



Item 12: California Clean Energy Fund DBA CalCEF Ventures

March 17, 2025 Business Meeting

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Energy Research and Development Division, Technology Innovation &
Entrepreneurship Branch



Benefit to Californians



\$1.5 Billion+
raised



2,400+ jobs
created



1540+ Applicants



227 pilot projects
launched



13%

All other
small
business



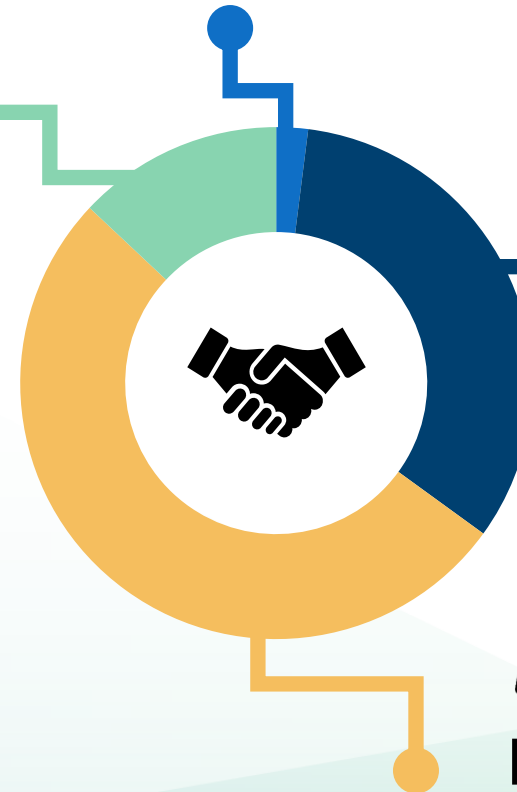
2%

Veteran-led



33%

Women-led



52%

Minority-led



Overview – CalSEED Program

The California Sustainable Energy Entrepreneur Development Initiative (CalSEED) - small-scale funding for early-stage clean energy concepts and prototypes

Two stages of funding:



Concept Award

\$200,000

- Concept development & assistance
- Mentorship from industry leaders
- Introduction to resources to advance concept



Prototype Award

\$500,000

- Successful Concept Awardees prepare for commercialization
- Business Plan Competition to push thinking about commercialization



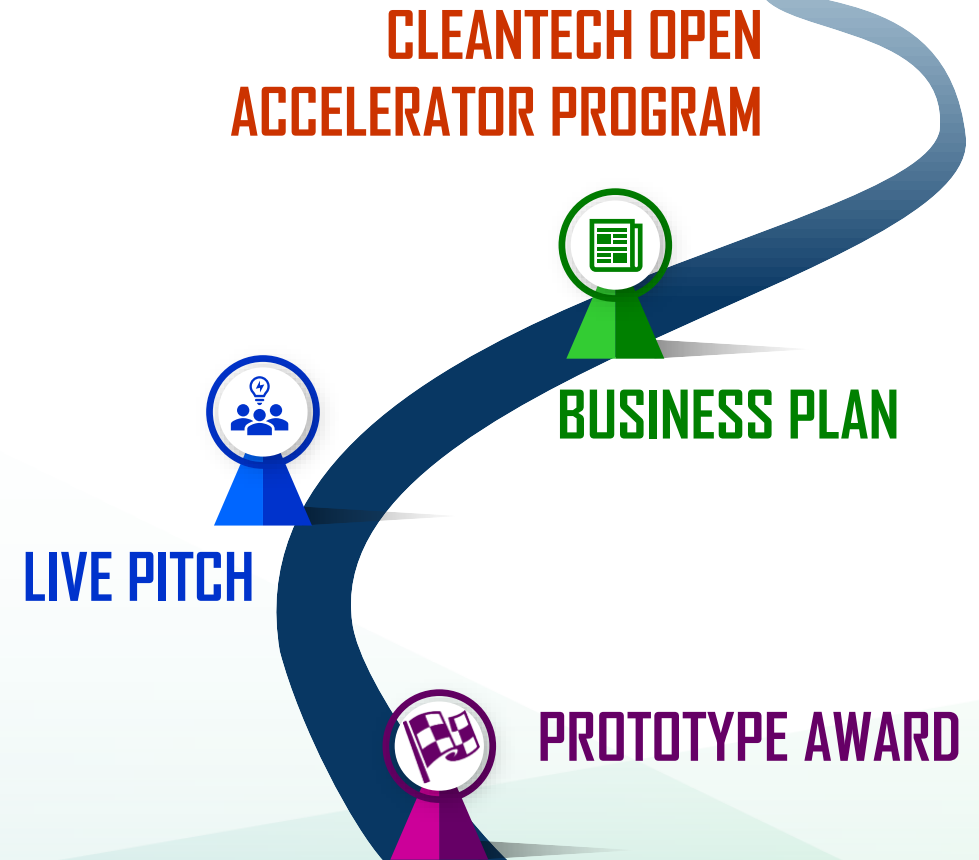
Overview – Prototype Award

7th Prototype Award competitive solicitation held in summer of 2024

Companies judged on technology's technical and commercial potential

- Business case analysis
- Company pitch session

Eight top-scoring companies recommended for Prototype Awards

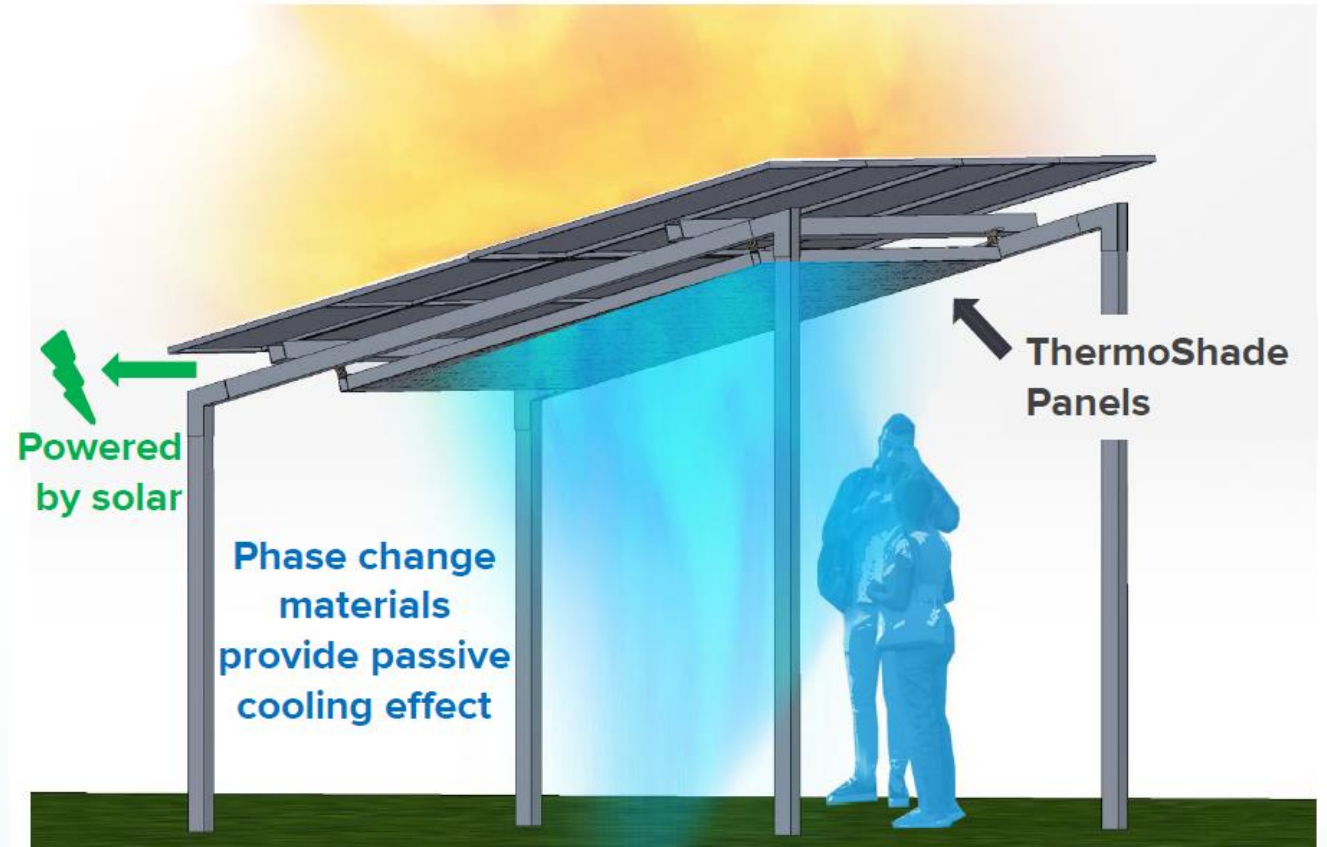




ThermoShade Solutions Inc.

Passive Heat-Absorbing Shade Technology

- Feels up to 20°F cooler than under a basic awning
- Designed for off-grid operation → energy cost savings
- Performs in all climates

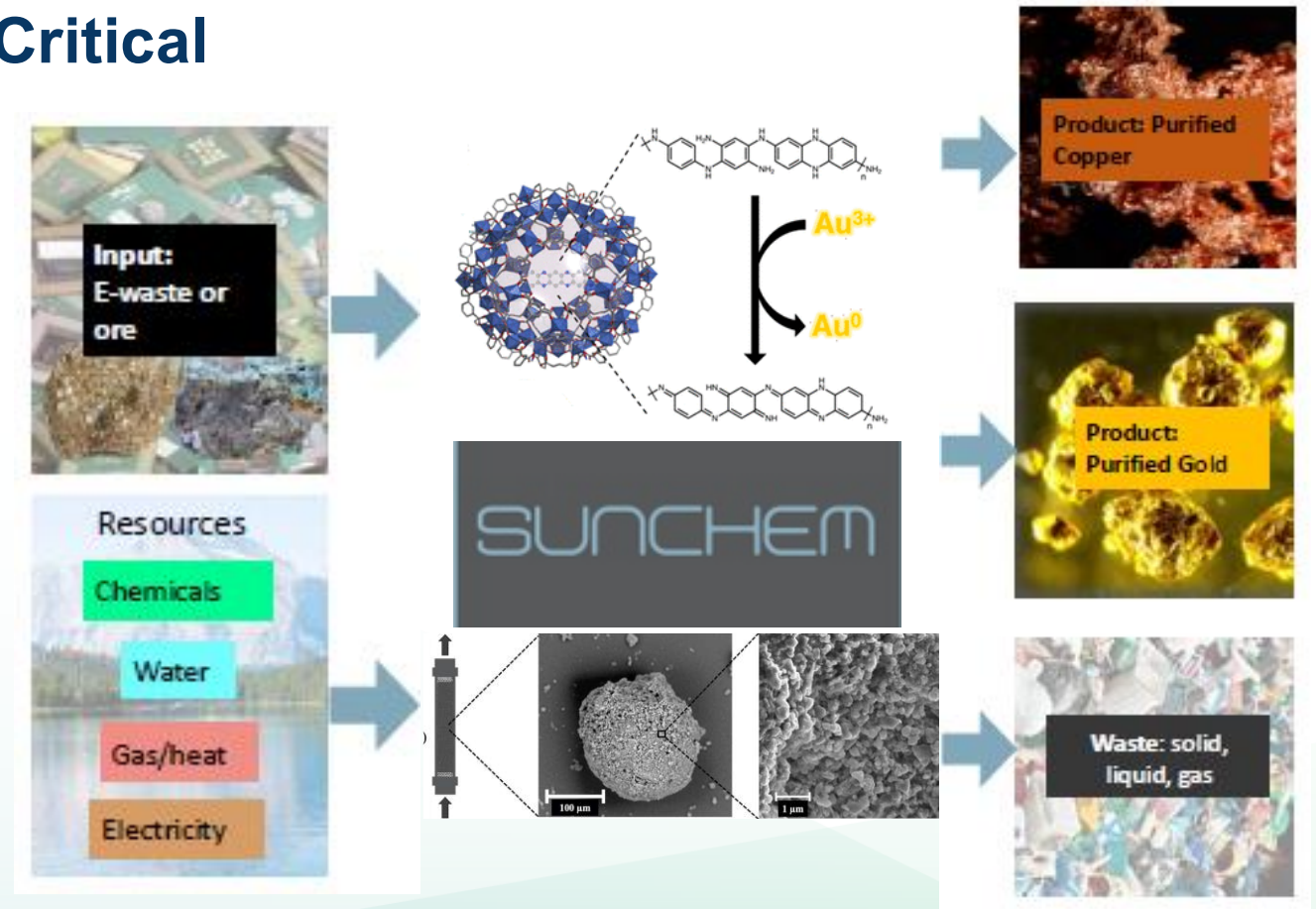




Sunchem, Inc.

Metal-Organic Framework-Based Critical Metal Recovery System

- Filtration device recycles copper and gold from e-waste and ores
- Low cost and energy use
- No harsh acids or toxic chemicals



Source: Sunchem

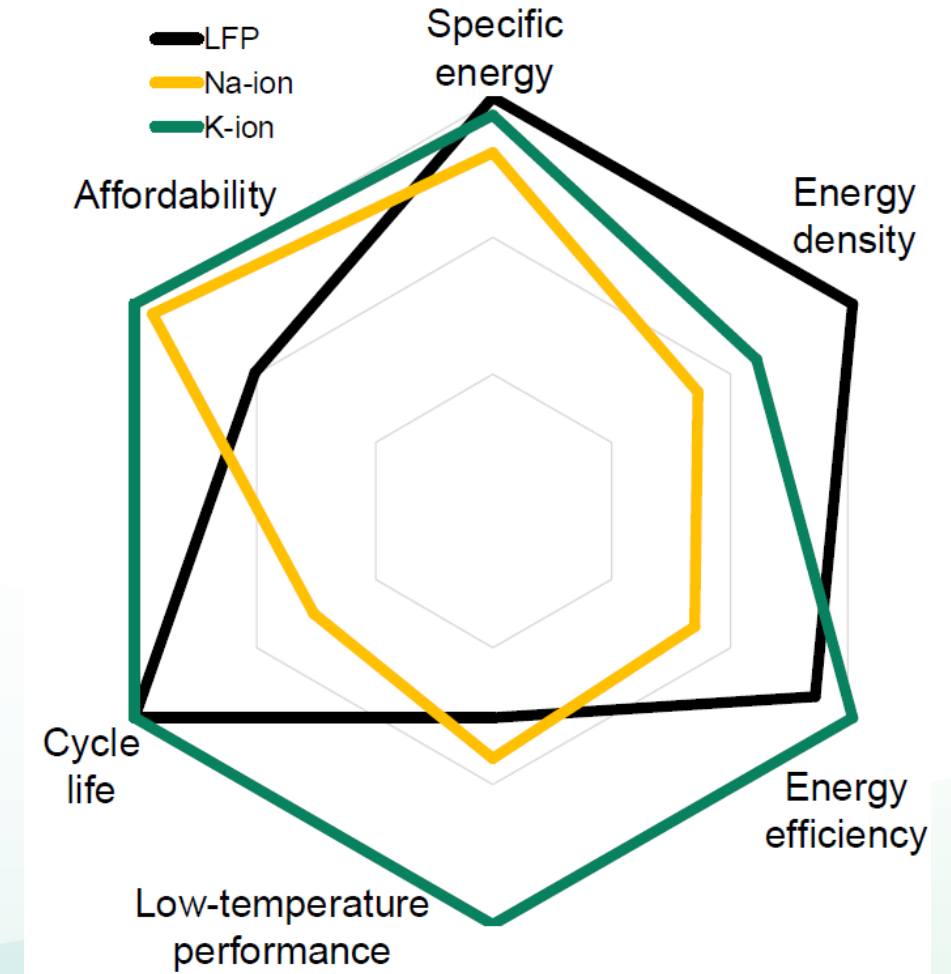


Project K Energy, Inc.



Advanced Potassium-Ion Battery Storage

- Stationary storage and fast-charging EV batteries
- Compared to Li-ion batteries:
 - Lower cost
 - More Efficient
 - Better performing at lower temperatures
 - Longer lasting



Source: Project K



Westwood Aerogel Co.

Scalable Aerogel Insulation Manufacturing Process

- Prevents 90-250% more heat loss than traditional insulation materials
- Manufacturing line to increase production and lower cost of aerogel powder
- Integrate aerogels into structural building components



Source: Westwood Aerogel

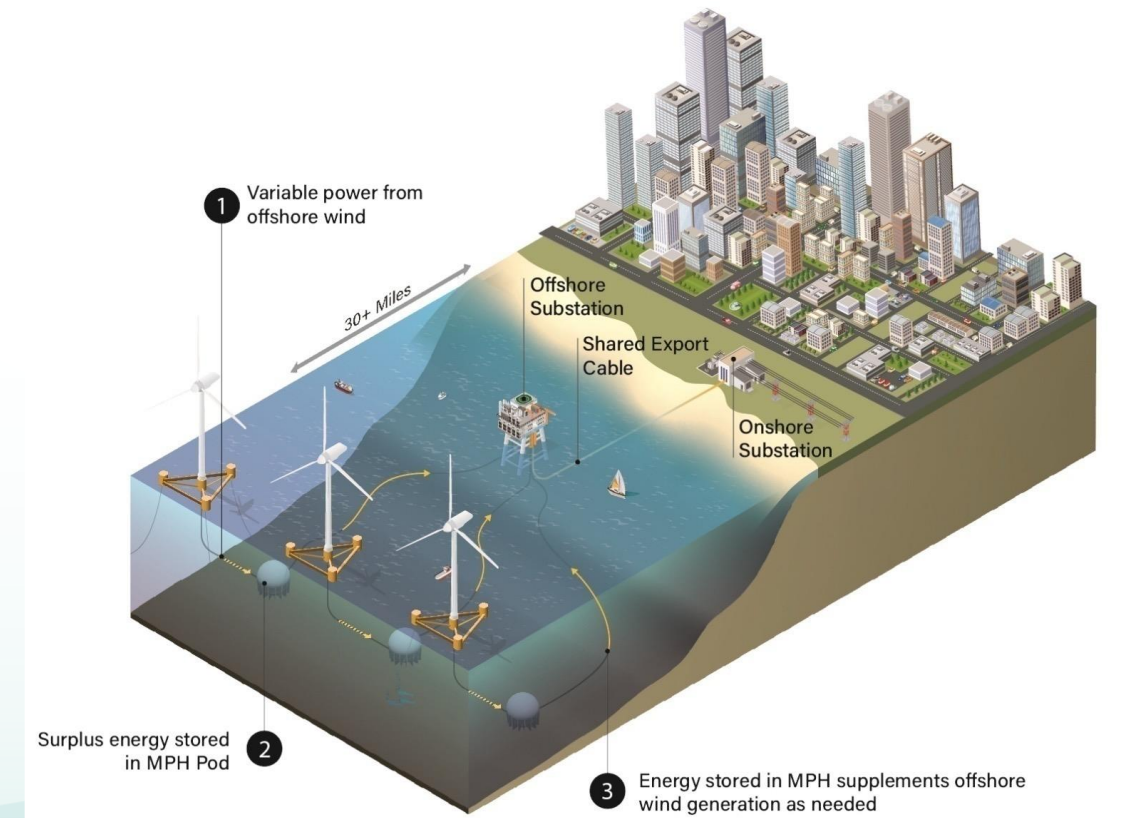


RCAM Technologies dba Sperra

sperra

Optimizing Subsea Energy Storage for Offshore Wind Integration

- Subsea pumped storage hydropower using 3D printed concrete spheres
- >72% roundtrip efficiency
- 4- to 24-hour timescale
- 50- to 80-year life



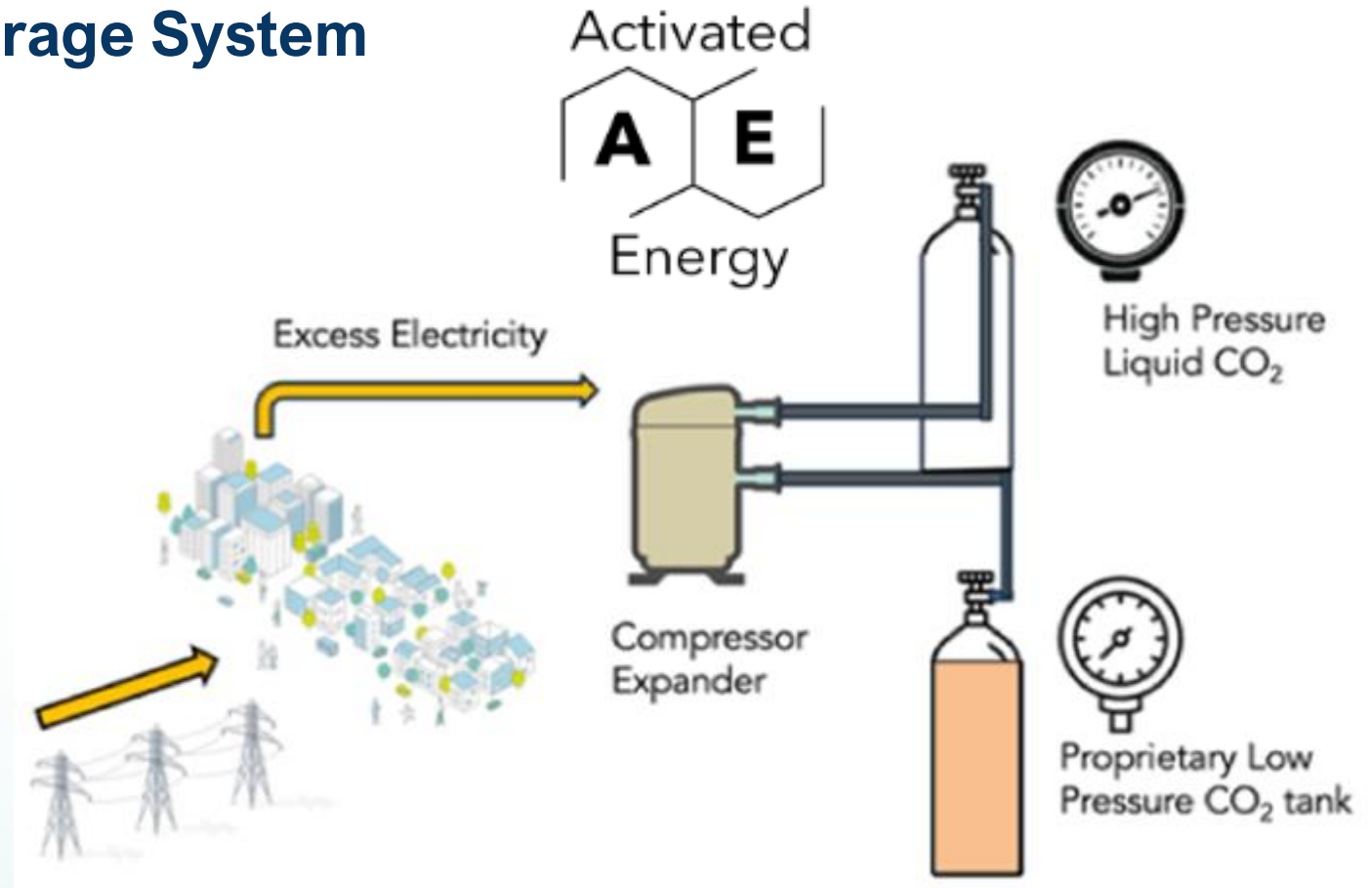
Source: RCAM Technologies dba Sperra



Activated Energy, LLC

Compressed CO₂ Energy Storage System for Urban Grid Resilience

- Low-cost, nonflammable, long duration energy storage system
- 20- to 40-hour timescale
- Small and durable



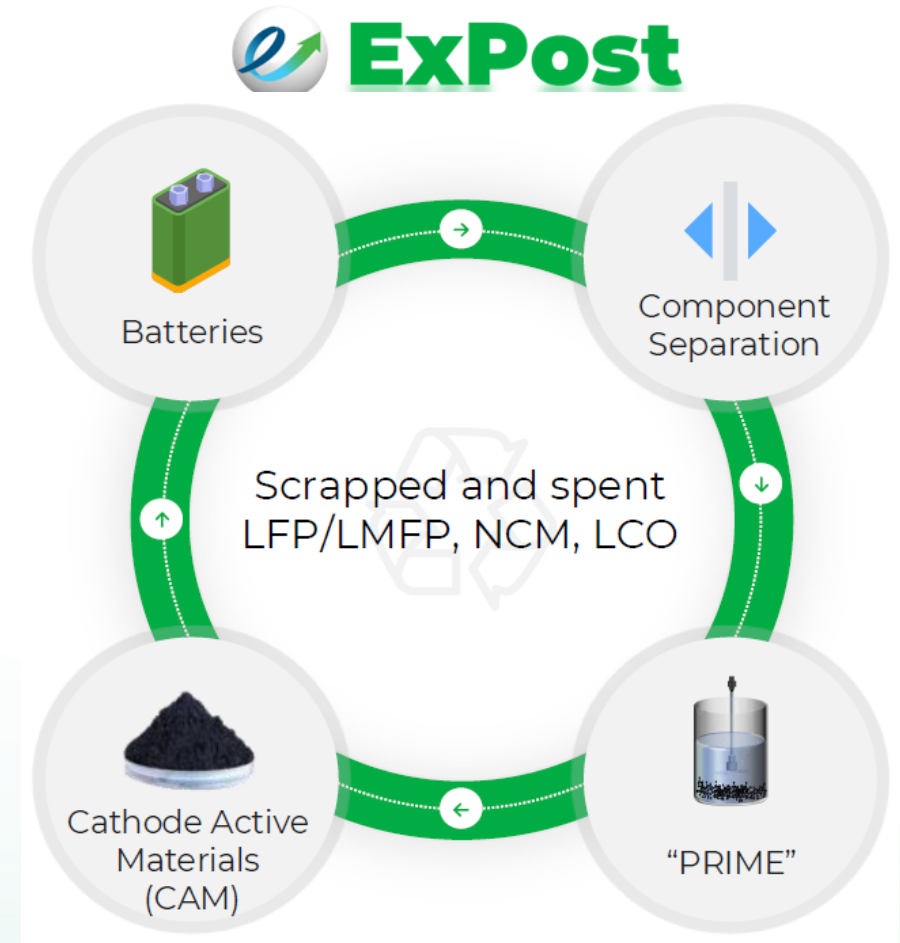
Source: Activated Energy



ExPost Technology, Inc.

Integrated Cathode Material Regeneration and Purification for Battery Reuse

- 80% lower energy consumption and GHG emissions than conventional recycling methods
- 40% lower cost than newly manufactured cathodes
- No quality degradation for recycled cathodes



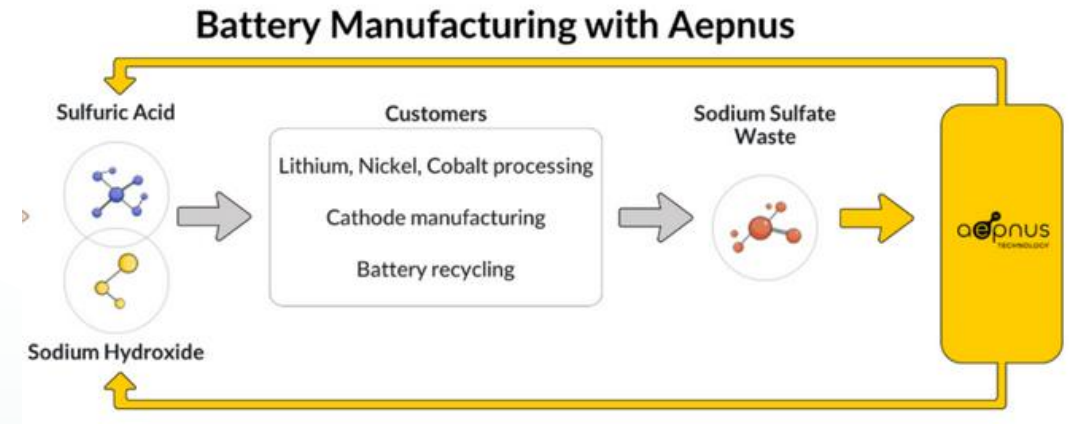


Aepnus Technology, Inc.

Advancing Circular Chemical Recycling for Battery Supply Chains with Scaled Electrolysis Systems



- Recycles sodium sulfate waste into Sulfuric Acid and Sodium Hydroxide
- \$30-300/ton to dispose of sodium sulfate; equivalent sulfuric acid/sodium hydroxide worth \$700
- Increase current pilot system production by 4x



Source: Aepnus Technology



Staff Recommendation

- Approve these eight small grant awards and staff's recommendation that this action is exempt from CEQA