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Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

Sub-Committee of Experts on the Transport of Dangerous Goods **29 November 2023**

Sixty-third session
Geneva, 27 November-6 December 2023
Item 4 (c) of the provisional agenda
Electric storage systems:
Transport provisions

Reuse, repair and re-purposing lithium ion cells and batteries and implications on safety and UN 38.3 testing requirements

Submitted by the Advanced Rechargeable & Lithium Batteries Association (RECHARCHE) and The Rechargeable Battery Association (PRBA)

I. Introduction

1. PRBA and RECHARGE have previously presented information on how governments and non-governmental organizations (NGOs) are promoting concepts associated with a "circular economy" and how lithium ion cells and batteries are often identified as products that should be "reused" (i.e., remanufactured or repaired) and "repurposed" before being shipped for final disposal and recycling at end-of-life. Our previously introduced Informal Documents on this matter identified how reusing, repairing or repurposing lithium ion cells and batteries may have implications on the applicable technical, regulatory, and safety requirements found in the UN38.3 lithium battery tests and *Model Regulations* that are associated with the safe transport of these dangerous goods.

2. Our Informal Documents also provided information on the differences between "reuse", "repair" and "repurposing" and the similar terms used to describe them and how they are defined in different battery standards and regulations. We therefore intend to propose in a Working Document for the sixty-fourth session of the Sub-Committee definitions for "repurposing" and "remanufacturing" for inclusion in section 38.3.2.3 of the *UN Manual of Tests and Criteria*.

3. We also believe it is important to highlight the unique nature of repurposed and remanufactured lithium ion batteries immediately after Section 38.3.2.1, which defines the "Scope" of the lithium battery tests. A new sentence will therefore be proposed at the sixty-fourth session identifying the need to consider how a repurposed or remanufactured rechargeable battery may differ from a tested type and will refer to a new paragraph (g) found at section 38.3.2.2 that further clarifies the issue.

4. The most significant proposed amendment will be a new paragraph (g) in section 38.3.2.2 to help clarify the type of "repurposing" and "remanufacturing" change that might be considered to differ from a tested type, and thus requiring retesting to the UN38.3 requirements.

5. For the benefit of the Sub-Committee members, we have included on page 2 all three proposed amendments to the UN38.3 lithium battery tests we intend to propose in a Working Document for the sixty-fourth session of the Sub-Committee. We welcome comments today on these proposed amendments.

- Add the following sentence at the end of the "Scope" paragraph found at 38.3.2.1:

A repurposed or remanufactured rechargeable battery that differs from a tested type shall be subjected to tests T.1 to T.5 and T.7, as applicable. (See 38.3.2.2(g).)

- Add a new paragraph (g) under the NOTE found at 38.3.2.2:

***NOTE**: The type of change that might be considered to differ from a tested type, such that it might lead to failure of any of the test results, may include, but is not limited to:*

(a) ....

(b) ....

(c) ...

(d) ...

(e) ...

(f) ...

(g) *A design change resulting from repurposing, remanufacturing or repairing of a battery. **Note**: A repair operation, according to a process authorized by the original battery manufacturer, in the sense of restoring a battery equivalent to the tested type by replacement of defective parts with original spare parts or parts of equal specification and quality, shall not be considered to differ from a tested type.*

- Add the following two definitions in 38.3.2.3:

Repurposing means any operation that results in a battery, or parts thereof, being used for a purpose or application other than that for which the battery was originally designed. Other terms used to describe repurposing include “secondary use” and “second life.”

Remanufacturing means an operation by which components of a battery are disassembled and evaluated for reuse and placed back on the market for the same purpose or application as the one for which the battery was originally designed. Other terms used to describe remanufacturing include “refurbishing” and “reuse.”