Submission to draft battery standard DR AS/NZS 5139:2017

(Electrical installations—Safety of battery systems for use with power conversion equipment (Revision of AS 4086.2—1997)

Clause *3.2.2*

Table *3.1*

Comment type *Technical*

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Hazard classification by battery type

The classification of all lithium-based batteries at the same fire hazard level belies the significant differences between different chemistries. Considerable research indicates, for example, that $LiFePO_4$ and $LiMn_2O_4$ batteries are orders of magnitude less susceptible to thermal runaway than other Lithium-based batteries. (See for example Roth EP, "Abuse Tolerance Improvement," DOE Vehicle Technologies Peer Review, Gaithersburg, MD, February 26, 2008.) It also fails to account for design elements of battery energy storage systems that mitigate against fire hazards. Because of this, the draft standard as it stands unnecessarily adds cost and complexity to domestic use of modern lithium-based battery technologies, imposing costs to consumers and the home battery industry far in excess of any benefits.

ATA recommends that Standards Australia:

1. ***Revisit classification of lithium-based batteries with regard to fire hazard based on the actual performance of the various lithium-based chemistries.***
2. ***Account for safety features in BESS design by reclassifying lithium-based batteries that comply with international standard IEC 62619 (or IEC 63056 when published) to Fire Hazard 2.***

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