

ENERGY STORAGE GROUP



Turning the CAR OF THE FUTURE



into the CAR OF NOW

The Problem

A limiting factor of any electric vehicle is the battery's performance. How far can the car go on one charge? How long will the battery last before it needs to be replaced? Can manufacturer claims be trusted?

The Solution

The Energy Storage Group within INL's Advanced Transportation division uses the Battery Test Center to run the experiments that help improve battery performance.

GENUINE QUALITY



TESTING BATTERIES IN R&D STAGES MAY TAKE ONLY MONTHS, WHILE TESTING COMMERCIAL BATTERIES CAN TAKE 10 YEARS OR MORE!

The two main goals of the Energy Storage Group are to increase consumer confidence and to enhance market share for electric vehicles.

Energy Storage Group researchers determine how batteries will age to help reduce costs and improve performance.

>SEVEN HUNDRED

THAT'S THE NUMBER OF CHANNELS AVAILABLE TO TEST EVERYTHING FROM WATCH-SIZED BATTERIES TO FULL-SIZED VEHICLE BATTERY PACKS

American consumers are the top priority, as the Energy Storage Group strives to ensure quality, independent testing at all times.

What's in your battery?

When cellphones ring, flashlights light up and cars start, it's all because the electrolytes inside the battery allow ions to travel across, creating an electric charge. Everyday batteries might be charged by zinc and carbon, zinc and magnesium dioxide, lead-acid, lithium ions, or many other electrolyte combinations. But some electrolytes are more effective than others.

Electrolytes • Charge • Cathode • Anode • Energy

30
Zn
Zinc

3
Li
Lithium

27
Co
Cobalt

14
Si
Silicon

82
Pb
Lead

6
C
Carbon

Energy Storage Group research seeks to determine which electrolyte combinations will be most effective in different types of batteries. First, teams synthesize electrolytes to form new combinations. Then, they perform comprehensive testing on each combination to measure various characteristics, including different thermal and physical properties.

1 The large facility provides consistent, quality testing to help ensure batteries meet manufacturers' standards and consumers' needs.

2 With their extensive knowledge of energy storage systems, Energy Storage Group researchers can help manufacturers improve their batteries and lower costs.

Which is all why...

The Energy Storage Group serves as a Department of Energy core capability for independent, third-party battery testing.

