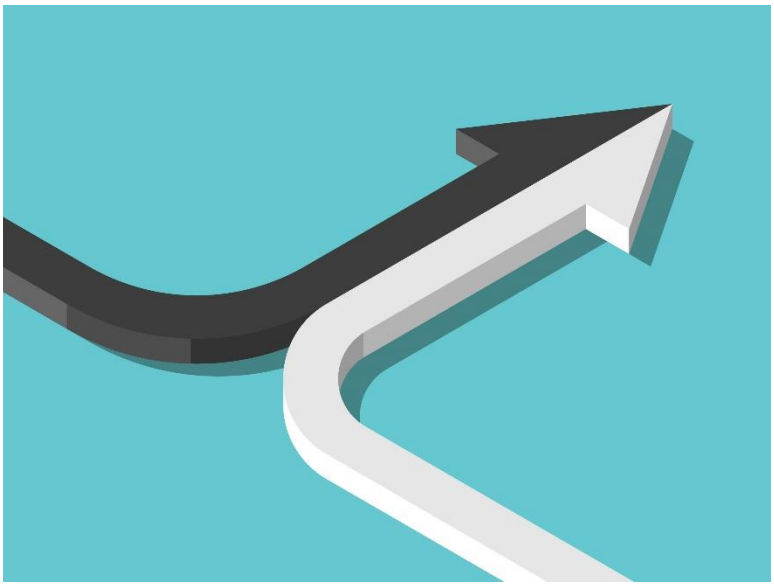

Proposal – ABIA Lithium-ion Battery Endorsement Symbol

DISCUSSION PAPER
FOR LITHIUM-ION PHOSPHATE BATTERIES IN 6V, 12V, 24V 36V AND 48V CAPACITY (EXCLUDING EV AND ELECTRICITY ENERGY STORAGE)

May 2022

-ABIA+
AUSTRALIAN BATTERY INDUSTRY ASSOCIATION

PROPOSED LITHIUM ION BATTERY ENDORSEMENT SYMBOL

This discussion paper is to seek Australian Battery Industry Association (ABIA) member and stakeholder feedback on draft guidelines for an ABIA endorsement symbol for lithium-ion batteries used in the automotive, recreational, marine and industrial sectors. *The framework excludes energy storage and electric vehicle batteries.*

The ABIA, in collaboration with the Australian Battery Recycling Initiative (ABRI), is developing an endorsement symbol. This would be granted based on a range of information to support customers understanding of lithium ion battery safety, quality and a circular economy.

The need for information on lithium-ion battery quality and safety is increasingly important as these batteries become a key energy source for households and businesses. In the last 10 years, the cordless power tools market share has moved to around 65% of the market from under 25%. This together with all lithium-ion battery products is reflected in increased calls to fire agencies where batteries are the cause of a fire.

As a first step, the ABIA Board is proposing that the endorsement symbol or 'tick' will demonstrate that a lithium battery product range has undertaken safety and product performance tests and is participating in a product stewardship scheme.

The draft framework is set out in detail on pages 5-9. The framework is a starting point for discussion and refinement. The ABIA is seeking feedback on the overarching framework:

- How this could help improve product quality and safety
- How this information could assist customers make informed choices
- The feasibility of the approach

The ABIA Board also seeking feedback on these specific areas which seek to balance integrity of the symbol with cost:

- Capacity testing – the framework proposes this is undertaken by an independent testing service to maintain integrity of the endorsement symbol. However, this will add cost to the process.
- Life cycle testing – the framework proposes this is supplied by the battery manufacturer. However, there are potential concerns that this might not be independent. The need to resubmit an endorsement application where a battery product uses a different cell type and/or battery manufacturer.
- Whether there are sufficient testing facilities in Australia to meet the testing requirements

PROPOSED OBJECTIVES

In developing the guidelines, ABIA has sought to achieve a balance between delivering these objectives:

- Simplicity where existing processes are used if available thereby also minimizing cost
- Transparency by making all information publicly available which underpins a product using the ABIA endorsement symbol
- Integrity through independent and approved testing facilities

Which lithium batteries are covered by the guidelines?

The ABIA endorsement symbol will be for lithium-ion phosphate batteries in 6V, 12V, 24V 36V and 48V capacity for end use in automotive, industrial, and recreational activities. (Solar energy storage out of scope). These batteries will have an energy storage capacity greater than 100Wh. This range of batteries is consistent with ABIA's remit. The symbol will need to be clear that it reflects a product range.

Battery energy storage systems are outside the scope of this project and can be approved under the Clean Energy Council's Battery Assurance Program. Under this process, the batteries are independently tested to confirm that they meet the necessary safety and quality standards.

Industry and stakeholder feedback to improve guidelines

ABIA is seeking industry and stakeholder feedback on whether the approach in the draft guidelines (Attachment A, pp.5-9) delivers the above objectives or could be improved. The endorsement symbol will be generic for a product category and not an individual battery. Each battery's performance is unique and will depend on the operating environment, climate conditions and other factors.

The ABIA is also seeking industry input into the following proposed design elements:

Life cycle testing – challenge of cost and timeliness

Life cycle testing provides an indication of product performance although will not confirm the performance of an individual battery. This type of test can be expensive and take a long time to perform. Under the test the number of cycles, discharge and recharge, is counted to see how long it remains at full capacity.

The draft guidelines include a requirement to provide life cycle test results as ABIA considers that this information provides customers with an understanding of a product's durability. The guidelines proposes that the battery manufacturer provide these test results. This approach reduces costs, uses existing processes and minimises timeframes to

obtain test results. However, it might be considered to compromise the integrity of the ABIA endorsement symbol as the test would not be from an independent provider. ABIA would welcome feedback from stakeholders as to whether alternative approaches could be used to provide customers with confidence in the product they are purchasing but is practical to obtain.

Capacity test

While battery distributors, wholesalers and retailers may have their own equipment to undertake capacity tests, ABIA is proposing the capacity test be undertaken independently to support the integrity of the ABIA endorsement symbol. ABIA would be interested to hear from stakeholders whether this will improve integrity and whether there is sufficient independent testing capability in Australia.

Resubmit for change of cell type or battery manufacturer

The draft guidelines propose that a new application for the ABIA endorsement symbol must be submitted each time the cell type or the battery manufacturer changes. This will maintain the currency of the symbol and provide customers with information on the performance of the product they are purchasing. ABIA would be interested to hear from stakeholders whether this is appropriate threshold for requiring a new endorsement application to be submitted.

Communication strategy

ABIA proposes to raise awareness about battery testing standards via social media channels and in conjunction with member communication channels. ABIA would like member and stakeholder feedback on what the most effective channels of communication would be to raise customer awareness about battery safety and product quality.

Best practice use of the endorsement symbol

To support best practice use of the endorsement symbol, ABIA could register the symbol as a trademark. This would require a user to agree to the terms and conditions of use of the mark, including agreeing not to misrepresent, misuse or abuse the mark. ABIA is interested in stakeholder views as to what the most cost-effective option is for supporting correct use of the symbol.

Endorsement versus certification

The ABIA endorsement symbol would be based on evidence to demonstrate the value of a lithium-ion battery but would be no indication of an individual battery's capabilities. Battery performance is highly variable depending on temperature, application, care and maintenance, and the product in which the battery is used.

This is different from certification, which indicates to the consumer that a battery would meet a particular standard.

Making a Submission

ABIA members and stakeholders can send a written submission to the ABIA via email: secretariat@abia.org.au. Submissions must be made by 10 June 2022.

To inform finalisation of an ABIA policy position on whether or not to implement a lithium-ion battery endorsement symbol, submissions may be shared with the ABIA Lithium-ion Working Group and the ABIA Board, and may be made public. The ABIA Lithium-ion Working Group is chaired by Ryan Hammond, Sealed Performance Batteries (SPB) and consists of:

- ABIA members - Battery House, Club Assist, R&J and Ramcar
- ABRI representatives and members – ABRI CEO and Envirostream
- Observer – Battery Stewardship Council

If you would like to discuss feedback directly with the ABIA please email the ABIA Secretariat at secretariat@abia.org.au.

ATTACHMENT A

DRAFT – GUIDELINES FOR ABIA LITHIUM-ION BATTERY ENDORSEMENT

CONTEXT

This guide is to support delivery of the Australian Battery Industry Association's (ABIA) objectives to drive lithium-ion battery product quality standards and safety, and a battery circular economy.

This guideline seeks to develop an evidence base for consumers on battery product quality and safety from existing industry standards and test procedures. By requiring membership of the B-cycle scheme it also supports responsible end of life management for batteries.

Lithium-ion battery quality and safety is becoming increasingly important as these batteries become the main energy source for households and businesses. In the last 10 years, cordless power tools market share has moved to around 65% of the market from under 25%. This together with all lithium-ion battery products is reflected in increased calls to fire agencies where batteries are the cause of a fire.

The ABIA views the development of an endorsement symbol will support consumers make more informed choices and contribute to a safer battery industry.

The ABIA endorsement symbol would be based on evidence to demonstrate the value of a lithium-ion battery but would be no indication of an individual battery's capability. Battery performance is highly variable depending on temperature, application and the quality of the product in which the battery is used. The symbol would need to be clear that this is for a product range.

Endorsement is different from certification. The latter indicates to the consumer that a battery would meet a particular standard.

WHICH LITHIUM-ION BATTERIES WILL BE COVERED?

The ABIA endorsement symbol will be for lithium-ion phosphate batteries in 6V, 12V, 24V 36V and 48V capacity for end use in automotive, industrial, and recreational activities. (Solar energy storage out of scope). These batteries will have an energy storage capacity greater than 100Wh. This range of batteries is consistent with ABIA's remit.

THE ABIA ENDORSEMENT SYMBOL

A lithium-ion battery product applying for the ABIA endorsement symbol confirms that the battery product has:

1. Met technical and safety standards as set by the International Electrochemical Commission (IEC) through completion of an IEC certification process
2. Met United Nations standards for safe transport by undertaking UN38.3 certification
3. Publicly available capacity testing results
4. Publicly available life cycle information test results
5. Publicly available safety data sheets
6. The product importer or manufacturer is contributing towards recycling costs for batteries at end-of-life under B-cycle, Australia's battery stewardship scheme, through membership of BSC
7. ABIA membership

The ABIA endorsement symbol will be given to products supplying the required paperwork. ABIA will not be undertaking a separate independent audit or verification process to confirm the test results.

TESTING REQUIREMENTS

Batteries will be required to demonstrate certification against safety and transport standards as well as undertake performance tests.

Safety tests

The International Electrochemical Commission has two tests which are used widely, and often mandated, across the globe for setting technical and safety requirements for lithium-ion battery cells. One of the following tests must be obtained. The test will depend on the product type that the battery is used for.

- *Batteries used in portable applications* – IEC62133.2 – Secondary cells and batteries containing Alkaline or other non-acid electrolytes – safety requirements for portable sealed secondary cells and batteries made for them.

- *Batteries used in industrial applications* – IEC62619 – Secondary cells and batteries containing Alkaline or other non-acid electrolytes – safety requirements for secondary lithium cells and batteries for use in industrial applications, such as

    - Stationary applications: telecom, uninterruptible power supplies (UPS), electrical energy storage systems, utility switching, emergency power, and similar applications.

    - Motive applications: forklift truck, golf cart, auto guided vehicle (AGV), railway, and marine, excluding road vehicles.

All test certificates must be supplied from an approved IEC test house.

Transport safety test

Lithium-ion batteries are often required to undertake UN38.3 certification for transport and in many cases, it is mandatory, especially for air transport. This test puts a number of stresses on a battery to support a minimum safety level.

All test certificates must be supplied by an approved UN38.3 test house.

Product performance

There are two tests which support a customer understand battery product quality and capability and whether this matches what's on the label. There are many variables which influence a battery's performance, such as the external temperature conditions in which the battery operates, care and maintenance, frequency of use, and the purpose for which it's being used. Therefore, the individual battery purchased may not have the same results as the one tested. However, the test results will provide a good indication of whether the claims on the label can be met.

Capacity testing

This test checks the amount of energy a battery can store, that is its capacity. It must be carried out at the level of amps as stated on the battery product, undertaken by an independent tester and can be undertaken with one of the following testing products:

- Astratec
- West Mountain Radio Computerised Battery Analyser (CBA)

Life cycle testing

This test considers how many cycles (fully charged and discharged) take place before a battery falls below a certain range. Testing how many cycles a battery can perform is important for understanding how long a battery will last. Factories supplying batteries will have these test results and these must be provided with the application.

SAFETY DATA SHEETS

Safe Work Australia's factsheet[1] on Safety Data Sheets notes they are documents that provide detailed information about a hazardous chemical and/or product, including:

- the identity of the chemical product and its ingredients

[1] https://www.safeworkaustralia.gov.au/resources-and-publications/guidance-materials/understanding-safety-data-sheets-hazardous-chemicals

- the hazards of the chemical including health hazards, physical hazards and environmental hazards
- physical properties of the chemical, like boiling point, flash point and incompatibilities with other chemicals
- workplace exposure standards for airborne contaminants
- safe handling and storage procedures for the chemical
- what to do in the event of an emergency or spill
- first aid information
- transport information

The Safety Data Sheet is important for understanding how a battery can be stored, handled and used safely. The space for labelling on batteries is small and the Safety Data Sheet provides more information about how to handle the battery than can appear on a label.

APPLYING FOR THE ABIA ENDORSEMENT SYMBOL

The proposed process for applying for an ABIA endorsement symbol is as follows:

- Complete the application form. Applicants will be required to confirm that the information submitted is correct, tests have been provided by an independent testing facility, where required, and that if the applicant is successful, then all testing results and other information can be published on the ABIA website.
- Submit application form and required paperwork including test results and Safety Data Sheet to ABIA for review.
- ABIA endorsement panel, consisting of at least one ABIA Board member, reviews application to check: all required information and paperwork has been submitted; and where applicable, tests meet any required standards. The check is not an independent review of the testing results and there will be no independent audit of the information submitted.
- ABIA notifies applicant as to status of application. This may include a request for further information.
- If successful, ABIA will publish a list of products on its website together with the test results. Applicants are responsible for all product quality claims and requirements for marketing to be consistent with Australian law.