# **SOLAR** PRO. The lithium battery boom has passed

# Why is there a lithium ion battery shortage?

Two factors are behind the expected shortfall. First, the amount of lithium extracted from deposits around the world is projected to fall well short of demand. Second, the capacity for refining the mineral into the chemicals used in lithium-ion batteries is heavily concentrated in a handful of countries.

### What is the 'battery boom'?

In this first instalment of a series on the global battery value chain,SOMO exposes,in 14 visuals,the phenomenal growth in battery productionpredicted by 2031. This 'battery boom' raises serious questions about the scale of mineral consumption,where these raw materials are coming from and - critically - who is consuming them.

### Are batteries causing a transport transition?

But the rising demand for batteries to power these vehicles threatens to lead us into a transport transition that is devastating for the environment and for the human rights of millions of people due to the massive surge in mining of the minerals needed for batteries.

# Can lithium batteries be recycled?

The industrial recycling of batteries now in operation is focused on the circularity of cobalt and nickel. The recovery of lithium from LIBs is currently facing commercial and technological barriers to being profitable, which require sustainable investment and policy incentives.

### Why do we need a 'battery boom'?

This 'battery boom' raises serious questions about the scale of mineral consumption, where these raw materials are coming from and - critically - who is consuming them. We need a far-reaching energy transition to tackle the climate crisis.

### Why is lithium so important?

A vital component in rechargeable batteries, lithium has been thrust into the global spotlight as one of the world's most important commodities. The boom and bust of the past three years has exposed a once-niche and tiny market that is evolving and adjusting in real time to the unprecedented roll-out of electric vehicles across the globe.

A stuttering recovery in lithium prices is providing a fresh reminder of why the dramatic rally of recent years was followed by an even more breathtaking collapse: a fast-expanding industry that is more prepared than ever to keep pumping out supplies.

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Lithium Gold Rush Fueling the EV Boom. Lithium, often called "white gold," is the backbone of the global push toward electrification. Its role in powering lithium-ion batteries makes it indispensable in EVs, consumer electronics, and renewable energy storage systems. In 2023, vehicles accounted for 80% of lithium-ion battery demand, a figure expected to rise significantly as EV ...

Growing demand for the lithium used in batteries for electric vehicles and energy storage has created a new frontier for mining in Nigeria. But it's led to exploitation of children who are often poor and take work in small, illegal ...

In April 2022, prices of NCM and LFP prismatic electric vehicle (EV) battery cells reached \$130/kWh and \$120/kWh, respectively, 30% and 50% higher than their pre-surge ...

This is not the first time that lithium price has skyrocketed. Starting from September 2015, the spot lithium carbonate price in China shot up from \$9,000/ton to \$30,000/ton at the highest, remained between \$20,000/ton to \$30,000/ton until May 2018, and then kept going down until August 2020, reaching a basin of \$6,000 (Figure 1).A common driver is behind the ...

The global market for lithium-ion batteries is expected to remain oversupplied through 2028, pushing prices downward, as lower electric vehicle production targets in the ...

In April 2022, prices of NCM and LFP prismatic electric vehicle (EV) battery cells reached \$130/kWh and \$120/kWh, respectively, 30% and 50% higher than their pre-surge levels. To respond, many EV companies inflated retail prices, typically by 3%-5%, or even discontinued the sales of low-profit EV models, e.g., the Great Wall Ora.

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There is now too much lithium supply and too much battery capacity relative to consumer demand for electric vehicles. The slowdown could easily reverse. One critical facilitator will be the...

The rapid growth of Li-ion batteries production is largely driven by the increasing demand for EVs in China, Europe and the United States. Analysts estimate that EVs will account for around 90% of Li-ion battery demand during the next 20 ...

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American Battery Factory announced a \$1.2 billion investment to build a lithium battery gigafactory in Tucson, which the company projects will create 1,000 new jobs. Cirba Solutions announced it would build a new lithium-ion battery recycling facility in Eloy, citing new incentives from the cleanenergy plan.

"In domestic settings, a single malfunctioning device can lead to a fire that might destroy an entire building," Winckler said. For instance, Axa UK"s claims data for 2022, published 18 August 2022, indicated that lithium-ion fires most commonly occurred in residential buildings. The data revealed that one large claim involved a faulty e-scooter battery that, while being ...

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Due to shortages of critical materials and vulnerable supply chains, production of lithium-ion batteries could fall far short of demand. Coordinated action is needed to boost supply in a sustainable way and keep the transition to renewable energy on course.

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