



Beyond Battery Recycling: Sustainable, Engineered Battery Materials

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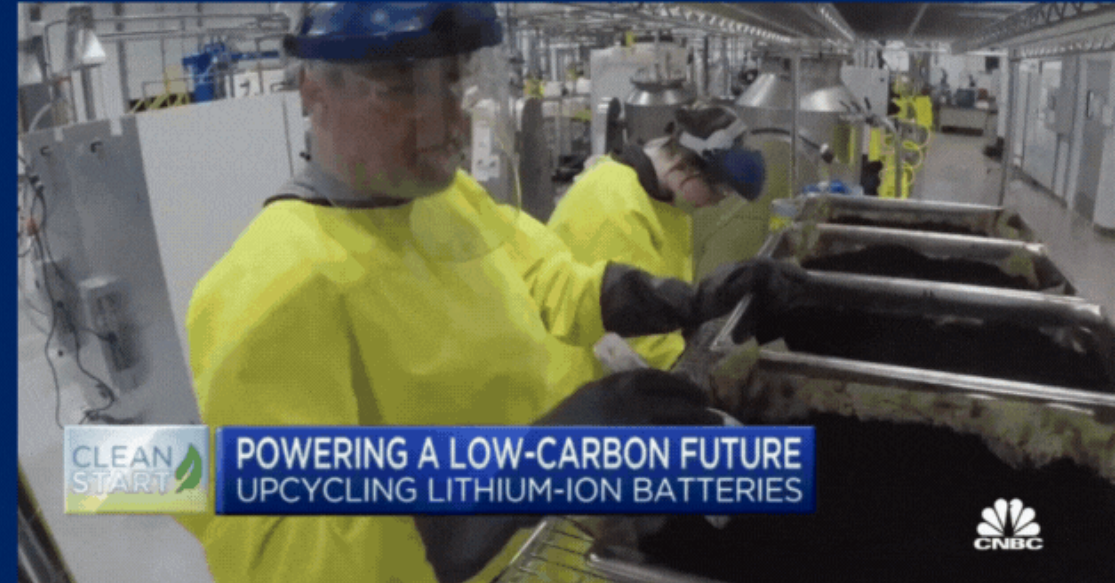


Sustainable Engineered Battery Materials



BATTERY RECYCLING

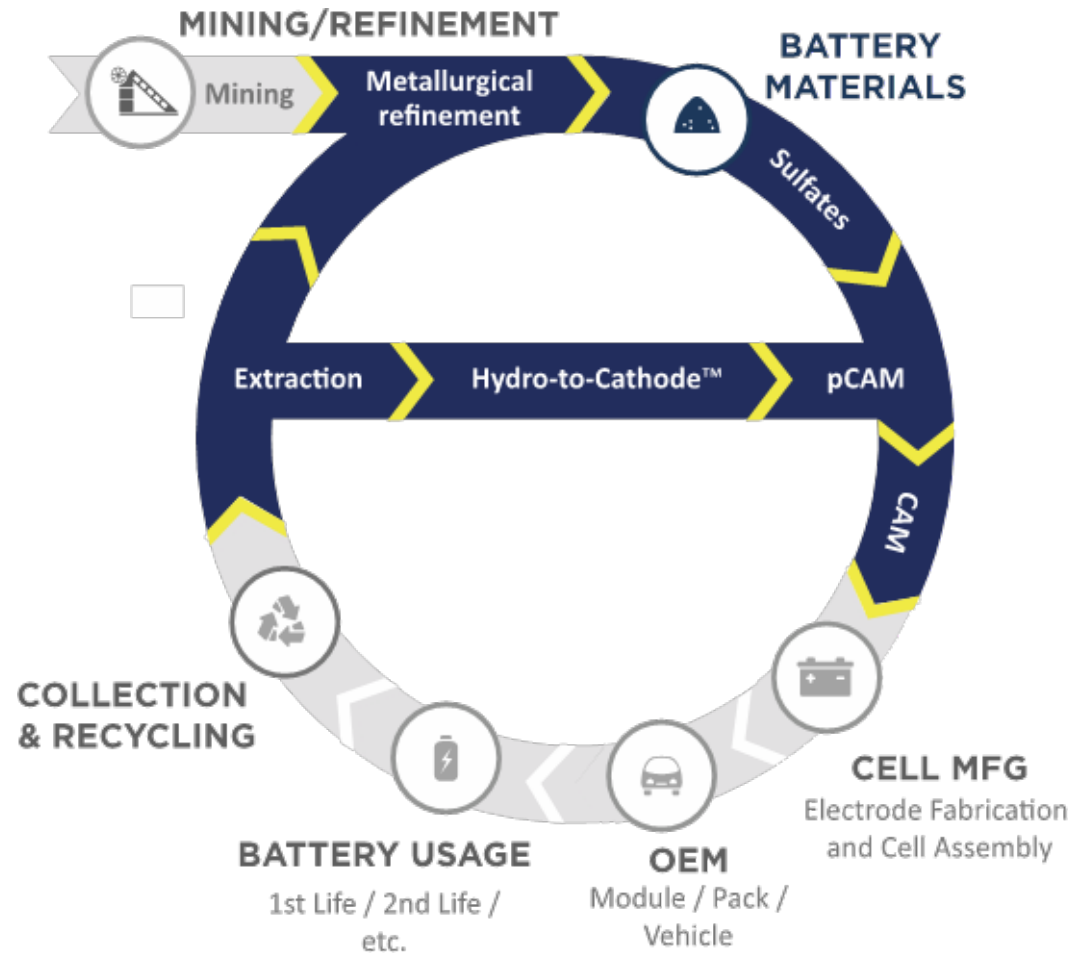
End-of-life lithium-ion batteries
and manufacturing scrap



ENGINEERED MATERIALS

Sustainable, high-performance
cathode active material

Closed-loop Battery Materials Ecosystem



**Recycled
Metal Salts**
(Li, Ni, Co)



**Sustainable
High-Nickel
pCAM and
CAM**

Corporate Milestones

2012



First Patents Filed

2016



Founded as Battery Resources

2022



Name Change to Ascend Elements

2022



Base 1: North America's Largest Li-ion Battery Recycling Facility

2022



Apex 1: One-of-kind Sustainable Cathode Manufacturing Plant

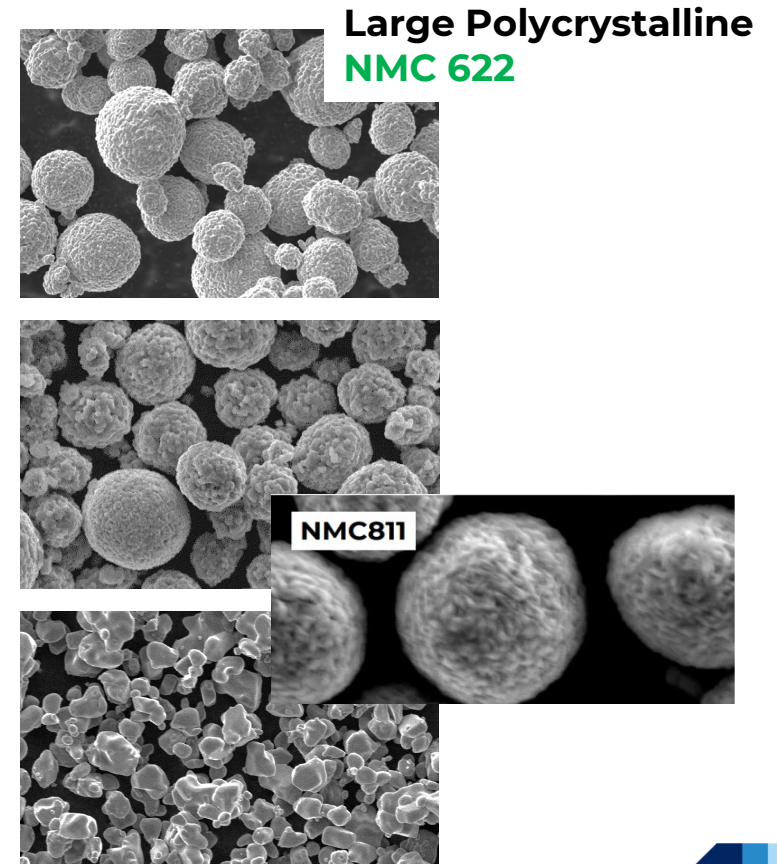
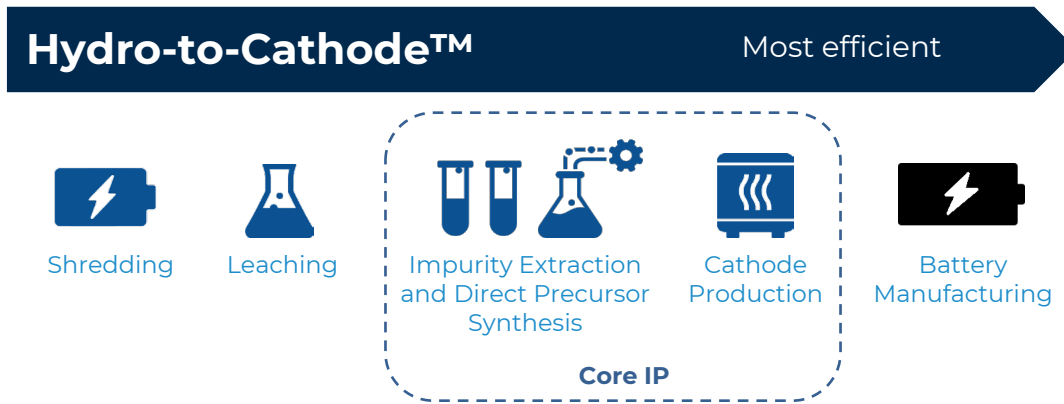


DOE Grants = \$480 Million



\$300 Million Funding Round

Hydro-to-Cathode™ direct precursor synthesis

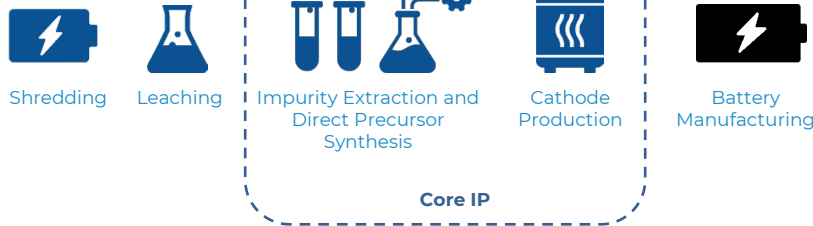


“The most **efficient** and **economical** way to return used Li-ion battery materials to the supply chain.”

Purpose-Built Li-ion Battery Recycling Technology

Hydro-to-Cathode™

Most efficient



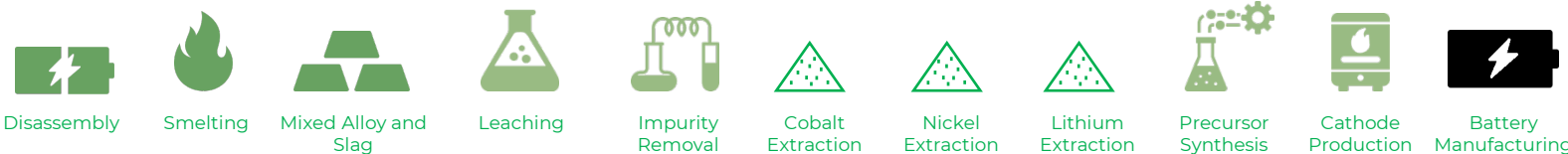
- Input material agnostic
- Efficient
- Economical
- Cleaner than traditional processes

Traditional Hydrometallurgy



Traditional Pyrometallurgy

Least efficient



57 patents
granted or
pending

Closing the supply chain loop for battery manufacturers and automotive OEMs

Commercial-Scale Operations

Open in 2022

Base 1 Facility (Covington, Georgia)

Shredding batteries and scrap into black mass and extracting lithium, nickel, and cobalt

Base 1 facility
\$50M investment
Intake capacity: **30,000 tonnes** per/yr.
150 high-quality jobs
Operational **2022**



Black mass and recycled metal salts

Open in 2024

Apex 1 Facility (Hopkinsville, Kentucky)

Transforming black mass into high value materials via Hydro-to-Cathode™ direct precursor synthesis

Material for **250,000** EVs per year

Apex 1 facility
Up to **\$1.5B** investment
Producing pCAM, CAM, and metal salts
Up to **400** high-quality jobs
Operational in **2024**



Sustainable NMC pCAM and CAM

2024 & Beyond: Expansion in North America and Europe

Thank
You!



ASCEND
ELEMENTS