

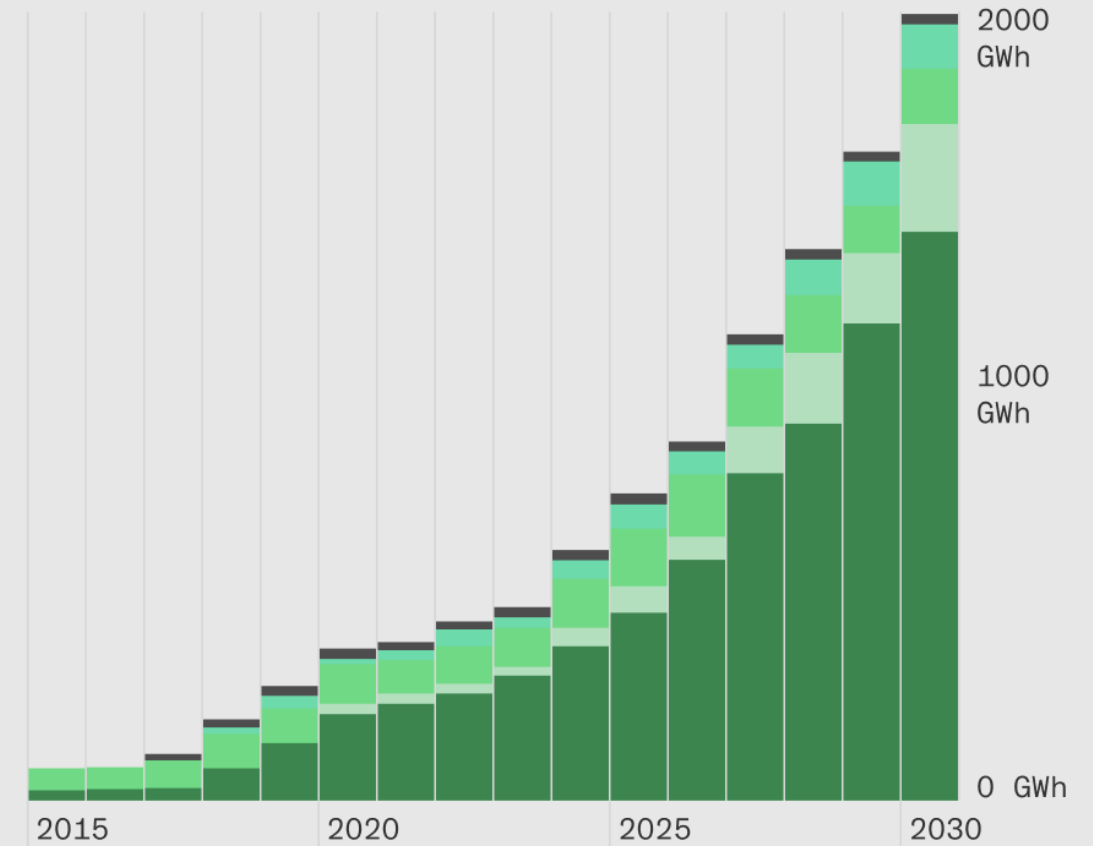
Building a sustainable battery supply chain



Mass electrification demands more batteries

LITHIUM-ION BATTERY DEMAND GROWTH BY TRANSIT TYPE
IN THE US FROM 2015 TO 2030

ESTIMATE IN GIGAWATT HOURS



- ELECTRIC BUSES
- CONSUMER ELECTRONICS
- STATIONARY STORAGE

- COMMERCIAL EV
- PASSENGER EV

Redwood's focus



Increase the **supply**
of battery materials

01

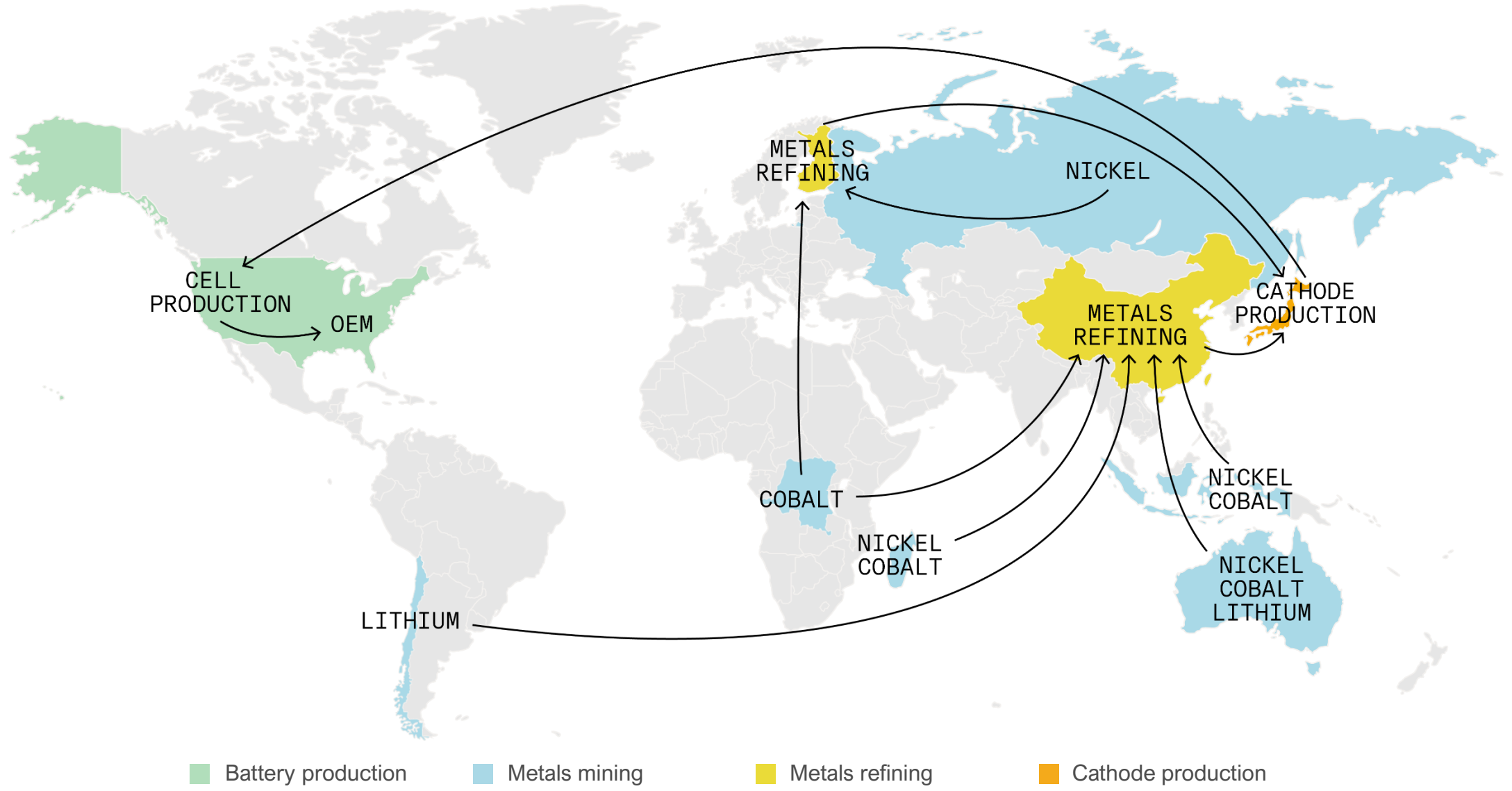
Reduce the **cost**
of batteries

02

Reduce the
**environmental
impact** of batteries

03

The current 50,000+ mile cathode supply chain



Redwood Tahoe Campus McCarran, NV June 2024

RECYCLING
OPERATIONS

HYDROMETALLURGY
REFINING

MATERIALS
STORAGE

BATTERIES
FOR
RECYCLING

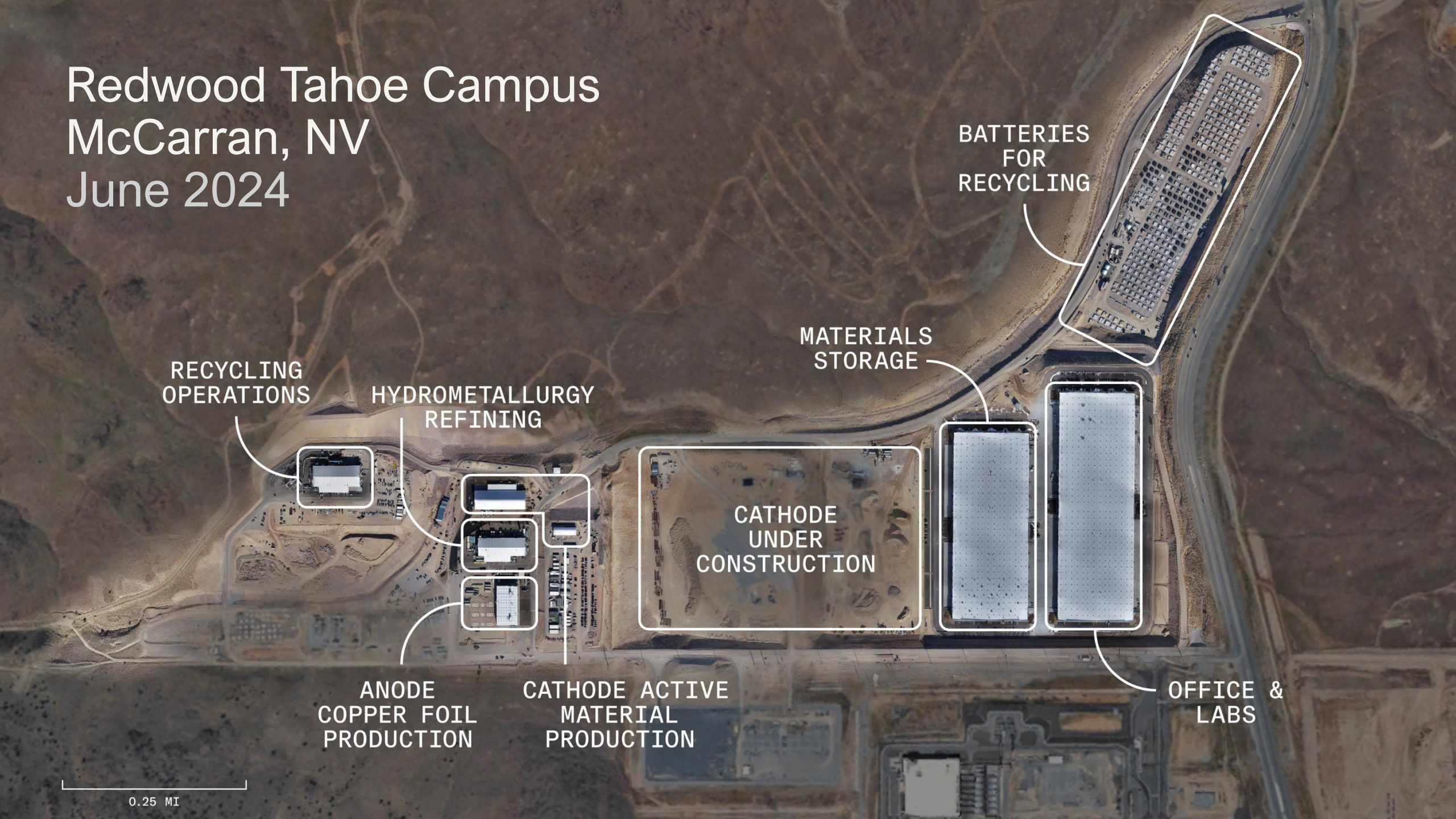
CATHODE
UNDER
CONSTRUCTION

ANODE
COPPER FOIL
PRODUCTION

CATHODE ACTIVE
MATERIAL
PRODUCTION

OFFICE &
LABS

0.25 MI



What we do

COLLECTION

RECYCLING

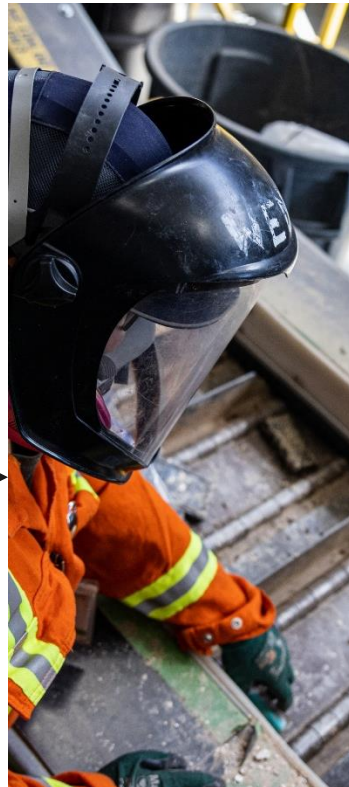
REFINING

MANUFACTURING

BATTERY MATERIALS



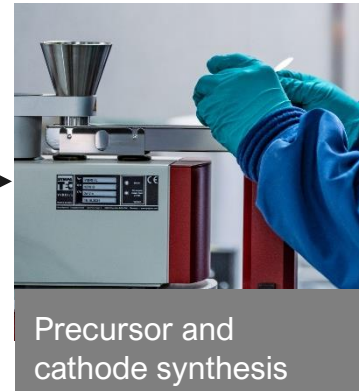
Batteries for recycling



Materials specific recycling



Hydrometallurgical refining



Precursor and cathode synthesis



Battery Metal Intermediates



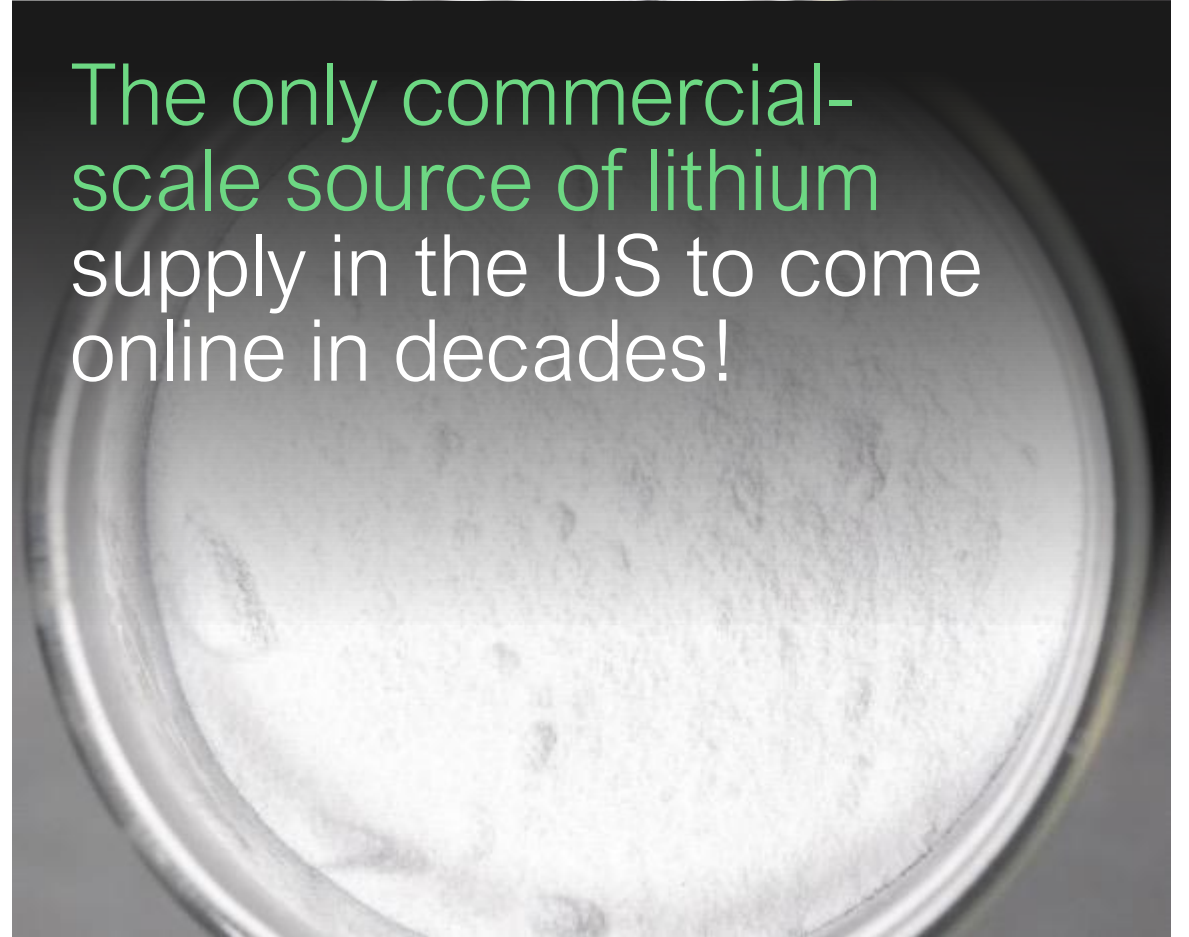
Cathode Active Material (CAM)

Redwood Milestones

First nickel "mine" to open in the United States in a decade.



The only commercial-scale source of lithium supply in the US to come online in decades!



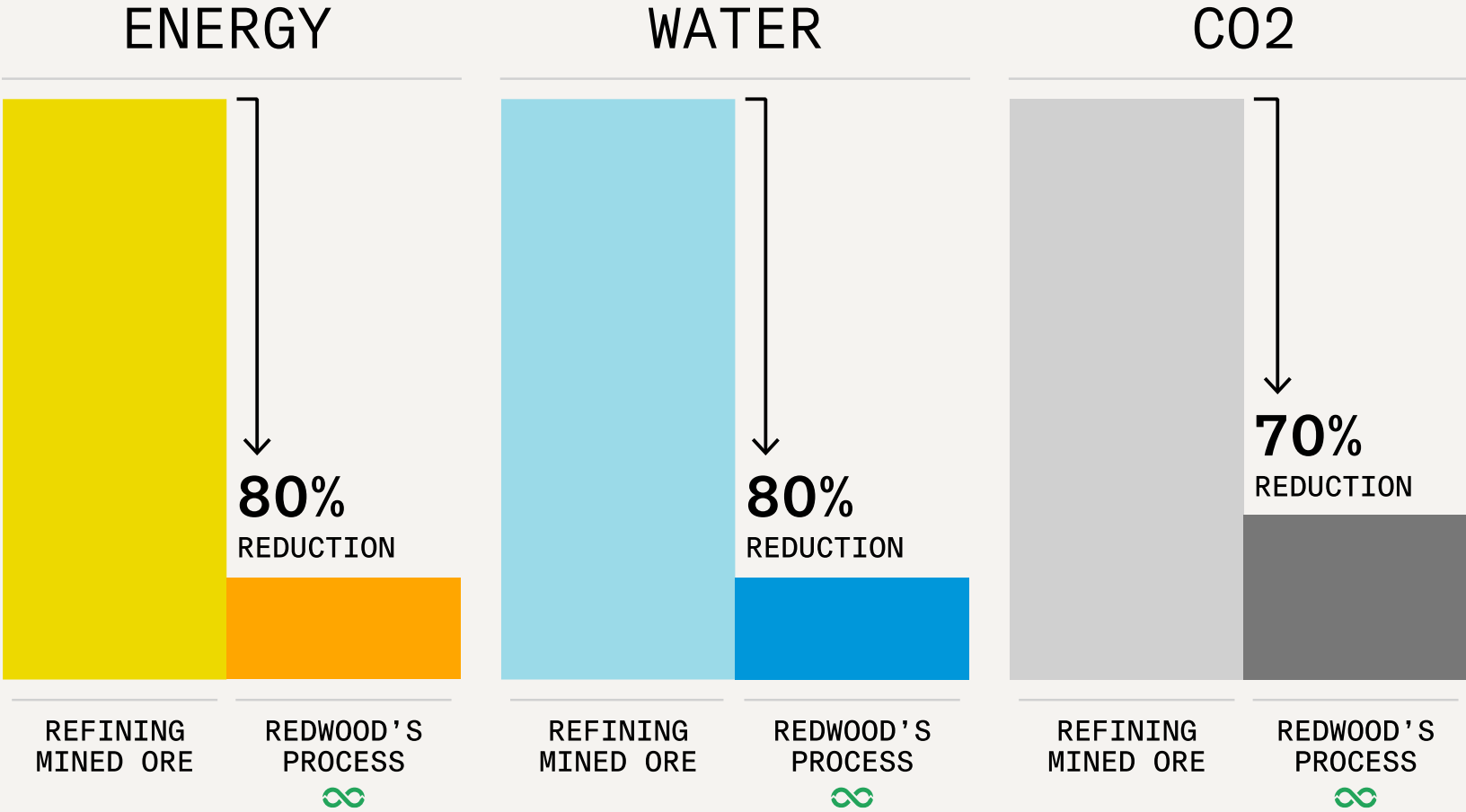
Reduce the environmental impact of batteries



Stanford
Life Cycle Analysis

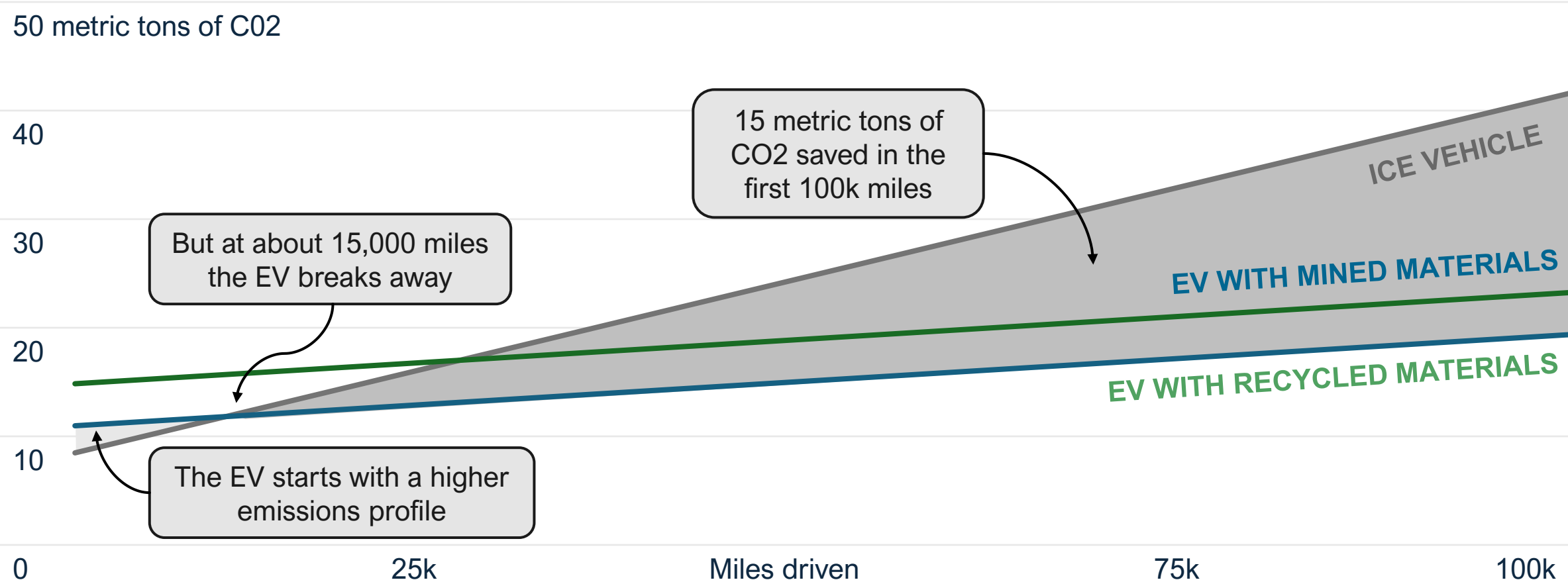
03

RESOURCE CONSUMPTION AND EMISSIONS REFINING MINED ORE VS. RECYCLING AND REFINING BATTERIES

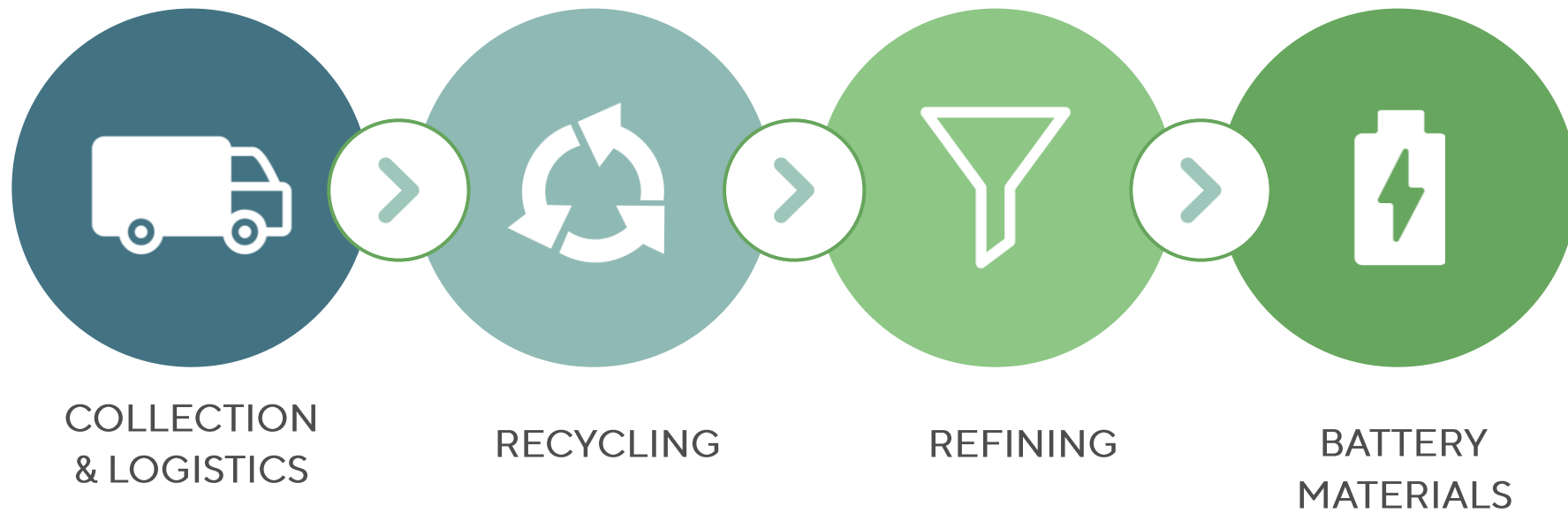


Source: Stanford University Precourt Institute of Energy

EVs with recycled materials pay back upfront emissions in 15,000 miles



INCREASING BATTERY MATERIALS SUPPLY THROUGH CLOSED LOOP PROCESS



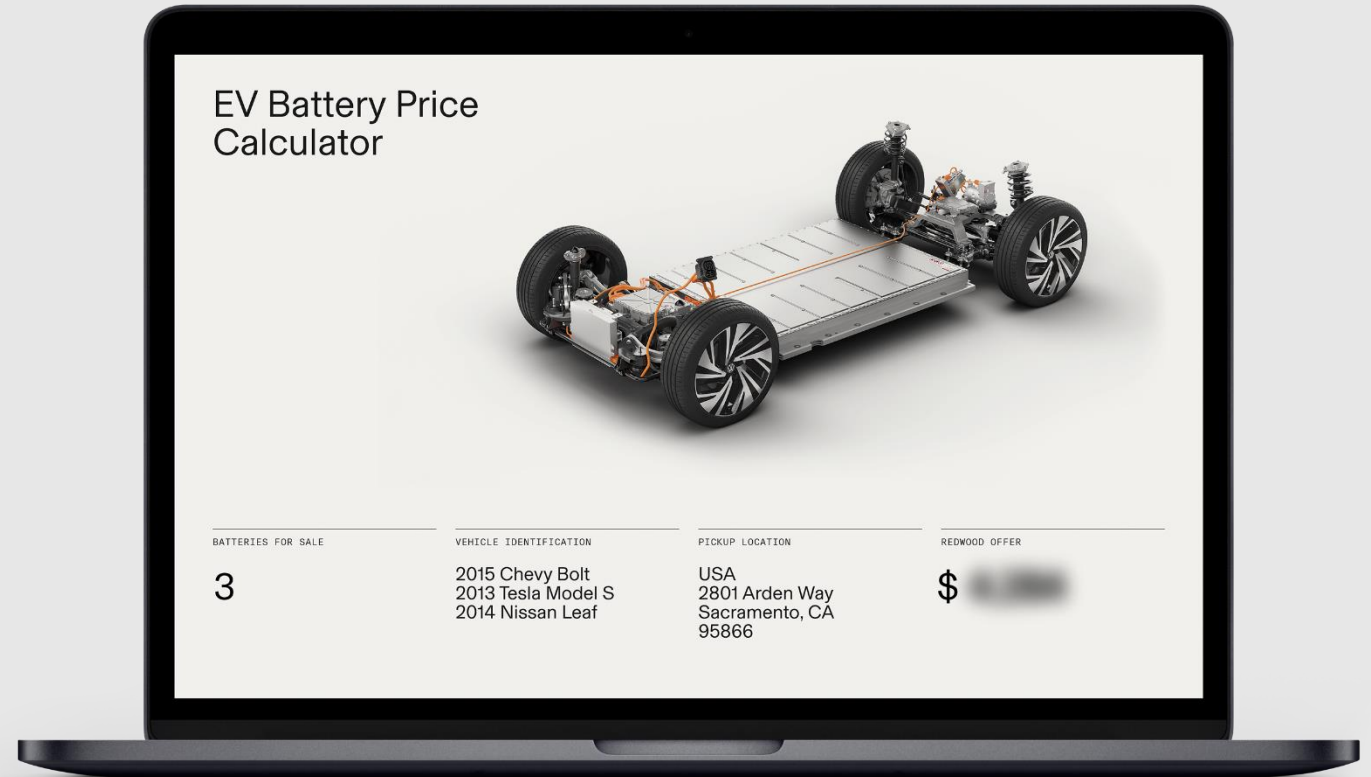
Auto Dismantler Portal

Launched the first transparent online battery valuation tool for auto dismantlers to quickly identify, value, and sell end-of-life EV and hybrid vehicles' battery packs to Redwood.

<https://www.redwoodmaterials.com/auto-recyclers-battery-portal/>

Auto recycling in the US:

- Cars are the most recycled item in the US, with around 12 million vehicles recycled each year.
- The US has more than 9,000 automotive recycling locations
- Auto recycling employs over 140,000 people in the US
- Auto recycling generates \$32B in sales annually.



Thank you!

Tricia@redwoodmaterials.com