



About EcoCAR EV Challenge:

The EcoCAR EV Challenge is a four-year collegiate automotive engineering competition, providing an unparalleled, hands-on educational experience that transforms the traditional classroom into a hub of automotive innovation. The EcoCAR EV Challenge builds upon a proud 35+ year history of the United States Department of Energy's (DOE) Advanced Vehicle Technology Competitions (AVTCs). The EV Challenge challenges North American universities to engineer a next-generation battery electric vehicle (BEV) that utilizes automation and vehicle-to-everything (V2X) connectivity to implement energy-efficient and customer-pleasing features while meeting the decarbonization needs of the automotive industry.

General Motors has provided each team with a 2023 Cadillac LYRIQ where teams will demonstrate the potential of advanced propulsion systems, connected and automated vehicle (CAV) technologies, and other innovative technologies to analyze energy efficiency. Teams will refine advanced powertrains along with charging and thermal systems to use grid electricity intelligently.

Mission:

Create a pipeline for workforce development and future automotive engineers to help maintain a competitive edge for the U.S. in the global automotive marketplace.

Vision:

EcoCAR provides hands-on, real-world experience in STEM education that prepares students for future careers, develops a diverse clean energy workforce, and gives students access to industry tools and training.

Goals:

- 1. Identify and address specific equity and electrification challenges** in the future of mobility through the application of innovative hardware and software solutions.
- 2. Establish and maintain effective relationships with team-selected customers** to guide design decisions and implementation throughout the vehicle development process.

Current Teams:

- Embry-Riddle Aeronautical University/Bethune-Cookman University
- Georgia Institute of Technology
- Illinois Institute of Technology
- McMaster University – Canada
- Mississippi State University
- The Ohio State University/Wilberforce University
- University of Alabama
- University of California, Davis
- University of California, Riverside
- University of Texas, Austin
- University of Waterloo – Canada
- Virginia Tech
- West Virginia University

About EcoCAR EV Challenge:

EcoCAR EV Challenge builds on the successful 35+ year history of DOE's Advanced Vehicle Technology Competitions (AVTCs) that exemplify the power of government/industry partnerships in addressing our nation's toughest energy and mobility challenges and providing invaluable practical skills of promising young minds ready to enter the workforce.

The EcoCAR EV Challenge is managed by Argonne National Laboratory and sponsored by the U.S. Department of Energy, General Motors, and MathWorks as the headlining sponsors.

General Motors provided a Cadillac LYRIQ – the brand's first all-electric vehicle built on GM's Ultium Platform – that encompasses a common set of propulsion components – battery cells, modules, packs and a family for Ultium Drive units. GM also provides vehicle components, seed money, technical mentoring and operational support.

A foundational principle of EcoCAR is the use of Model-Based Design, a mathematical and visual design approach using MATLAB and Simulink that enables users to manage projects quickly and cost-effectively, collaborate on designs, and develop complex embedded systems. MathWorks provides teams with a full suite of software tools, simulation models, training, technical mentoring and operational support.

The U.S. Department of Energy and its research and development facility, Argonne National Laboratory, provide competition management, team evaluation and logistical support. Other sponsors provide hardware, software and training.

About Advanced Vehicle Technology Competitions (AVTCs):

Established in 1988 by the U.S. Department of Energy and Argonne National Laboratory in partnership with North America's automotive industry, (AVTCs) are North America's premier collegiate automotive engineering competitions and DOE's flagship workforce development program for future automotive engineers.

AVTCs engage students from kindergarten through higher education, creating a pipeline that both encourages students to pursue careers in science, technology, engineering, and math (STEM) and has seeded more than 30,000 graduates in industry, helping to build the diverse workforce needed for the U.S. to be competitive in the global marketplace.

Media Contact:

Kimberly DeClark, Argonne National Laboratory, kdeclark@anl.gov, 202.441.0096