



LEADING A REVOLUTION

IN CLEAN METALS & BATTERY RECYCLING

NASDAQ: AQMS

March 2024

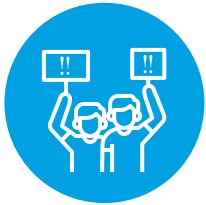


Disclaimer

This presentation contains forward-looking statements concerning Aqua Metals, Inc. Forward-looking statements include, but are not limited to, our plans, objectives, expectations and intentions and other statements that contain words such as "expects," "contemplates," "anticipates," "plans," "intends," "believes", "estimates", "potential" and variations of such words or similar expressions that convey the uncertainty of future events or outcomes, or that do not relate to historical matters. The forward-looking statements in this press release include our expectations for our pilot recycling plant, our ability to recycle lithium-ion batteries and the expected benefits of recycling lithium-ion batteries. Those forward-looking statements involve known and unknown risks, uncertainties, and other factors that could cause actual results to differ materially. Among those factors are: (1) the risk that we may not be able to acquire the funding necessary to develop our recently acquired five-acre campus; (2) the risk that we may not be able to develop the recycling facility on the five-acre campus within the expected time or at all; (3) even if we are able to develop the recycling facility, the risk that we may not realize the expected benefits; (4) the risk that licensees may refuse or be slow to adopt our AquaRefining process as an alternative in spite of the perceived benefits of AquaRefining; (5) the risk that we may not realize the expected economic benefits from any licenses we may enter into; and (6) those other risks disclosed in the section "Risk Factors" included in the company's Annual Reports of Form 10-K. Aqua Metals cautions readers not to place undue reliance on any forward-looking statements. The Company does not undertake and specifically disclaims any obligation to update or revise such statements to reflect new circumstances or unanticipated events as they occur, except as required by law.

Investor Highlights

PATENTED RECYCLING SOLUTION THAT HAS THE POTENTIAL TO DELIVER THE BEST ECONOMICS AND LOWEST ENVIRONMENTAL IMPACT



Surging demand

EVs, mobile devices, solar storage, everything uses batteries, and demand is rapidly growing.



Component deficit

Aqua Metals is building the necessary infrastructure to electrify the economy – and Asia is leading the race.



Environmental disaster

Legacy recycling methods are dirty, hazardous, and inefficient. Current lithium-ion recycling produces far more carbon pollution and landfill waste than valuable material recovered.

Innovative solution with operational pilot proving technology, and plans for commercial-scale campus

Massive and growing global addressable market

Greenfield opportunity for partnerships and strategic alliances

Strong IP protection:
73 global patents; 43 patents pending
Only electro-hydrometallurgy recycler in North America

Adaptable business models (build & operate, joint venture, license)

Only Li-Ion recycling method with pathway to net-zero operations

AquaRefining recovers all valuable materials, including Lithium Hydroxide and Manganese Dioxide, which are not recovered by competing methods

The World Is Powered By Batteries

Lead-Acid Batteries (LAB)



- Most of LABs are used in EVs/cars, forklifts, cranes, data centers and e-bikes
- LAB market is about \$65B globally
- 95%+ of LABs are recycled, but at massive environmental cost through smelting, one of the top polluting industries in the world
- Typical LAB contains 60 to 80 percent recycled lead and plastic
- LAB market expected to rise at 5.2% CAGR from 2021-2031 ¹



Lithium-ion Batteries (LiB)



- Energy storage, microgrids, electric vehicles, and mobile electronics driving use-cases
- Only 5% of LiBs are recycled globally, from an estimated 8M tons/yr waste stream
- 145M EVs predicted to be on the roads globally by 2030
- Typical 10-year LiB life span, with an est. 6.5M tons available for recycling 2025-2030
- Legacy recycling processes generate polluting emissions and chemical waste streams
- Legacy process can not recover lithium hydroxide
- Demand for LiB expected to grow from \$44B to \$94B by 2025 ²
- Global battery demand for lithium and nickel will be 12-13x of the current size, 2x of the current size for cobalt by 2040E ³

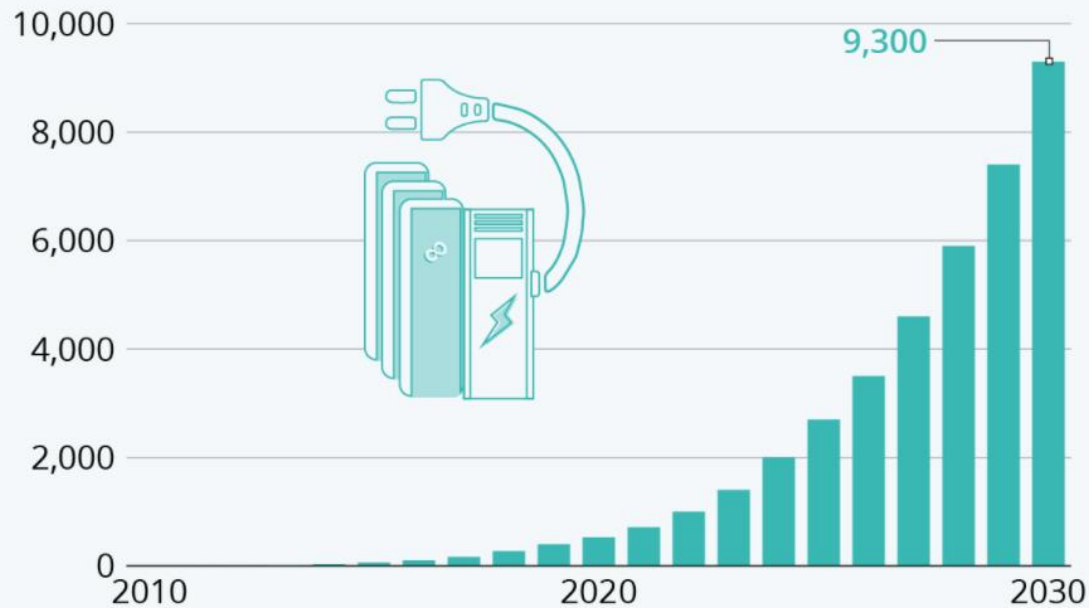


1 Future Market Insights; 2 CNBC, March 2022; 3 Goldman Sachs

Growing Market Demand

High Demand for Lithium-Ion Batteries

Cumulative lithium-ion battery demand for electric vehicle/energy storage applications (in GW hours)



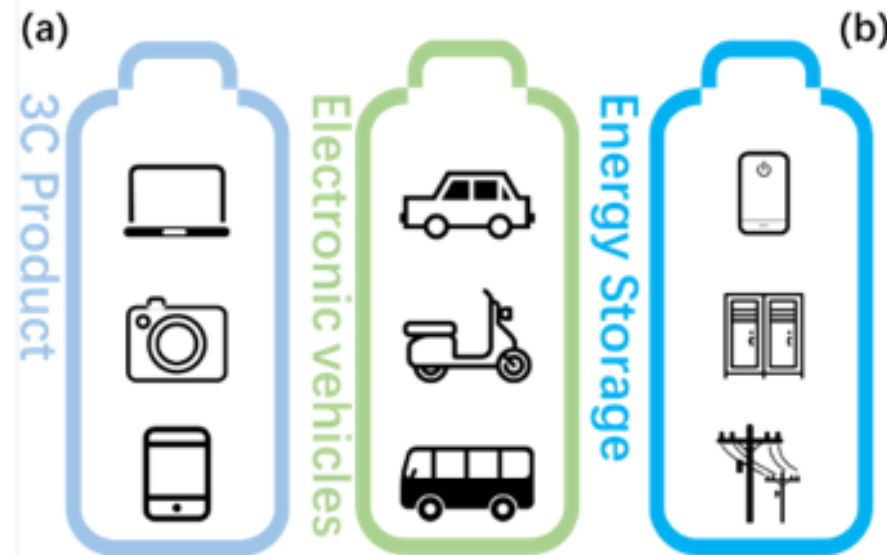
Source: Bloomberg



Stationary Batteries Critical to Clean Energy Adoption

Lithium-ion batteries are widespread throughout the electrified economy

Growing demand across industries fueling manufacturing boom

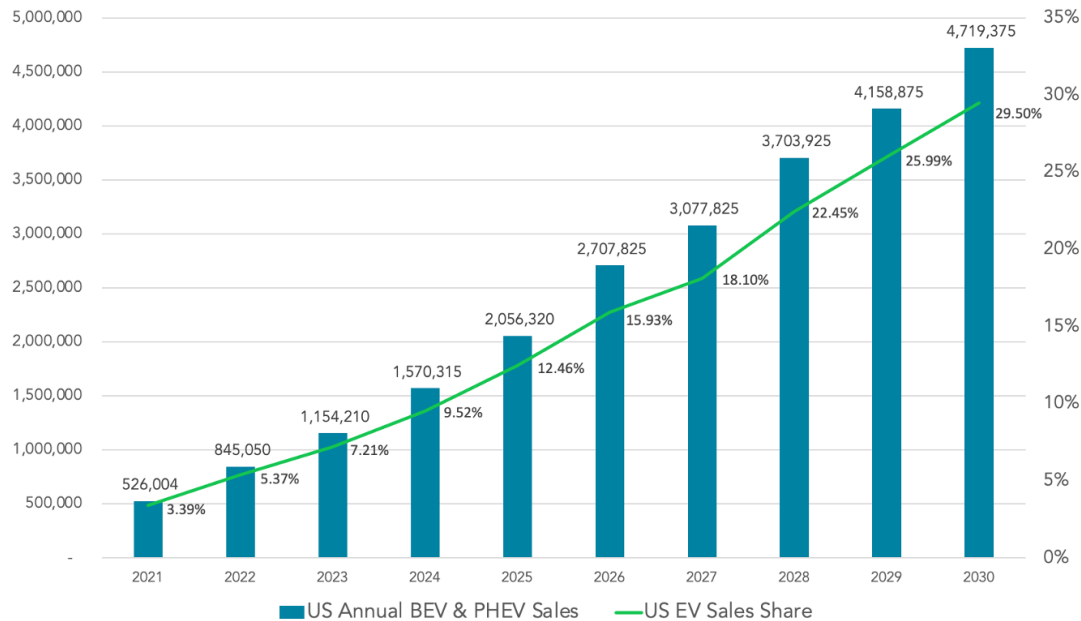


Growth Catalysts

- More than 1 million EVs sold in the US in 2023
- EVs made up 18% of all vehicle sales globally in 2023
- Average lithium battery size of over 40kwh
- Over 30 million EVs on the road globally

- US on pace to have 35gw of battery energy storage systems on the grid by 2025
- More than 20% of homes with solar now also have a battery
- More than 60% of solar sales now include a battery

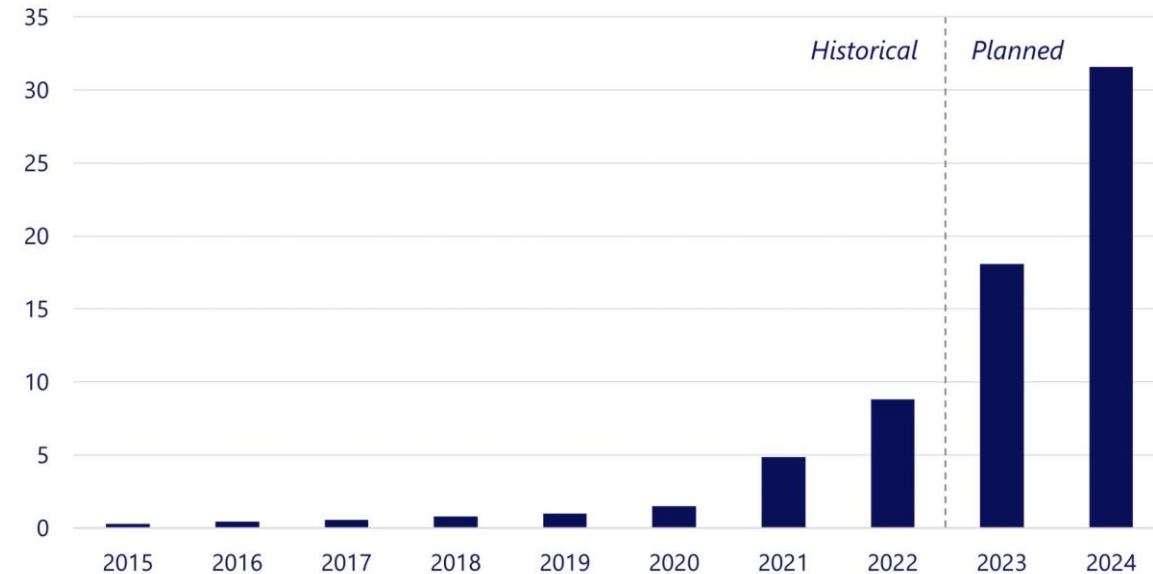
US EVs (BEV & PHEV) Sales & Sales Share Forecast: 2021-2030



Source: EV Adoption

Figure 5. Grid-Scale Battery Storage Cumulative Capacity

Gigawatts



Source: U.S. Energy Information Administration.
As of December 11, 2023.

Rapid Expansion of North American Battery Industry



By 2030, the US alone is projected to have nearly 1 terawatt hour of lithium battery cell manufacturing

- \$92B total investment and counting
- 80+ processing & manufacturing facilities

Supply chain for lithium batteries is growing rapidly throughout North America

- Creating immense demand for critical minerals
- Requiring significant new battery EOL and recycling infrastructure

NORTH AMERICAN BATTERY INITIATIVES






Analysis by CIC **energiGUNE**

Version 5. Last update: 09/2023



Expensive, Scarce Components in Li-ion Batteries

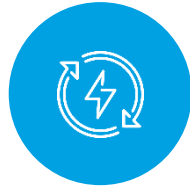
AS DEMAND FOR EV BATTERIES GROWS, COUNTRIES ARE RACING TO BUILD DOMESTIC SUPPLY CHAINS
99% OF RAW AND COMPONENT MATERIALS FOR LIBs ARE PRODUCED OUTSIDE THE U.S.

| Mineral | Pricing and demand growth ¹ | Supply shortfall risks | Geopolitical challenges |
|---|--|--|---|
| COBALT  | <ul style="list-style-type: none"> • Currently \$28,550/MT • 9.26% CAGR 2021-2025. | <ul style="list-style-type: none"> • Cobalt market to move into deficit by 2024. | <ul style="list-style-type: none"> • US sees cobalt a strategic and critical to U.S. security. • More than 2/3s mined cobalt comes from politically sensitive DRC. |
| NICKEL  | <ul style="list-style-type: none"> • Currently \$16,937/MT • 7.3% CAGR 2021-2028. | <ul style="list-style-type: none"> • Class I nickel, essential for electric vehicle batteries, is expected to face a shortage for the next three to five years (Oregon Group). • Ongoing LME market volatility. | <ul style="list-style-type: none"> • Indonesia a major supplier; converts low-grade ore with high-carbon footprint to LiB quality. • Russia accounts for ~17% of production capacity. |
| MANGANESE  | <ul style="list-style-type: none"> • Currently \$2,000/MT • High purity manganese needed for EVs. • Predicted 43% CAGR in next 5 years. | <ul style="list-style-type: none"> • Manganese dioxide is a critical link in the LiB supply chain that is driving EV adoption. • Many battery producers shifting to NMC vs. NCA batteries. | <ul style="list-style-type: none"> • US is 100% dependent on manganese imports. • China #1 miner and dominates manganese ore and concentrate imports, with 75% of imports. |
| COPPER  | <ul style="list-style-type: none"> • Currently \$8,873/MT • Demand estimated to grow 53% by 2040, driven by the electrification of transport and infrastructure (BNEF). | <ul style="list-style-type: none"> • By 2027, nearly 600,000 MT of additional copper needed to match EV demand (IDTechEx). • Forecasted deficit of 9M mt by 2030 (BMO Capital markets), and 14M mt by 2040 (BNEF). | <ul style="list-style-type: none"> • Supply chain issues at key copper Latin American countries, dearth of new mines. |
| LITHIUM  | <ul style="list-style-type: none"> • Currently \$13,320/MT (LiOH) • 20.6% CAGR 2020-2025. • Lithium use up 4x since 2010 (BNEF). | <ul style="list-style-type: none"> • Global LI market predicted to move into deficit starting in 2025. • Typically produced as lithium carbonate, requires additional refining. | <ul style="list-style-type: none"> • China dominates lithium refining. 96% of Australia's exports go to China; largest importer of Chile's lithium carbonate. |

¹ Pricing based on London Metal Exchange, www.lme.com, and company estimates.

The Next Generation Recycling Process

Replaces furnaces and heavy chemical use with 100% electricity-powered and closed-loop recycling, creating fundamentally non-polluting, cost-efficient solution that generates minimal waste



Recovers the high-value metals lost in smelting (like lithium and manganese), and produces high purity products



Proven for LABs and expanding to LiBs



Safer work environment, less hazardous materials, eliminates constant trainloads of chemicals

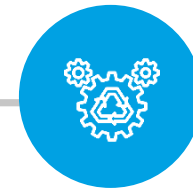


Strong IP protection:
73 global patents
43 patents pending



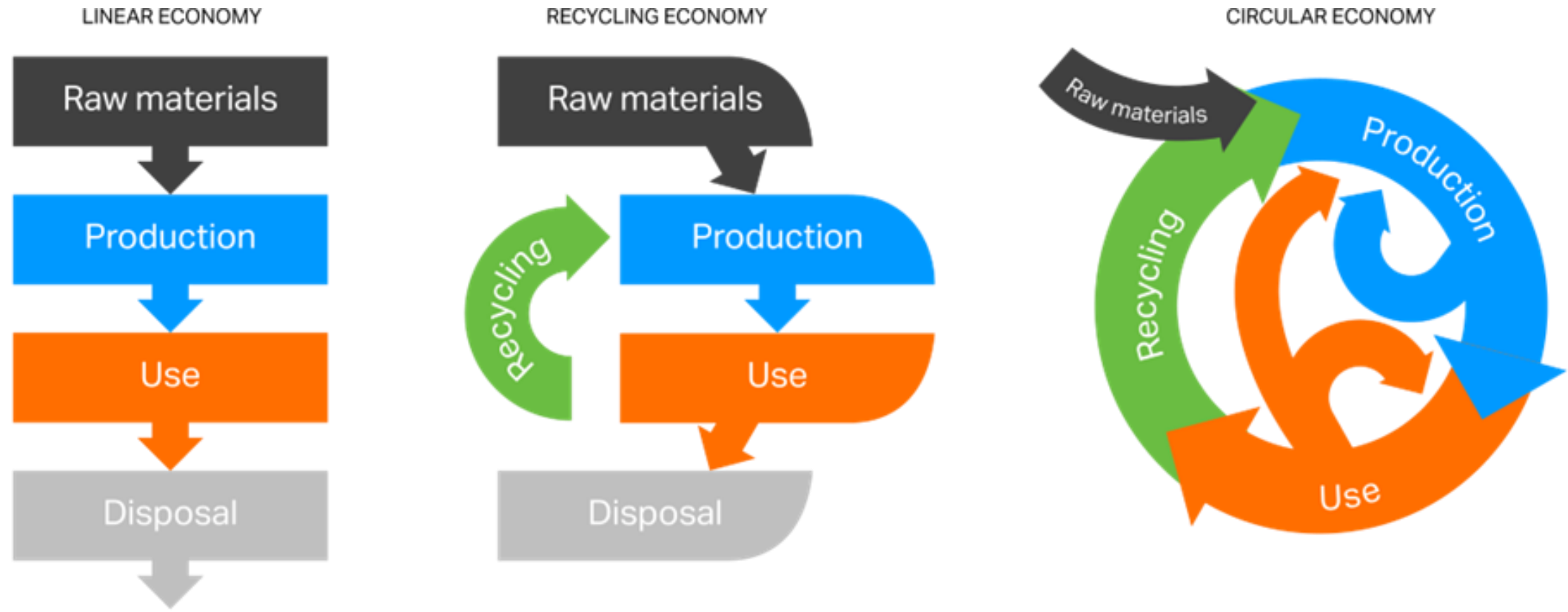
The only recycling process that:

Produces lithium hydroxide directly (or Li_2CO_3), reclaims high purity metals (not salts), regenerates chemicals used in closed-loop system, and has a clear pathway to net-zero operations



Creating a Circular Ecosystem

MOVING BEYOND A RECYCLING ECONOMY AND FOCUS ON CIRCULAR SOLUTIONS



Legacy Recycling Processes Not Sustainable

URNS OUT FURNACES AND TRAINLOADS OF CHEMICALS ISN'T ALL THAT CLEAN

Pyrometallurgy



- ❑ Energy intensive, fossil-fuel powered
 - Furnaces incinerate & oxidize valuable materials (even electric)
 - Creates slag and alloys needing further refining
 - Requires additional steps to salvage lithium, manganese, graphite



Hydrometallurgy



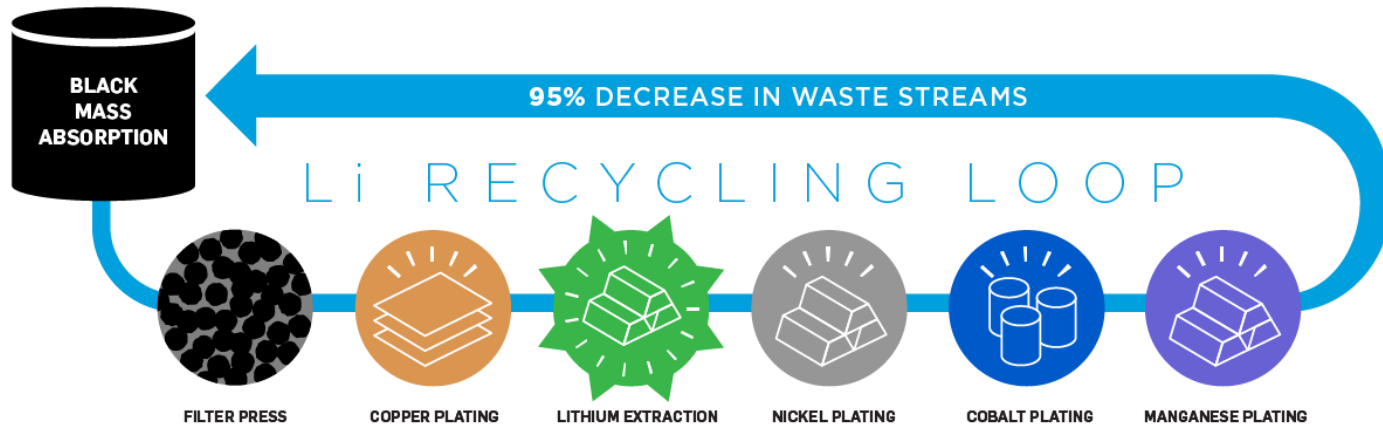
- ❑ Chemical intensive, embedded emissions
 - Trainloads of consumable chemicals required (i.e., NaOH, H₂O₂)
 - Embedded emissions from chemicals production & transport
 - More sodium sulfate & other waste than valuable material recovered



Current LiB Recycling Technology Comparison



Li AquaRefining: First Sustainable LiB Recycling



Li AquaRefining™ recovers critical materials using electricity in a closed-loop system

- 99% less CO2 than pyro or mining and no polluting furnaces
- 95% less chemicals than hydro, regenerative process lowers costs and emissions
- 95%+ recovery rate of all valuable materials



Sourced Black Mass



Pure Copper Plating



Lithium Crystallization (LiOH - Pictured) or Carbonation (Li2CO3)



Pure Nickel Plating



Pure Cobalt & Manganese Dioxide Co-Plated

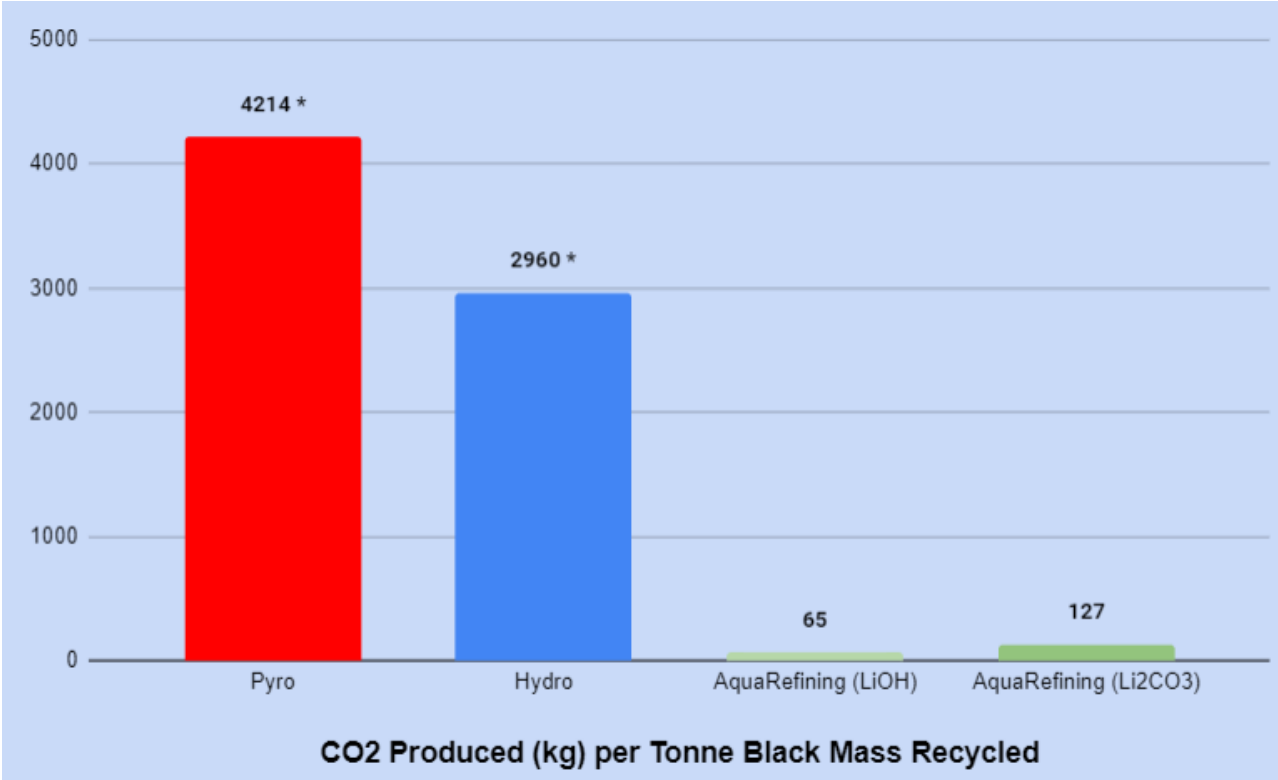


Game Changing Environmental Performance

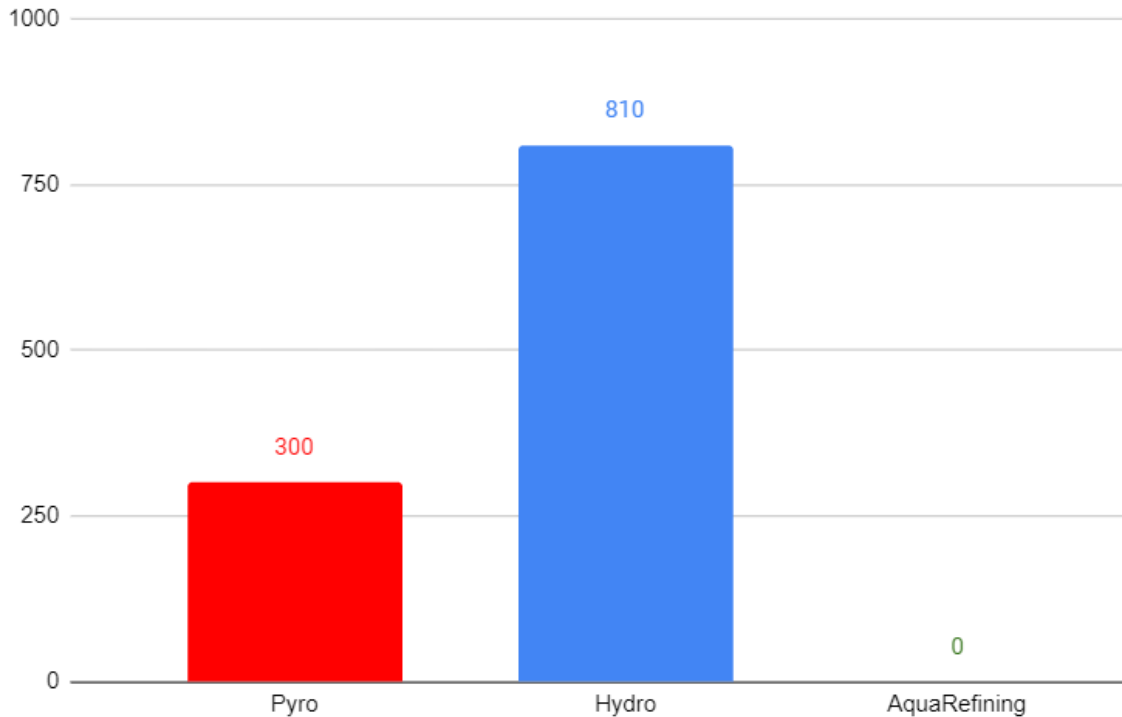


ELECTRIFYING LITHIUM BATTERY RECYCLING TO REDUCE EMISSIONS AND WASTE

- Aqua Metals' Li AquaRefining technology uses dramatically less energy – powered by electricity, instead of fossil fuels
- Much lower emissions per tonne recycled than pyro- and hydrometallurgical processes
- AquaRefining also produces substantially less waste than competing solutions – and no sodium sulfate

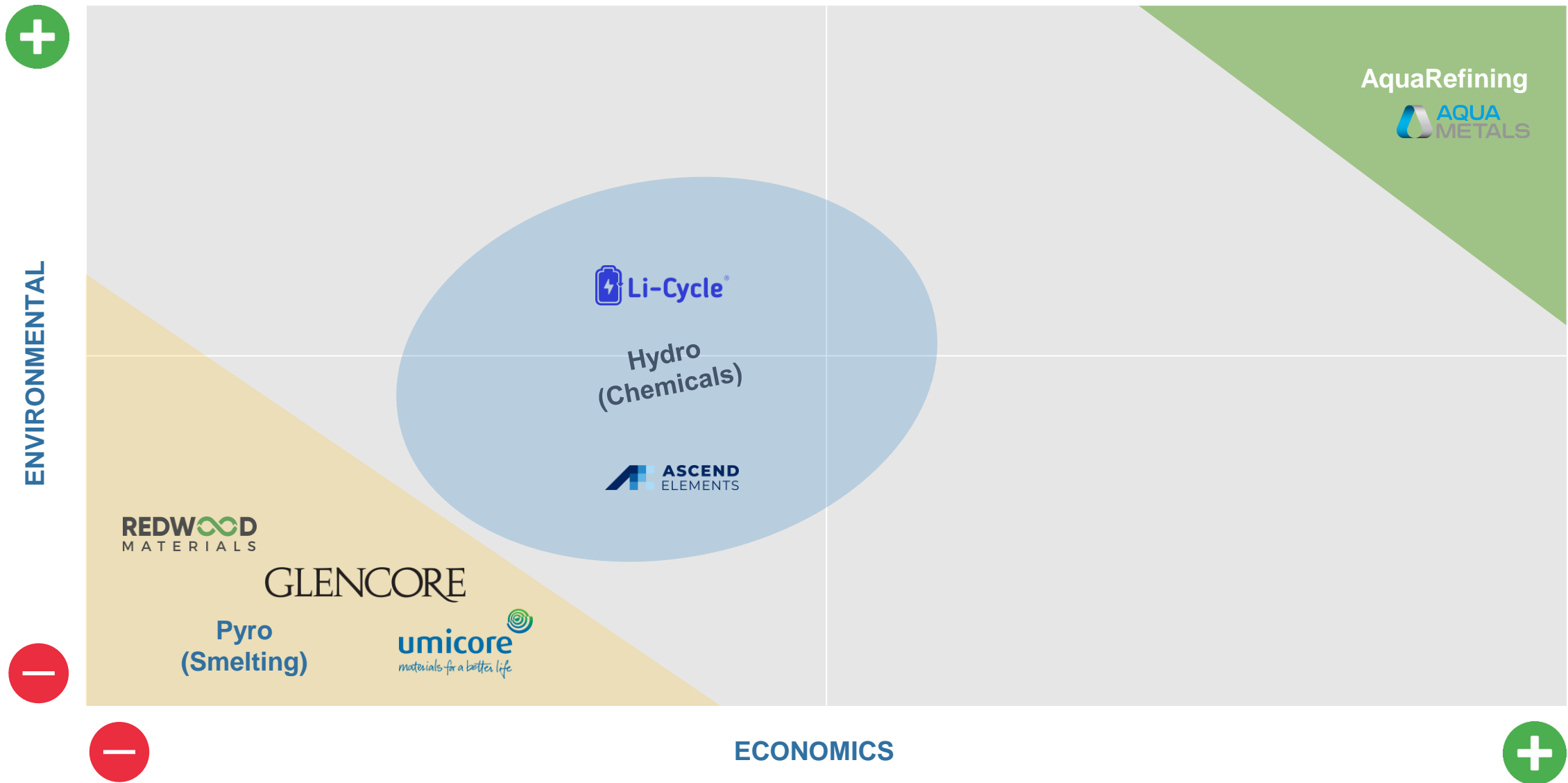


Sodium Sulfate (kg of Na₂SO₄) per Tonne Black Mass Processed

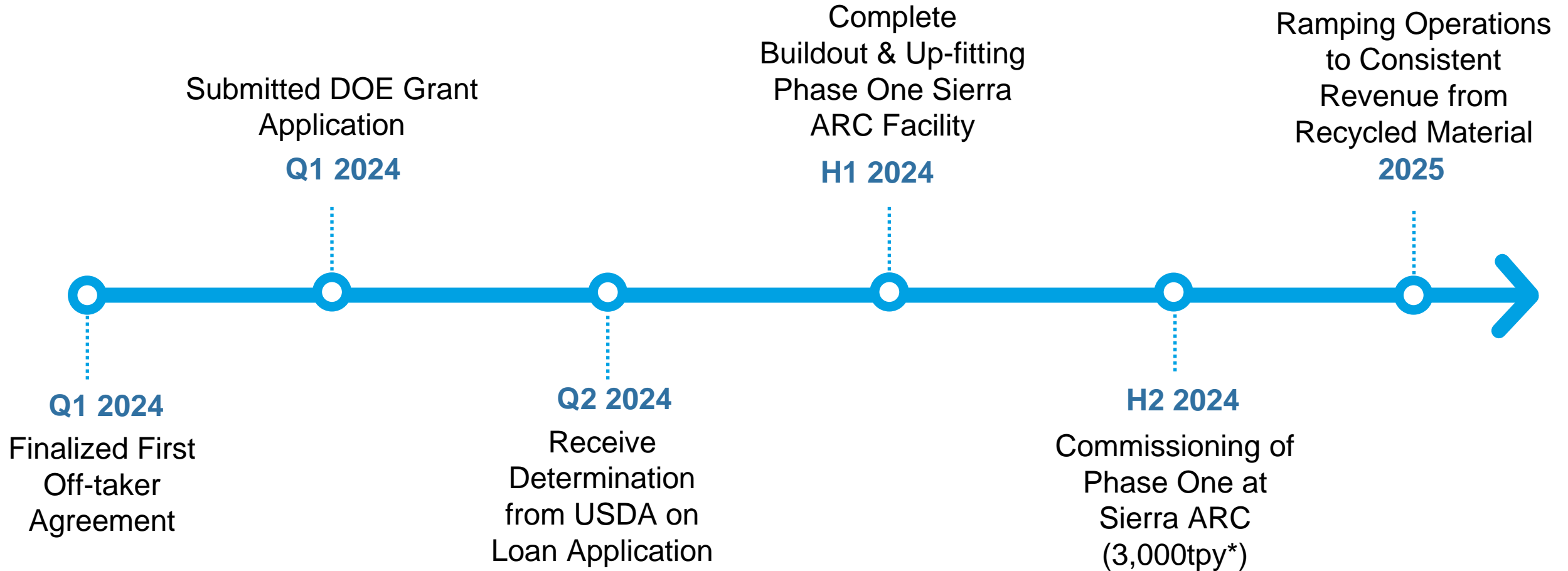


*Based on Argonne National Labs battery life-cycle model —EverBatt

Competitive Landscape Lithium Recycling



Aqua Metals' Commercial-Scale Timeline



Aqua Metals' AquaRefining Pilot

Reno, NV: 75-100 tonnes per year



Sustainable LiB Recycling Pioneers

ELECTRIFYING THE NEXT GENERATION OF LITHIUM BATTERY RECYCLING

- AquaRefining: The first sustainable battery recycling solution, a regenerative form of electro-hydrometallurgy
- An innovative application of electroplating – recover critical metals by plating them in electrochemical cells
- No furnaces, no one-time-use chemicals, no Na_2SO_4 waste, and regenerates proprietary solution
- Low-Carbon: No direct emissions, sourcing clean electricity to power operations & processes
- Pilot operational 24x5 (75-100tpy) and produces in spec product

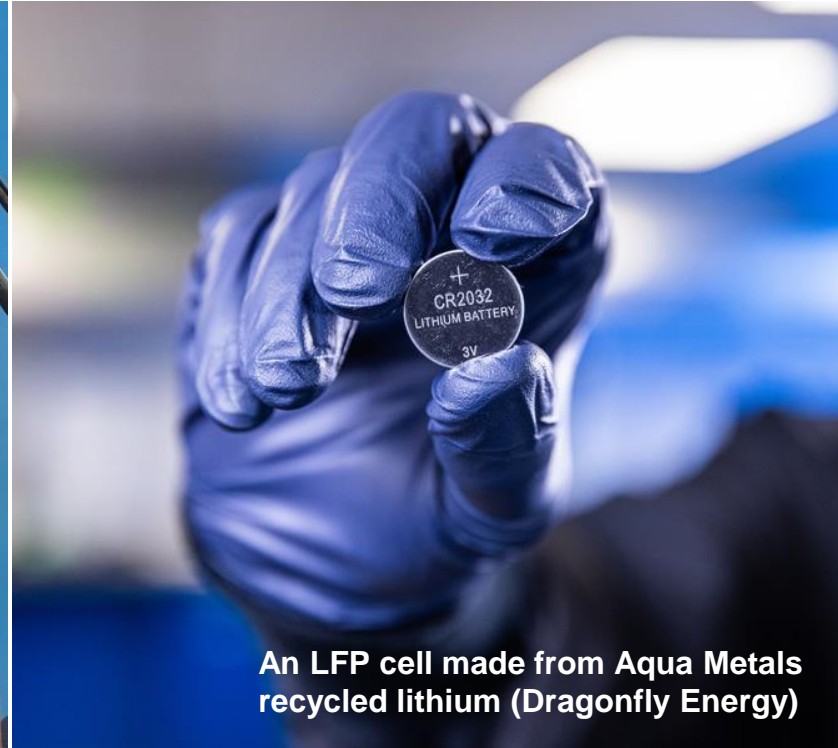


Sustainable LiB Recycling Pioneers

ELECTRIFYING THE NEXT GENERATION OF LITHIUM BATTERY RECYCLING



Electroplated copper recovered from black mass



An LFP cell made from Aqua Metals recycled lithium (Dragonfly Energy)



- Recovers pure metals (Co, Cu, Ni) instead of battery metal salts, achieving LME purity
 - ❑ Ability to deliver to various CAM/battery manufacturers, not spec'd to one customer
 - ❑ Recovering sulfates or salts at battery spec will be difficult, yet unproven at scale
 - ❑ Pure metals valuable in multiple industries
- AquaRefining also produces either lithium hydroxide or carbonate, depending on application, and manganese dioxide
 - ❑ Battery grade and validated by lithium battery manufacturer

Pilot Recycling Operations Lifecycle Analysis

Independent Technical Report conducted by global engineering firm **ICF International** including Lifecycle Analysis (LCA) of Aqua Metals' AquaRefining Pilot



Technical Report Conclusions:

- Today, AquaRefining shows 83% reduction in carbon emissions compared to hydrometallurgy – and can uniquely reduce climate impacts even further

~75% of emissions from NV grid electricity

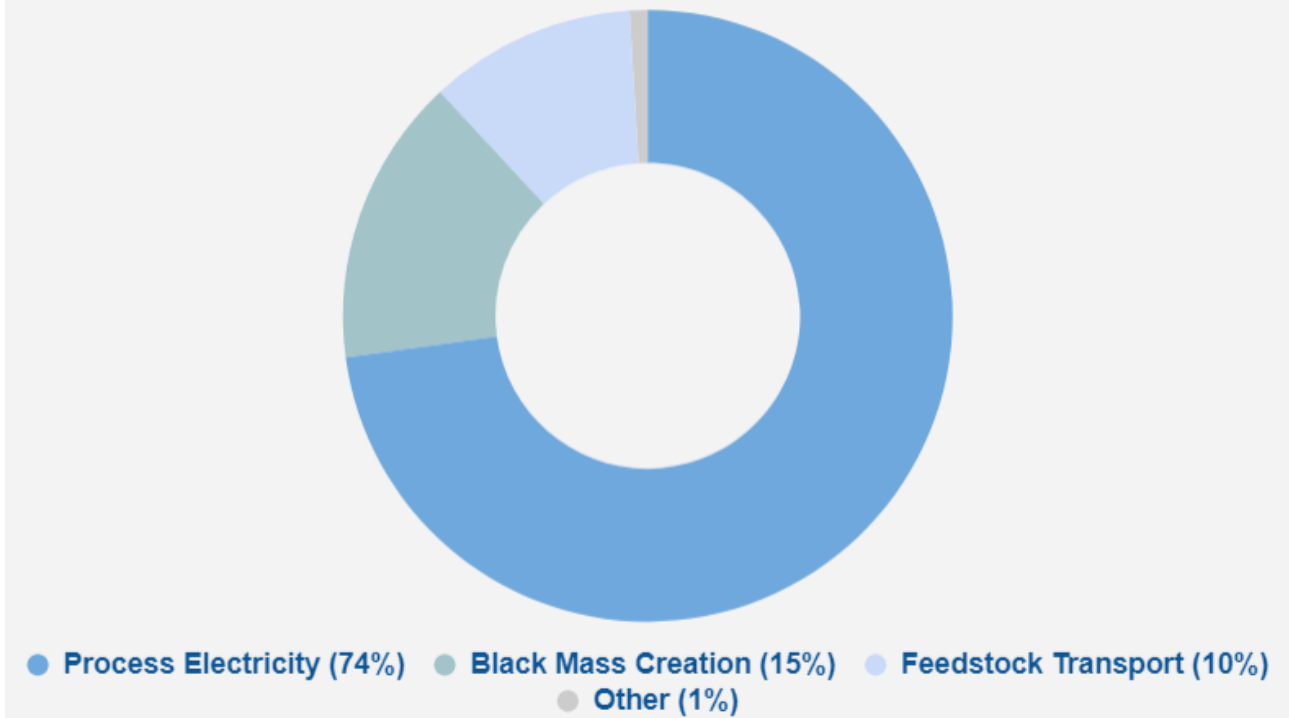
- Sourcing carbon-free electricity lowers CO₂ even further – beyond capabilities of hydro
- Currently off-setting emissions, securing VPPA for future commercial operations

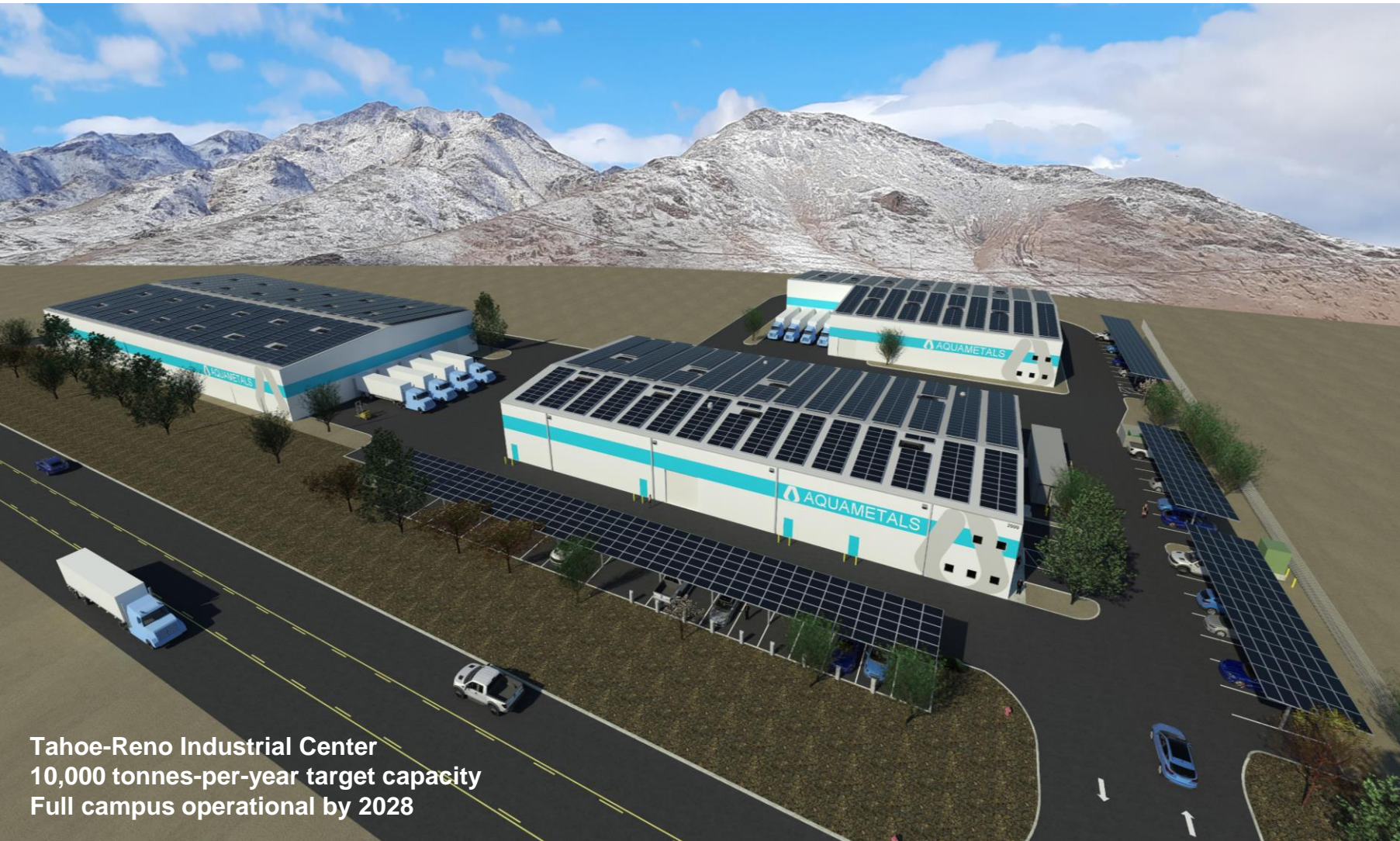
~25% from black mass creation & transport from our supply chain

- Partnerships with low-carbon black mass producers actively reducing emissions

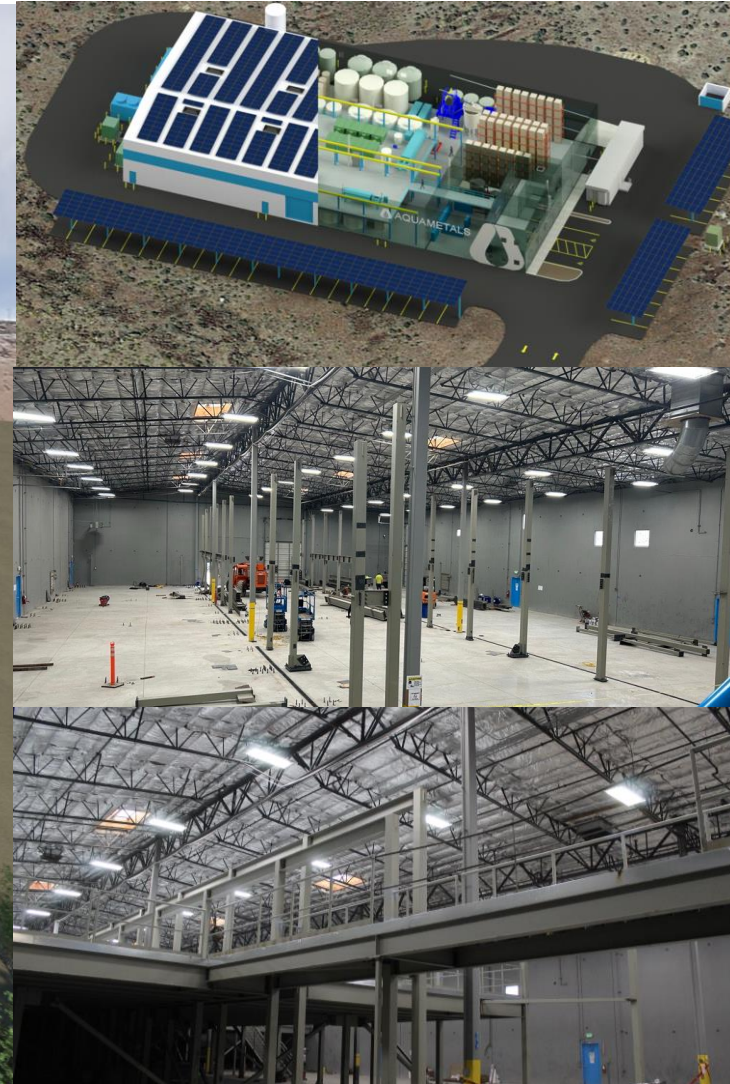
Lower climate emissions by design, and a clear pathway to net-zero LiB recycling

Li AquaRefining Lifecycle Emissions (by Source)





Tahoe-Reno Industrial Center
10,000 tonnes-per-year target capacity
Full campus operational by 2028



Expanding Partner Ecosystem

PROVIDING SAMPLES TO MANUFACTURERS AND SUPPLIERS THROUGHOUT THE BATTERY SUPPLY CHAIN



YULHO

Leading Battery Materials Co. in South Korea

- SK's largest black mass facility, expanding to 24,000tpa
- Partners: Licensing Li AquaRefining (Asia, EU), Established partner w/ SK's battery & EV companies

Strategic investment and partnership with Yulho Materials for a large-scale licensing agreement in South Korea, with plans for Asia and the EU



6K ENERGY

Innovative Battery Materials Manufacturer (CAM/pCAM)

- Building 13,000tpa PlusCAM facility in Jackson, TN

Partners:

- Off-taker for recycled Li, Ni, Co, MnO₂
- Sustainable battery materials conversion for CAM & pCAM



DRAGONFLY ENERGY

Leading LFP Battery & Energy Storage Company

Lithium Ferro Phosphate (LFP) & Solid-State Battery Tech

Partners:

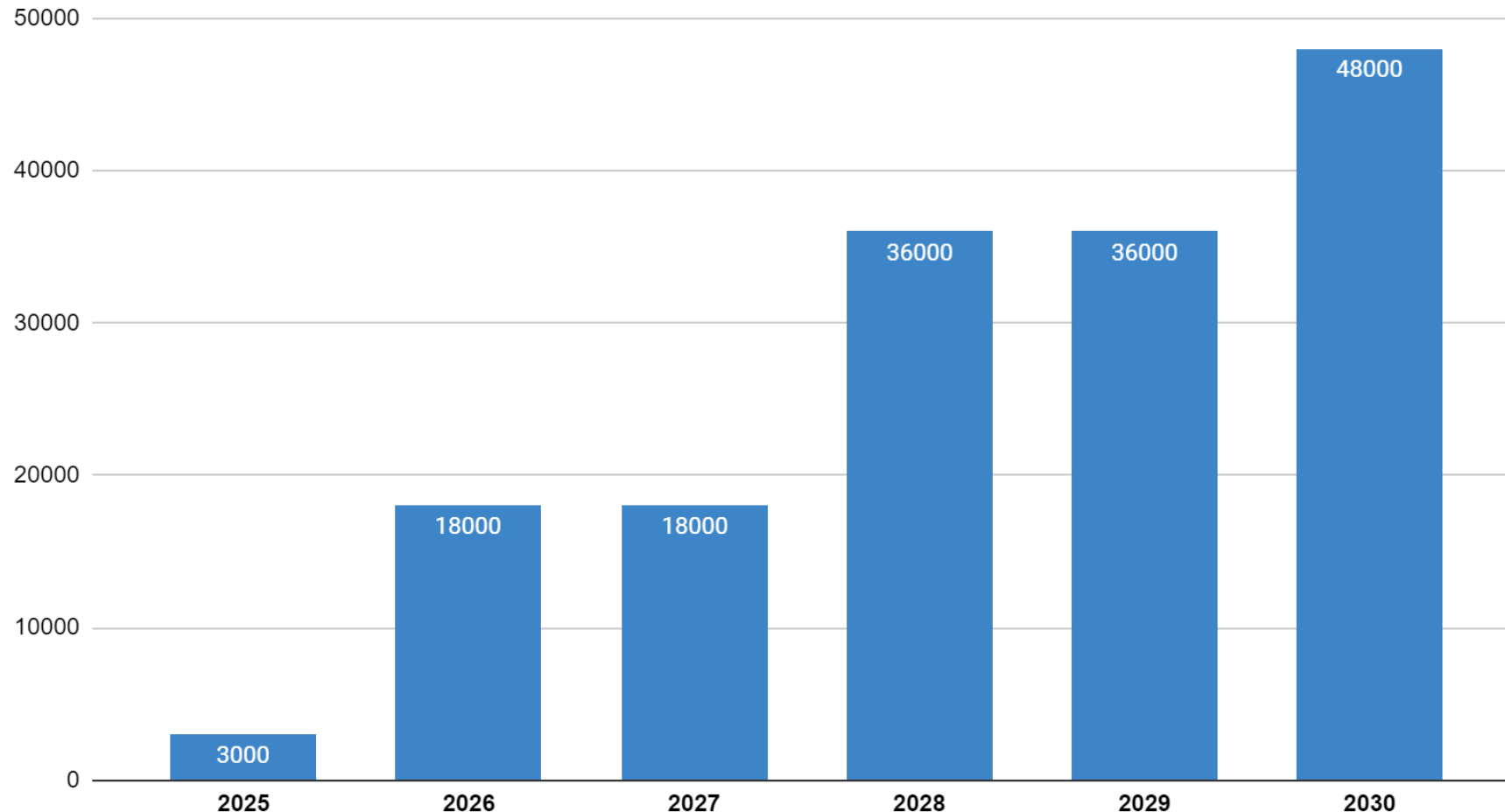
- Regional (NV) supply chain & off-taker for recycled lithium
- Validated Aqua Metals materials as part of advanced manufacturing process



Growing Capacity

TONNES PER ANNUM

AquaRefining: Planned Annual Global Capacity Growth (Announced)



- Combined capacity across all announced projects to date
- Wholly-owned, JV, and license models all being developed
- Includes Sierra ARC and co-location with 6K Energy in U.S., and licensed facilities in Asia with Yulho Materials

Financials

| As of December 31, 2023 | |
|-------------------------------|----------------|
| Cash and cash equivalents | \$16.5M |
| Working capital | \$13.7M |
| Quarterly burn rate (approx.) | \$5.0M |

| Additional Sources of Capital | |
|---|--------------------------------|
| USDA non-dilutive loan financing – potential | \$25.0M targeted |
| Other non-dilutive loan financing – potential | \$25.0M targeted |
| U.S. Government grants – potential | \$5.0M - \$100.0M range |

Management



Steve Cotton
Chief Executive Officer,
President

Rejoined Aqua Metals in, 2018;
Previously served as Chief
Commercial Officer.

Co-founded Canara, Inc. (formerly
Data Power Monitoring and
IntelliBatt) in 2001; served as CEO
through its sale to a private equity
firm in 2012; Then served as
Founder and Executive Chairman
until 2014.

Led a team to commercialize
Sendmail; began his career at
Octel Communications through its
\$1.1B exit to Lucent in 1997.



Judd Merrill
Chief Financial Officer

Joined Aqua Metals in 2018 from
Klondex Mines Ltd., an
international mining company
where he was Director of
Finance/Accounting, responsible
for overseeing the SEC
compliance and the management
of the Company's \$200+ million
budget over five subsidiaries.

Spent five years as CFO of
Comstock Mining Inc., a publicly
traded gold company where he
was instrumental in establishing
financial modeling and analytics.

Controller at Fronteer Gold Inc. as
an assistant controller at Newmont
Mining Corp. Began his career at
Deloitte & Touche.



Ben Taecker
Chief Engineering
and Operating
Officer

20+ years of experience in
manufacturing and operations
leadership

Spent six years in progressive
leadership roles at the Johnson
Controls Inc. Lead Acid Battery
Recycling Center

Experience in startups,
environmental regulation
compliance, process development
and operational excellence.



Dave McMurtry
Chief Business
Officer

Experienced Silicon Valley high-
tech executive; expertise in
renewable energy and international
markets development

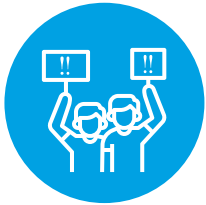
Responsible for leading the team
in exploring and strategically
pursuing multiple paths to scalable
growth for LI AquaRefining.

Global experience includes
working in more than 80 countries
on five continents.

Previously CEO of the Global Stars
Foundation at the AI Dabbagh
Group. For the last 25 years, Dave
has held multiple executive
positions, including with Intuit Inc,
and Habitat for Humanity
International.

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