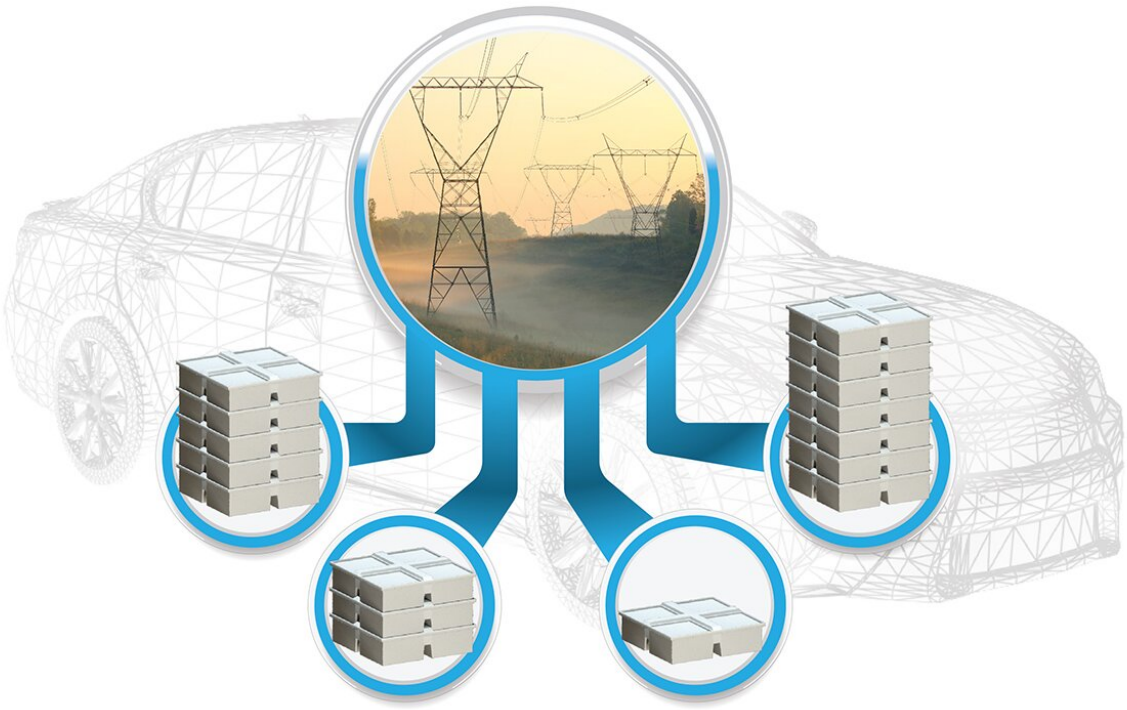
Reused car batteries rev up electric grid

February 16 2023



ORNL researchers have developed a way to manage car batteries of different types and sizes as energy storage for the power grid. Credit: Andy Sproles/ORNL, U.S. Dept. of Energy

When aging vehicle batteries lack the juice to power your car anymore, they may still hold energy. Yet it's tough to find new uses for lithium-ion batteries with different makers, ages and sizes. A solution is urgently needed because battery recycling options are scarce.

Researchers at Oak Ridge National Laboratory have developed a new technology enabling battery reuse: a type of power electronics equipment that can manage a variety of EV batteries as an energy storage system for an electric utility.

The mix of batteries can be controlled to release a predetermined amount of electricity to the grid. "We have each battery pack discharging at a different rate, while ensuring that the target energy output stays the same," said ORNL's Michael Starke.

When electricity demand spikes, utilities can use this stored energy instead of burning fossil fuels at "peaking" plants. The approach can reduce pollution, prolong the usefulness of EV batteries and make electricity service more reliable, at almost no cost.

The paper is published in the *2022 IEEE Electrical Energy Storage Application and Technologies Conference (EESAT)* proceedings.

More information: Michael Starke et al, An Intelligent Power Electronic System for Secondary Use Batteries, *2022 IEEE Electrical Energy Storage Application and Technologies Conference (EESAT)* (2022). DOI: 10.1109/EESAT55007.2022.9998039

Provided by Oak Ridge National Laboratory