



June 21, 2019

Ministry of the Environment, Conservation and Parks
College Park 5th Floor, 777 Bay St,
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Submitted via the Environmental Registry of Ontario

Re: ERO File # 019-0048: Regulations for Recycling of Electrical and Electronic Equipment

The Ontario Ministry of the Environment, Conservation and Parks has requested feedback on the proposed Regulations for Recycling of Electrical and Electronic Equipment and Batteries. The increasing expected production of batteries for electric mobility prompts the need to propose a circular approach enabling the sustainable management of end of life battery products. Such an approach is well aligned with Tesla's mission which is to accelerate the world's transition to sustainable energy.

Summary

Tesla's supports closed loop battery recycling when they are determined to have reached the end of their service life. However, we believe the proposed regulation is not appropriate for large scale energy storage and electric vehicle (EV) traction batteries. Tesla does not support the inclusion of large battery products in this regulatory framework. The proposed framework is more appropriate for low storage capacity and low weight batteries such as the ones used in the household. Tesla advises that these larger capacity batteries used in storage and automotive applications be removed from this policy and that government and its agencies properly consult with companies in the automotive and energy storage industries.

Large EV Traction or Stationary Storage Batteries Require a Different Approach

While household batteries can be collected safely almost anywhere, it is more appropriate for traction batteries from EVs to go directly to the producer, dealerships, or to an end-of-life vehicle management and disposal site. Tesla already has its own collection system; all Tesla batteries can be accepted and serviced at our Service Centers. The collection point scenarios laid out in the proposed regulation are more applicable for consumer electronic batteries. The requirement for a large number of collection sites is not adapted to the automotive sector. Furthermore, unlike batteries for small electronic equipment, consumers cannot and should not attempt to remove batteries from EVs and transport them to a collection site themselves. Requiring them to do so would be unsafe.

EV traction batteries and stationary energy storage batteries with a weight equal to or greater than 75 kg should be excluded from this regulatory framework and covered under a more appropriate framework such as end of life vehicle regulations. Their size and weight require specific handling that is distinct from household batteries. By way of example, Tesla's Powerwall product weighs over 75 kilograms and Tesla's vehicle battery packs weigh over 500 kilograms. It is therefore difficult or impossible for consumers to lift and transport these batteries to a collection site. Additionally, EV traction batteries and stationary energy storage batteries are attached to a vehicle or permanent structure. It is not possible nor recommended for consumers to dismantle the batteries from their vehicle or structure. Doing so safely requires some level of expertise. Therefore, the battery management process



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proposed through this regulatory framework is not appropriate for these types of battery products.

Battery Recycling Efficiency

While the battery recycling industry should strive to increase efficiency rates, there are limits to the efficiency according to the calculations laid out in subsection 11 (1). The content of plastics, petrochemicals, and graphite in batteries exceeds 30%. If 80% is the target efficiency, then this regulation asks battery recyclers to solve the plastic recycling challenge that no one else in the world has solved.

Battery Lifespan

Subsection 11 (1) also references a lifespan of three to five years for batteries. Tesla traction batteries are designed to last a decade or more. In other words, Tesla would be required to collect batteries before they even begin to fail.

EV & Storage Battery Manufacturers Should Reclaim their own Batteries

Tesla believes that producers should have the opportunity to reclaim their battery products at the end of their life, so they can be handled safely and return to the manufacturing process, as much as possible. However, to ensure EV batteries are safely handled and properly managed and recycled, consider managing them through end of life vehicle regulations, not via the Resource Productivity and Recovery Authority (RPPRA) or through the RPPRA in a dedicated stream where automakers and storage pack manufacturers collect their own products at the end of their service life.

Conclusion

Tesla fully supports EV and large-scale battery recycling efforts, but we think they should be done in a way that makes sense for consumer and manufacturers. The proposed mechanism is inappropriate to manage EV traction batteries and energy storage battery packs with a weight equal to or greater than 75 kilograms. Tesla strongly urges the RPPRA to remove these battery types from scope. The regulation would require the collection and recycling of batteries that have not yet reached the end of their service life and is, therefore, not in the interest of consumers (increasing costs) or the environment (recycling products prematurely).

As a manufacturer of electric vehicles and energy storage products, Tesla can provide further input for the development of an effective regulatory framework on the collection and recovery of EV and large-scale battery materials. Tesla already reclaims batteries from its vehicles and is conducting research and development efforts to further improve the recycling process to recover a greater percentage of battery materials.

Tesla looks forward to the opportunity to draw on its global experience in the battery industry to provide guidance and advice to Ontario regarding the management of end of life EV and energy storage batteries. If you have any questions regarding this submission, please do not hesitate to contact me at imyrans@tesla.com.

Yours sincerely,

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