Circular minerals economy

TRANSITIONING TO RENEWABLE ENERGY WITHOUT INCREASED MINING

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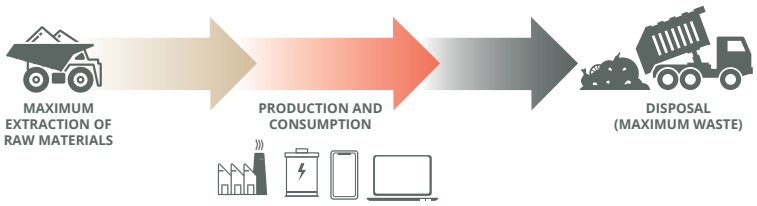
EARTHWORKS

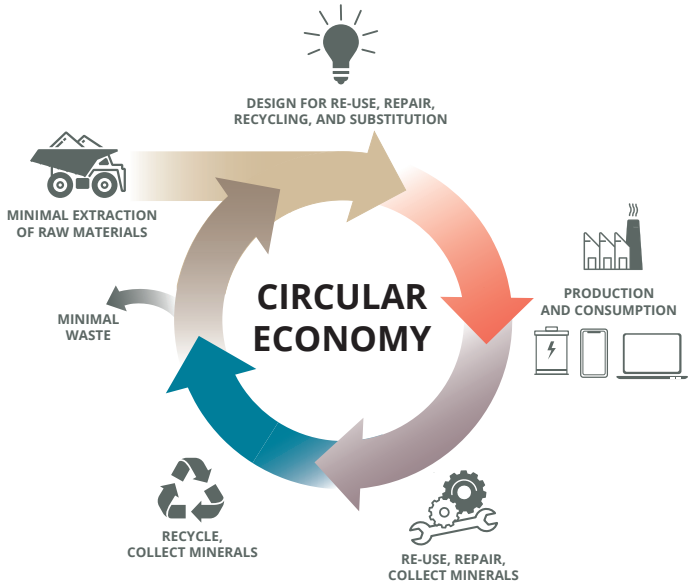
Circular vs. Linear Economy

The global economy currently operates under a linear model, where all materials are extracted, consumed, and then disposed of. In linear economies, products are designed to be used once and then removed from the economy, which puts strain on communities on the frontlines of extraction and disposal. In a circular economy, products, materials and resources stay in use for as long as possible—minimizing waste, energy consumption, and materials extracted. Moving from a linear economy, where some communities are considered expendable, to a circular one, where no one is sacrificed, is crucial for a truly just transition.

LINEAR ECONOMY



- **Purposely uses products, resources, and materials temporarily.**
- **Produces maximum waste and minimizes length of product use.**
- **Constantly increases demand for new extraction, incessantly harming communities on the frontlines of mining and other extraction.**

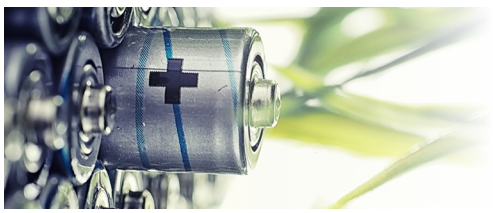


- **Reduces overall mineral demand.**
- **Minimizes waste and energy consumption.**
- **Maximizes length of product, material, and resource use.**
- **Helps protect communities living near mineral deposits by minimizing the need for more extraction.**

MAIN FOCUS AREAS OF CIRCULAR ECONOMY POLICIES:

1. Recycling, reusing, and substituting minerals, needed for renewable energy technologies.
2. Reducing overall mineral demand, especially in Global North countries.

We must pursue both at the same time.



THE POWER OF RECYCLING MINERALS

Recycling has the potential to reduce primary mineral demand compared to total demand in 2040, by approximately 25% for lithium, 35% for cobalt and nickel, and 55% for copper, based on projected demand.

DRC Congo mine by Gwenn Dubourthoumieu

Circular Economy Policy Examples

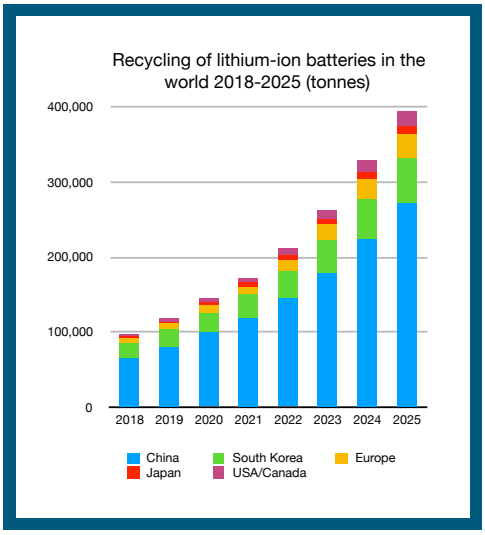
These examples incorporate both recycling, reusing, and substituting battery minerals, *and* reducing overall mineral demand.

SUCCESSFUL POLICIES

- South Korea was rated "one of the world's best recycling economies" by MIT's Green Future Index 2022.
- After a 2010 trade dispute with China, Japan developed an impressive urban mining and recycling system for rare earth elements.
- The European Union is developing a Battery Directive to ensure battery minerals are sustainably sourced and to increase battery minerals recycling.
- Paris decreased car travel by almost 50% in 30 years by investing in other modes of transportation and traffic control strategies.

U.S. POLICY OPTIONS

- Stop funding mining subsidies, and instead fund infrastructure for the collection, take-back, recycling, and reuse of minerals.
- Invest in accessible public transit and pedestrian infrastructure to reduce car dependency. There are 0.91 cars per person in the U.S., with over 290 million cars across the country—a huge opportunity for resource consumption reduction.
- Pass legislation guaranteeing the Right to Repair like the EU is planning on doing.



Source: Circular Energy Storage

Recycling technology can already achieve 95% recovery of minerals.

Source: Redwood Materials

Read the Battery Mineral Sourcing Report

Reducing new mining for electric vehicle battery metals: responsible sourcing through demand reduction strategies and recycling

Earthworks

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Learn more about mining and the energy transition