain hazardous wastes generated by households to be exempt from full RCRA regulation. However, the exemption does not apply to businesses, including manufacturers or distributors of electric vehicles (EVs) or their components.

Although household hazardous waste can legally go to a solid waste landfill, those facilities are increasingly turning away these batteries due to the associated fire risk. Note that most EV batteries are not disposed at the household level. The US Environmental Protection Agency is currently working on further designating Lithium batteries as Universal Waste, a subcategory of Hazardous Waste which will improve “safety standards” and reduce “fires from end-of-life lithium batteries, while continuing to promote recycling.”[2]

Finally, there are discussions nationally on long term policies and solutions to address the growing need to address EV battery disposal. For example, the Washington State Department of Ecology recently published a study on EV Battery Management, provided as an attachment and an ASTSWMO[3] provides additional information and resources on the topic.

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[1] List of US-based EV Battery Recyclers - https://theicct.org/wp-content/uploads/2023/09/EV-battery-recycling-plants-in-the-United-States-v4.pdf

[2] US EPA - https://www.epa.gov/hw/improving-recycling-and-management-renewable-energy-wastes-universal-waste-regulations-solar

[3] ASTSWMO Lithium Ion Battery Fact Sheet - https://astswmo.org/files/Resources/Hazardous_Waste/2022-11-Lithium-ion-Batteries-Fact-Sheet.pdf