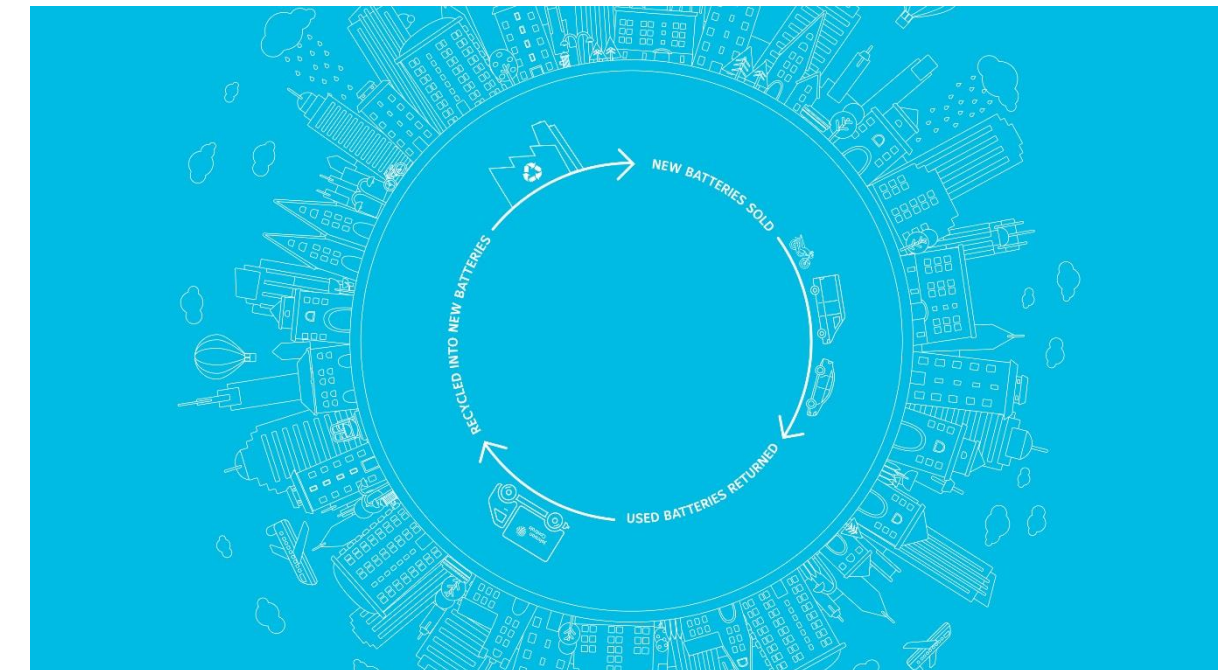


LITHIUM-ION BATTERY RECYCLING PRIZE



A Public Document



Team Name:	Powering the Future
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City and State:	Glendale, Wisconsin
Member Names (including partners and affiliates):	<ul style="list-style-type: none"> • Clarios: Trish Haudricourt, Scott Morehouse, Adam Muellerweiss, Craig Rigby, Perry Wyatt • Potential recycling technology providers such as Battery Resourcers • RBC and GBA are part of Clarios' network that we would engage if we proceed.
Submission Title:	"Banking today's materials to power tomorrow's future"
Submission Track:	Track #1 Collection (Focusing on Transportation Sector)

Concept

- Our concept is for transportation sector.
- Build on Clarios' existing auto battery collection network, without reinventing the wheel, our solution will offer a complete closed loop.
- Will develop technologies to sort at the lead acid battery collection recycling centers and/or newly identified stock-pile locations.
- As stated above, will build secure location(s) to stock-pile lithium-ion automotive batteries, in order to build large enough, economically viable volume.
- Will develop retrieval, extraction technologies that can be applied to different chemistries to feed the critical materials back to produce new batteries.

Approach

- First we will build on the existing automotive battery collection network and our logistics expertise to collect all EOL lithium-ion batteries, thus creating a social system. No need to reinvent the wheel.
- By doing so, we will give new recycling technologies time to mature, during which we will establish private-public partnerships. Areas in which technologies should be primed are sorting, extracting, and recycling to remanufacture.
- With the government agencies, will build secure locations to stock-pile EOL li-ion batteries where sorting, recycling and extracting technologies are applied to capture the critical materials and feed them back into the production cycle.
- This approach supports that when selling to auto OEMs, Clarios is in the best position to guarantee that EOL batteries will be handled properly, thus freeing OEMs from future regulatory EOL battery management requirements.

Potential Impact

- By leveraging existing network of collection and by addressing transportation cost (~40% of recycling cost) will enable industry participants to focus and mature technologies to sort, separate and extract.
- Identify stock-pile locations alongside the existing collection network by fostering private-public partnership opportunities. This is to enable a large scale aggregation to make efficient and effective lithium recycling.
- By using the existing network, we give time to technologies to mature. Will enable scaling-up, thereby reduce the cost of recovery and reuse.
- Protecting and securing the critical minerals and materials in the closed loop. Increase supply chain security of critical materials by manufacturing lithium-ion batteries within the closed loop.