

Overview of Battery R&D at U.S. Department of Energy

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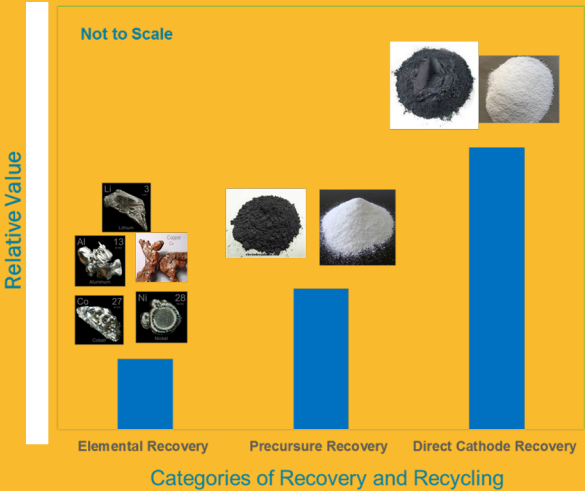
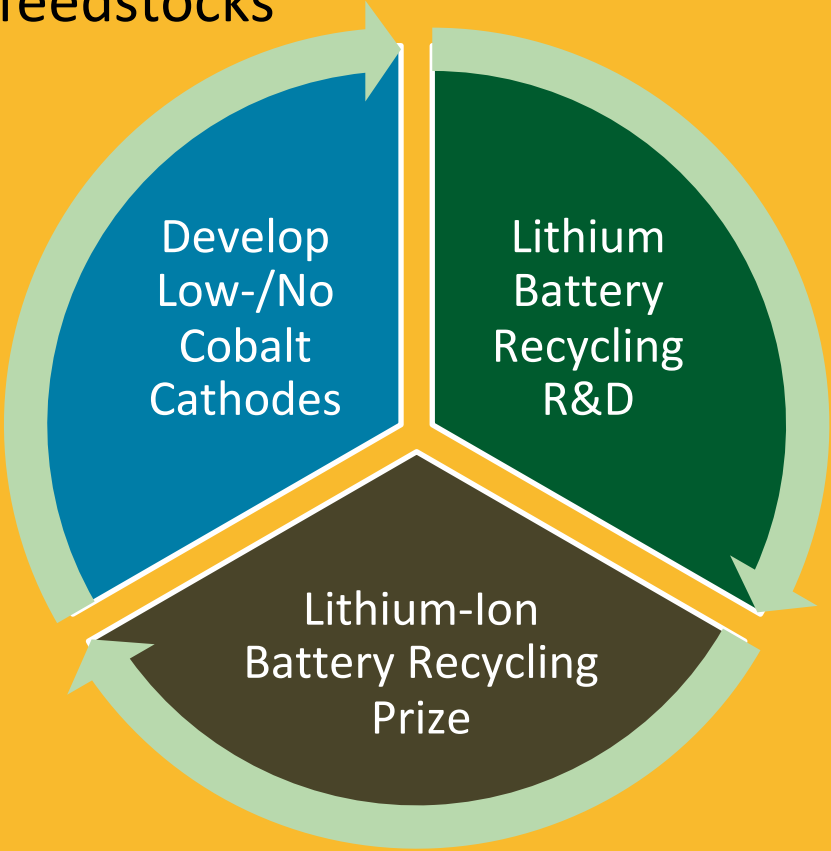
DOE Strategic Objective for Electric Vehicle Battery Storage

By September 30, 2022

- Reduce the cost of EV battery packs to less than \$150/kWh (long-term goal is \$80/kWh)
- Significantly reduce or eliminate the dependency on critical materials
- Utilize recycled material feedstocks



Cobalt (CO) Content (kg) per 100 kWh battery pack	NMC622	19
	Low-no CO target	< 5 or Zero



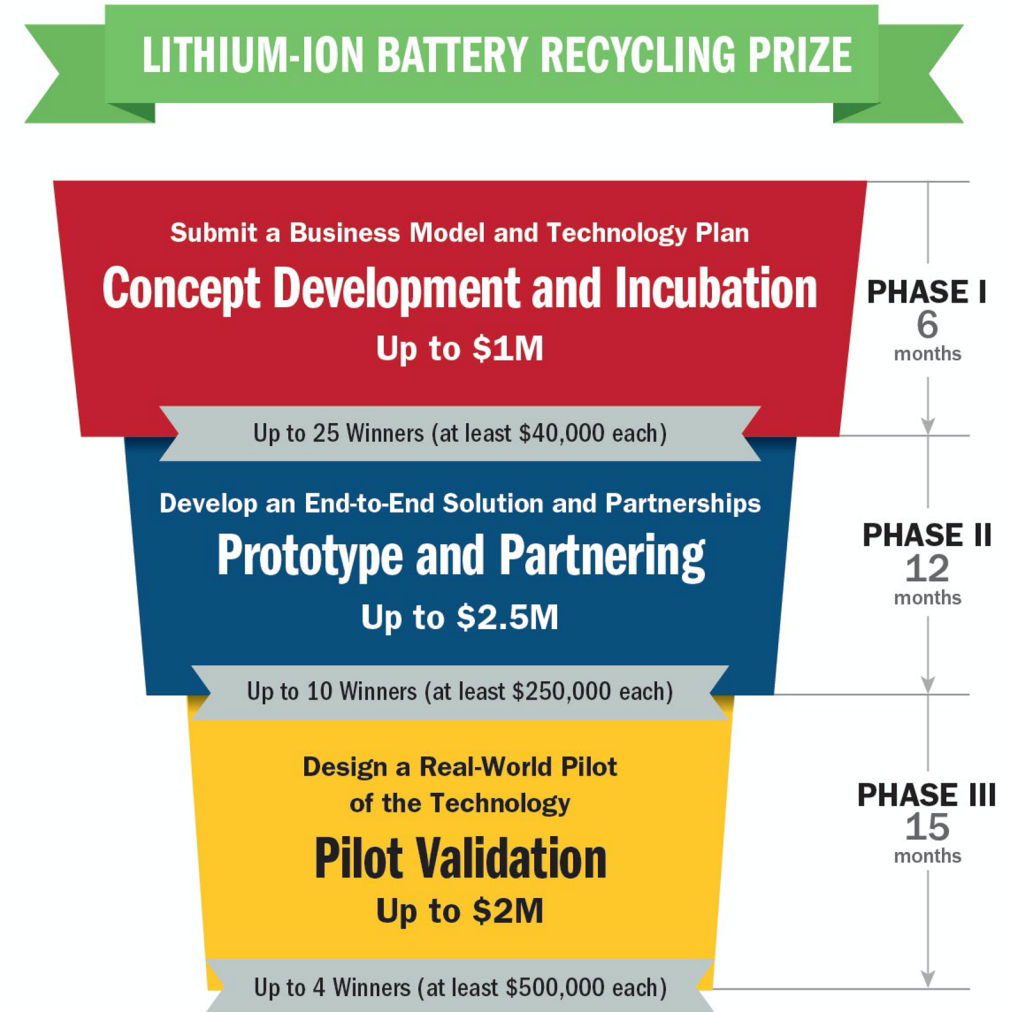
Energy Storage Grand Challenge

- Across DOE offices
- 5 cross-cutting tracks:
 - (i) Technology R&D,
 - (ii) Manufacturing and Supply Chain,
 - (iii) Technology Transitions,
 - (iv) Policy and Valuation, and
 - (v) Workforce
- Focused on 6 use cases:
 - (i) facilitating an evolving grid,
 - (ii) serving remote communities,
 - (iii) electrified mobility,
 - (iv) interdependent network infrastructure,
 - (v) critical services, and
 - (vi) facility flexibility, efficiency and value enhancement.

Proposed roadmap for R&D:

https://www.energy.gov/sites/prod/files/2020/07/f76/ESGC%20Draft%20Roadmap_2.pdf

Battery Recycling Prize



<https://www.herox.com/BatteryRecyclingPrize>

Funding Opportunities

Gathering critical information to drive R&D

1. Request for Information on the Office of Energy Efficiency & Renewable Energy's in support of Battery Critical Materials Supply Chain R&D (comments due: 7/31/20)
2. Request for Information on Energy Storage Grand Challenge Roadmap (comments due: 8/21/20)

Announced FOA selections through Vehicle Technologies Office in July 2020

- Advance lithium-ion batteries using silicon-based anodes,
- Reduce the need for critical minerals such as rare-earth materials in electric drive motors and platinum group metals in emission catalysts,
- Accelerate the development of smart charging technologies to mitigate potential electric vehicle impacts on the grid and maintain low-cost charging for consumers

www.eere-exchange.energy.gov

Thank you!

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