

EPA Announces Plan to Modify and Expand the RCRA Universal Waste Rule for Lithium Batteries and Solar Panels

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As part of an effort to improve the recycling and management of wastes from the generation and storage of renewable energy, the U.S. Environmental Protection Agency (EPA) recently [announced](#) that it is developing a proposed rule that would (a) modify the existing “universal waste” requirements under the Resource Conservation and Recovery Act (RCRA) for lithium batteries and (b) expand the universal waste rule to cover waste photovoltaic (PV) solar panels. The Agency has indicated that the proposal might be ready for publication by the summer of 2025.

Background

EPA first issued the universal waste rule in 1995 to streamline the regulatory requirements for the collection and transport of certain ubiquitous hazardous wastes, and thereby facilitate environmentally sound management (including recycling) of such wastes. The facilities that ultimately recycle, treat, or dispose of the universal wastes remain subject to the otherwise applicable hazardous waste regulatory requirements.

The universal waste rule initially covered batteries, mercury thermostats, and certain pesticide wastes, but has been expanded over the years to encompass lamps, aerosol cans, and other mercury-containing equipment. Authorized states may also add other categories of wastes to their universal waste rules, and several have done so for solar panels, paints, electronics, antifreeze, and other wastes.

Proposal to Modify Universal Waste Requirements for Lithium Batteries

The universal waste rule has covered lithium batteries, like all batteries, since its inception in 1995. However, EPA has been concerned that waste lithium batteries may cause fires when improperly managed. See, e.g., EPA, “[An Analysis of Lithium-ion Battery Fires in Waste Management and Recycling](#)” (EPA Publication 530-R-21-002) (July 2021). To address such risks and to further promote recycling of lithium batteries, the Agency is developing a proposal to carve out lithium batteries from the long-standing category of universal waste batteries, and to establish modified universal waste requirements for lithium batteries.

So far, the Agency has not provided any details, but the proposal apparently would impose more

prescriptive storage requirements for lithium batteries to reduce the potential for fires. It would likely also require the batteries or the batteries' containers to be labeled as universal waste *lithium* batteries rather than simply universal waste batteries.

It is unclear whether the proposal would address broken/leaking lithium batteries or devices containing lithium batteries (both of which EPA has previously stated are not eligible for management as universal waste batteries). The Agency also has not specified how the storage requirements for lithium batteries might differ or whether other universal waste management requirements might also be affected.

EPA has not indicated that the proposal would address any of the other critical issues associated with the recycling of lithium batteries that the Agency failed to address in its [May 2023 guidance](#) on the application of RCRA to such batteries. See *generally* Beveridge & Diamond, "[New EPA Guidance on Lithium-Ion Batteries Leaves Critical Questions Unanswered](#)" (June 7, 2023). As a result, it is questionable whether the proposal will seek to resolve key issues such as the potential eligibility of lithium batteries for the Hazardous Secondary Materials (HSM) exclusions from the definition of solid waste, the application of the RCRA Land Disposal Restrictions (LDR) program to "black mass" or residues from the recycling of lithium-ion batteries, the eligibility of black mass for "partially reclaimed materials" variances, or the potential availability of regulatory exemptions for thermal processing of lithium batteries in industrial furnaces.

It is important to note that EPA's effort to revise the universal waste rule for lithium-ion batteries may face a significant legal obstacle. Under the Rechargeable Battery Recycling Act of 1996 (Battery Act), "[t]he collection, storage, or transportation of used rechargeable batteries ... shall, notwithstanding any law of a State or political subdivision thereof ... be regulated under applicable provisions of the regulations promulgated by the Environmental Protection Agency at 60 Fed. Reg. 25492 (May 11, 1995), as effective on May 11, 1995." See 42 U.S.C. § 14323(a). That provision arguably locks in the rules for rechargeable batteries such as lithium-ion batteries – and for consumer products containing such batteries, if they are "not easily removable" – as the rules existed in the original 1995 universal waste rule (absent further action by Congress).

Proposal to Classify and Regulate PV Solar Panels as Universal Wastes

PV solar panels are not currently classified as universal wastes under federal law, but have been designated as universal wastes by a few states (e.g., California and Hawaii) and are being considered for universal waste classification by other states (e.g., New York and North Carolina). On November 19, 2021, the Edison Electric Institute and several other trade associations representing the electric utility industry (and others) petitioned EPA to classify and regulate hazardous waste solar panels as universal wastes, asserting that doing so would support the transition to clean energy and facilitate environmentally sound recycling of the solar panels.

EPA has indicated that it is drafting a universal waste rule for PV solar panels along the general lines of what the petition requested. The Agency noted that "[m]anagement as universal waste will improve management of all solar panel waste whether hazardous waste or not." However, the details of the proposal remain to be seen.

Looking Ahead

As noted above, EPA is projecting a formal proposed rule in or about the summer of 2025. The Agency will then provide an opportunity for public comment and develop a final rule, which will likely

take at least one year. Any final rule would not take effect unless and until adopted by the states (except in states like Alaska and Iowa without authorization to implement their own hazardous waste programs in lieu of the federal RCRA program). The changes to the universal waste rule for lithium batteries might be deemed more stringent requirements that authorized states would have to adopt (subject to the discussion above regarding the Battery Act). However, the addition of PV solar panels to the universal waste rule would presumably be deemed a less stringent rule that authorized states would not be required to adopt. State adoption could occur over several years. In the meantime, some states may move forward with changes to their own universal waste rules for lithium batteries or PV solar panels.

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