Southwest Research Institute® (SwRI®) formed the Energy Storage System Evaluation and Safety (EssEs) Consortium in May 2011. The second phase, EssEs-II, is active from December 2015 through December 2019.

A U.S. federal mandate issued on August 28, 2012, and enforced by the National Highway Traffic Safety Administration (NHTSA) requires OEMs to increase Corporate Average Fuel Economy (CAFE) to 54.5 mpg by 2025. The legislation is intended to expedite the implementation of hybrid electric vehicles and plug-in hybrid electric vehicles in the U.S. market. The key component to the success and acceptance of these technologies is the production of safe, reliable, and cost-effective energy storage systems.

**Project Content**

The consortium provides data on performance, abuse, cycle life, calendar life, and consistency of manufacturing tests for consortium member-selected sets of battery cells in a third-party laboratory format. SwRI conducts testing based on the recommended practices of SAE J2464, UN 38.3, DOT battery testing standards, ANSI C18, IEC, USABC and the DOE Battery Test Manual for plug-in hybrid electric vehicles.

**Consortium Goals**

The mission of the SwRI ESSES Consortium is to enhance cell- and pack-level understanding to improve design and control of energy storage systems by:

- Generating benchmark data of xEVs and commercial products
- Developing precompetitive detailed cell-level test data on currently available electrochemical storage systems
- Performing research to advance prognostic, diagnostic, and testing methodologies
Basic Vehicle Benchmarking
Each year, the consortium acquires one xEV or a battery product and disassembles the battery pack after conducting a basic vehicle benchmark test. Typical benchmark testing gives results for operation voltage, temperatures, and currents of the battery pack and some e-powertrain components. Vehicle performance is evaluated on a test track and one duty cycle on a chassis dynamometer.

Topical Research
Members vote on one research topic per year to enhance understanding of behavior of cells and pack for safety, performance, and durability. Members receive royalty-free use of the patents generated in the consortium.

Price and Deliverables
- Annual membership $75,000
- Semi-annual review meetings of participants
- FTP secure vault access to test data
- Monthly progress reports
- Annual reports
- Conference summary
- Guest speakers
- Comprehensive test results for
  - Cell benchmarking (two cells)
  - Basic vehicle benchmarking (one vehicle)
  - Topical research
  - SwRI internal research

We welcome your inquiries.
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