How can utilities navigate the imminent battery wave?

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How can utilities navigate the imminent battery wave?

It's crucial for utilities to get accurate information about energy storage technology and the complex dynamics at work in the battery market. In the current market, there are supply chain issues, material shortages, and manufacturing limitations, all of which drive uncertainty. And demand for batteries is skyrocketing.

But how are utilities supposed to accurately plan resources in this tumultuous market without appropriate market intelligence? You can't risk making assumptions in your forecasts. Predictions need to be grounded in data so you can effectively prepare for what's ahead.

A battery costs how much?

The battery industry is growing rapidly and is driven by three main factors.

First, demand for batteries from the EV industry doubled in 2021. We expect 2022 to be the first year with more than 1 million EVs sold in the US (**figure 1**). But we don't expect EV growth distribution to be equal across every state. For example, California will reach 60% penetration rate by 2031, while other states such as Texas will be below 25%.

Figure 1: Forecast of EV sales and EV penetration in the US

The penetration rate of new EVs versus all new cars will rise from 2% in 2021 to 14% in 2025 to 45% in 2031.

Second, demand for stationary storage batteries in the US will more than triple in 2022. E Source battery analysts expect over 17 gigawatt-hours of batteries will be installed in front-of-the-meter applications this year.

Third, there's a huge wave of demand being added to the existing demand for batteries. Sam Jaffe, vice president of Battery Solutions at E Source, spoke about this "tsunami of demand" in the

CNBC article EV battery costs could spike 22% by 2026 as raw material shortages drag on.

All this will likely lead to soaring battery prices over the next 10 years. Learn more by joining our upcoming webinar on July 19—A battery costs how much? Understanding battery pricing with the E Source Battery Cost Model.

Register for the webinar

Can the market keep up with demand for batteries?

The demand for batteries is skyrocketing, but players along the battery supply chain, from mining companies to battery manufacturers, are struggling to keep up. And there's pressure to rapidly expand:

- Raw material mining
- Battery component production
- Cell production capacity

Our research shows that the battery industry will consume 385 kilotons (kt) of lithium carbonate equivalent (LCE) in 2022 and 2,553 kt of LCE in 2031 (**figure 2**). The automotive industry alone will account for 76% of the total LCE demand in 2022 and 67% in 2031. We expect 2023 to be the first year that LCE demand from the battery industry will exceed the total 2021 global LCE production.

Figure 2: Lithium forecast

After this year, we expect LCE demand to exceed supply.

The race to produce more LCE has already begun, but a massive wave of investment in lithium mining is needed to avoid a mid-decade price spike.

Battery manufacturers and battery input material producers are attempting to expand their capacity to keep up with increased demand. Our exclusive gigafactory tracker shows where and when new battery capacity is coming online. If manufacturers fail, increased battery prices will delay the mass adoption of EVs and stationary storage systems.

Learn more about the environmental impacts, production methods, and second-use ideas for batteries in episode 5 of the E Source podcast PowerTalking.

Listen to the podcast episode

How can E Source help you track the battery market?

E Source Battery Next is designed to help utilities understand what's ahead for batteries in pricing, technology, and market development. Battery Next brings together our data and analyses to provide you with the critical information you need for modeling inputs, long-term planning of stationary energy storage, and assumptions for EV forecasting. With Battery Next you can:

- Incorporate our data and analyses into your long-term resource forecasts
- Negotiate a power purchase agreement with an independent power producer

- Compare pricing and ensure ROI for direct purchase of batteries

Our analysts update over 200,000 datapoints every quarter to give you a detailed picture of the evolving battery industry. Schedule a conversation with an E Source battery expert to learn more about a Battery Next membership and to discuss new technologies, market dynamics, cost projections, and more.

Schedule a conversation with an E Source battery expert

You can also check out our blog post Navigating the unknowns of the battery market through forecasting to learn more about what Battery Next can do you.

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