Ka tō he rā, ka rere he rā

The road to a circular system for large batteries

Dominic Salmon, Business Development
3R Group Ltd

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The Battery Industry Group

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27–30 MAY 2024

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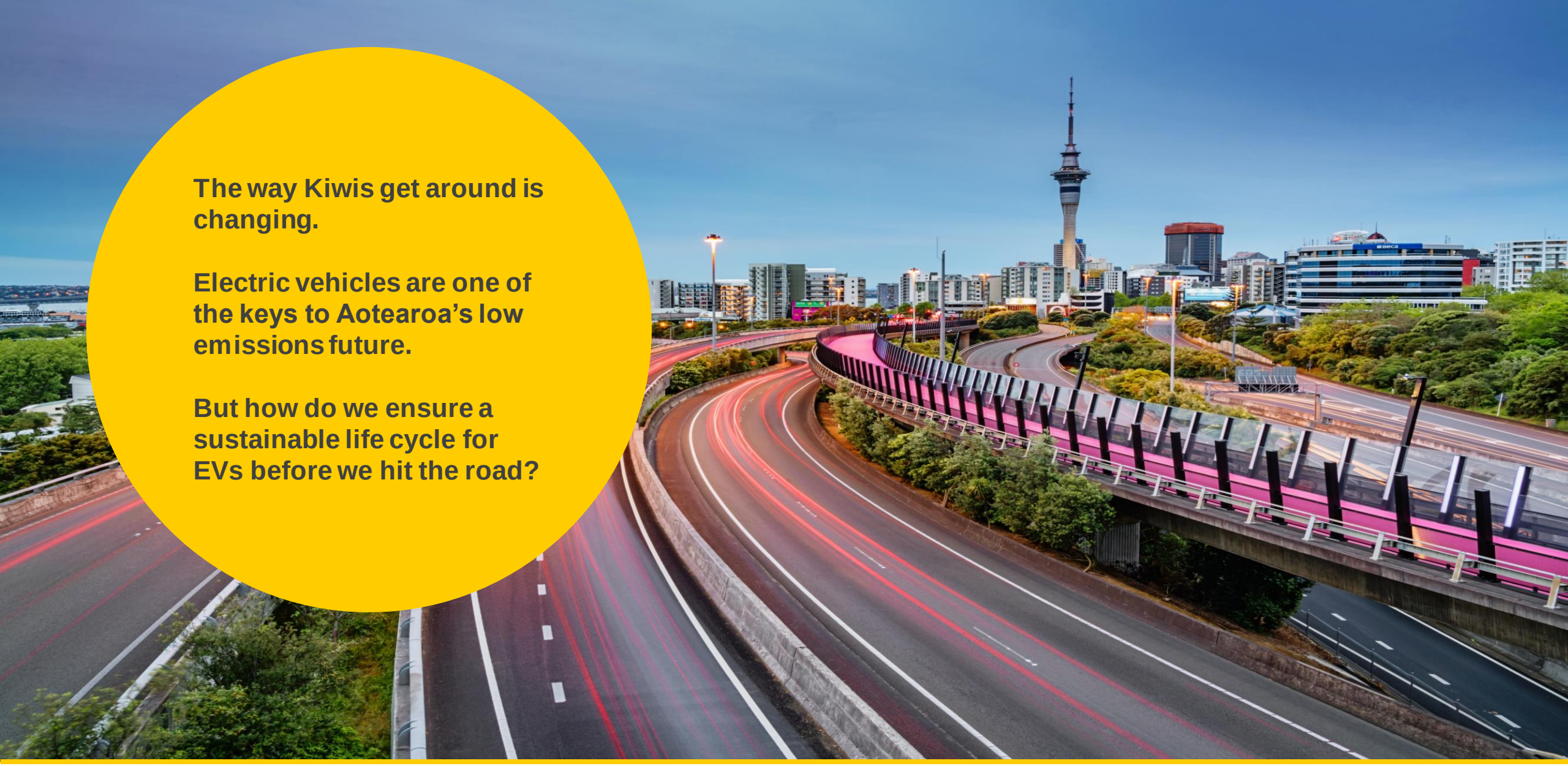

The way Kiwis get around is changing.

Electric vehicles are one of the keys to Aotearoa's low emissions future.

But how do we ensure a sustainable life cycle for EVs before we hit the road?

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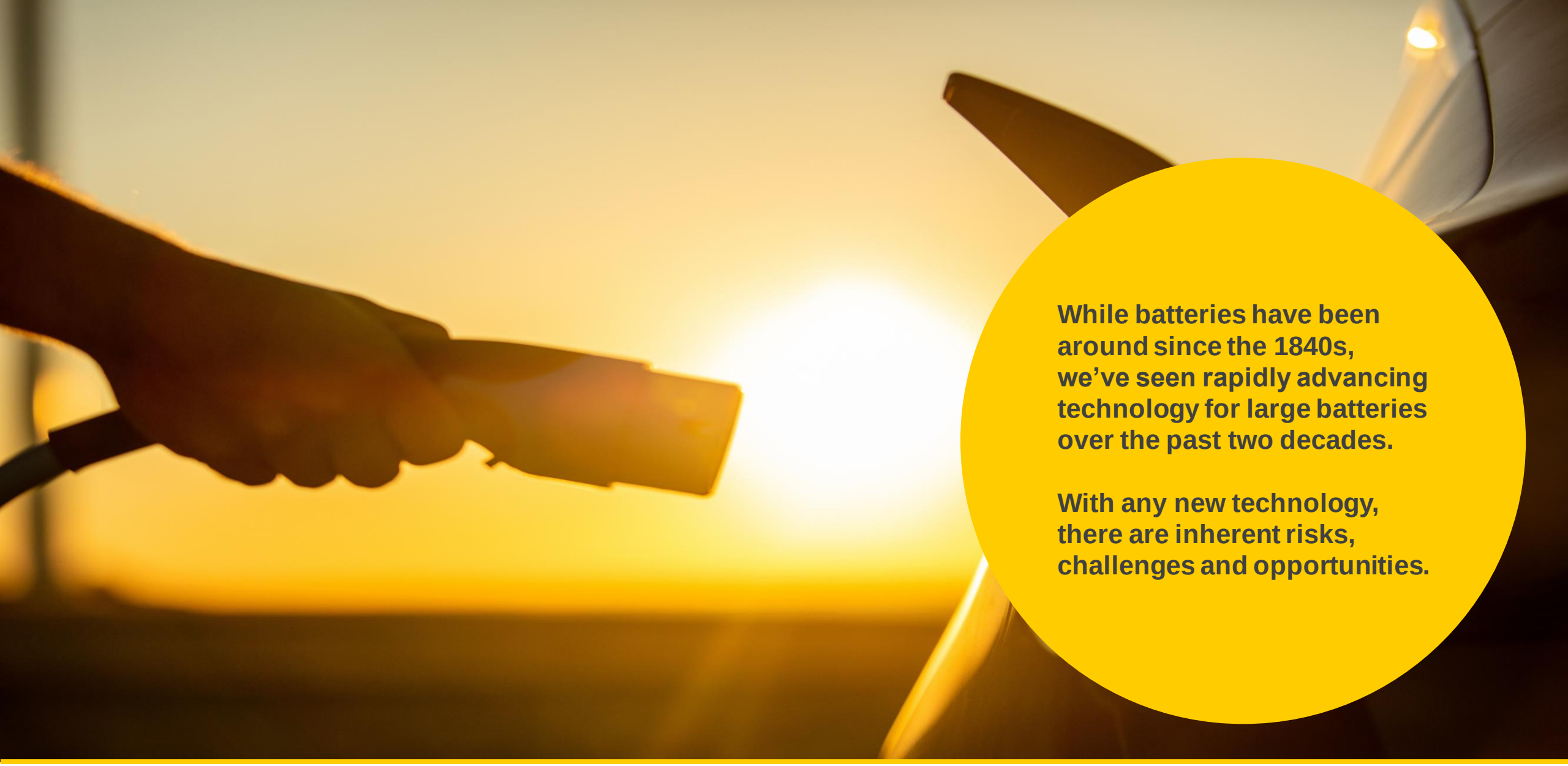
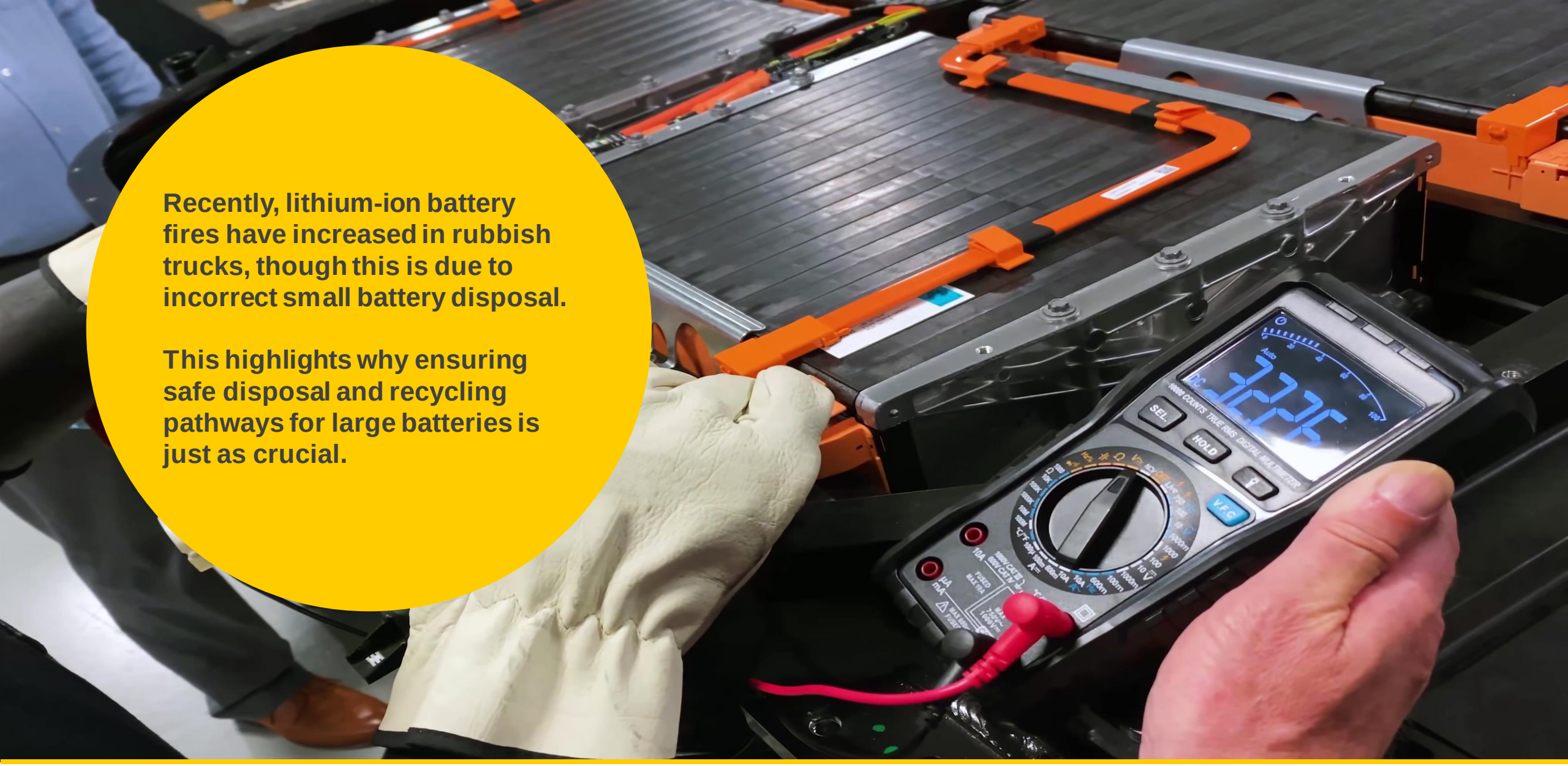


While batteries have been around since the 1840s, we've seen rapidly advancing technology for large batteries over the past two decades.

With any new technology, there are inherent risks, challenges and opportunities.



Recently, lithium-ion battery fires have increased in rubbish trucks, though this is due to incorrect small battery disposal.

This highlights why ensuring safe disposal and recycling pathways for large batteries is just as crucial.

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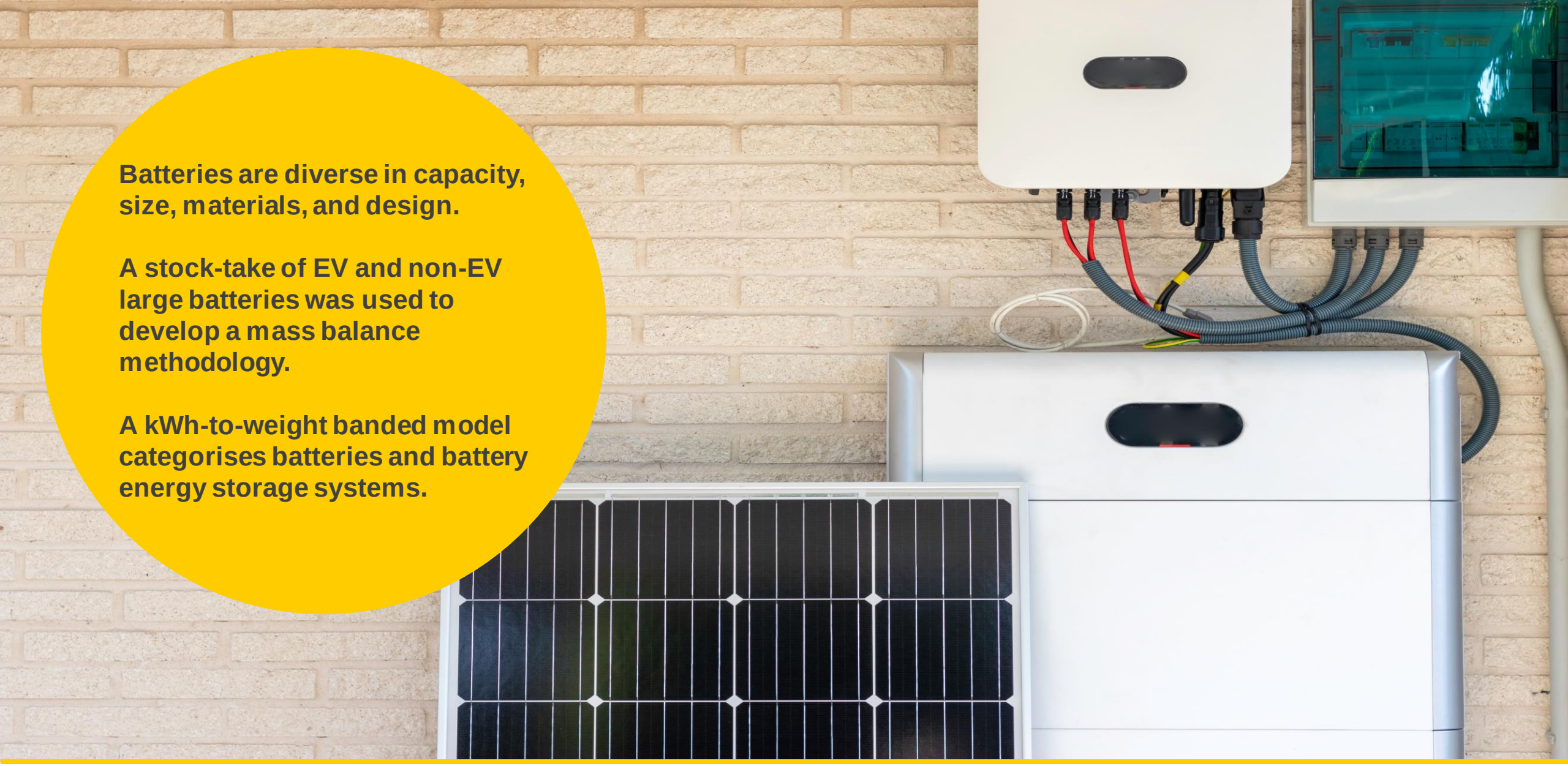
It’s not often the resource recovery sector gets the opportunity to design a solution *before* something becomes a problem.

But creating a circular system for large batteries now means we can do just that.

The Battery Industry Group was established to address global fears of dangerous mountains of end-of-life batteries, stockpiled and in landfills.

Large batteries need to be effectively and safely managed throughout their lifecycle to maximise resource use.



Batteries are diverse in capacity, size, materials, and design.

A stock-take of EV and non-EV large batteries was used to develop a mass balance methodology.

A kWh-to-weight banded model categorises batteries and battery energy storage systems.

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We're also a tiny nation at the bottom of the world, so working with international suppliers can be tricky.

Thankfully, the Global Battery Alliance is developing a passport for large batteries. This will create a trackable framework for transboundary movements and is key to our success locally.

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The battery industry is recognising the value of embedded materials in existing batteries, over use of virgin materials in new batteries.

However, there are logistical challenges in shipping these materials offshore, to where there is demand.

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In pursuing a circular solution, we must prioritise reuse, before we ship the materials offshore.

While a battery's capacity and performance may no longer be suitable for propulsion, the battery will retain a significant energy storage capacity - which makes them viable for renewable energy storage capacity.

Things are developing quickly – the chemistry and design of large batteries is constantly changing, e.g. blade technology vs cell technology.

All of this means we, as a nation, must move quickly to make the most of these opportunities.

It's vital we collaborate across industry, government, NGOs, and our communities, to capitalise on the opportunities offered by large batteries, as a high value resource.

But any progress relies on everyone playing their part to ensure a consistent supply and solution.

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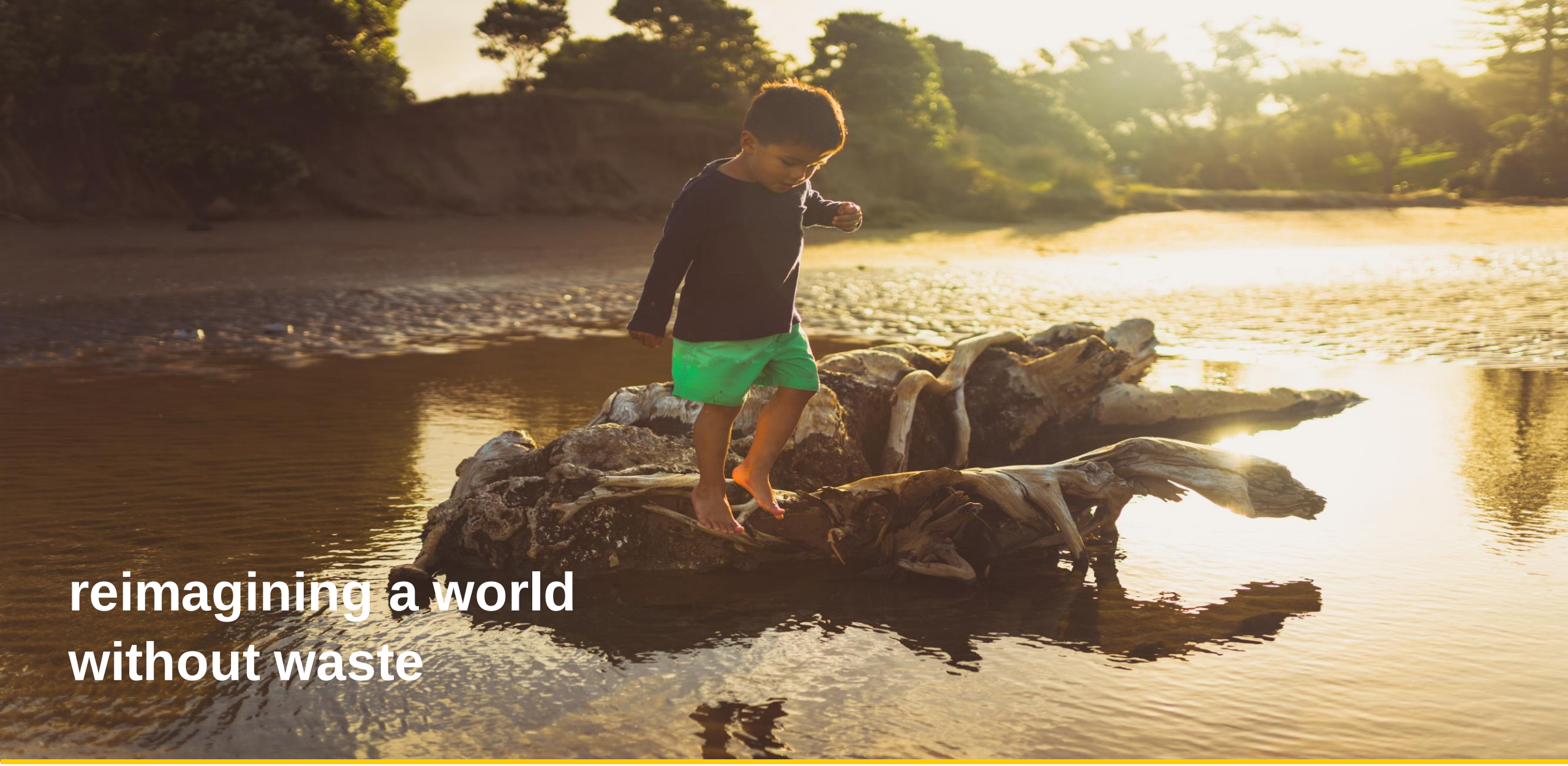
With that in mind, The Battery Industry Group has applied for accreditation for a regulated product stewardship scheme.

A regulated scheme will enable nationwide innovation and collaboration, ensuring large batteries become a valuable resource in our circular economy.



reimagining a world without waste

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