



Simulator Makes Green Racing Real

Ever want to drive a race car? Now you can, with Argonne's Green Racing Simulator. Working with the American LeMans Series (ALMS), and developed by transportation researchers Danny Bocci and Forrest Jehlik, the simulator allows a person to have a racetrack experience with a difference—the simulated race car uses green transportation technologies.

How the Simulator Works

The racing simulator uses a gaming system and a computer to display Green Racing in action. The simulator is based upon the recently released game Gran Turismo 5 for the Playstation 3, with additional computers wrapping around every aspect of the game to provide the true green technology experience to the driver. While driving, the computer also monitors the racer's every move to measure how green and how fast they really are.

"This simulation is a great way to teach folks about sustainable racing in a way they'll remember. Hopefully, this experience will be a takeaway that will influence their transportation decisions in the future," said Bocci.

The simulator has graphics to display the race car's speed, indicators of when the hybrid system is using regenerative braking and boost, a "Hybrid Energy" gauge to show the amount of energy stored and available, and additional gauges to display the amount of nonrenewable petroleum that is being consumed.

The simulator also imitates the way hybrid powertrains use regenerative braking, which stores some of the energy from braking to be used later. "As the racer applies the brakes, kinetic energy is stored and reused when the driver presses a button on the steering wheel to increase the race car's acceleration until all of the energy is depleted," said Forrest Jehlik.



Argonne's Green Racing Simulator Trailer Exhibit

Using real race engine data, the simulator also calculates the amount of petroleum fuel consumed for both E85 and race fuel, and uses the MICHELIN® GREEN X® Challenge criteria to calculate the "green" scores for driving based on how much petroleum the driver saves using the hybrid system. The score is flashed on the final screen after the race is complete, the lowest score being the winner.

The Green Racing Simulator Trailer Exhibit

Look out, because the Green Racing Simulator will be visiting a racetrack near you in an exciting trailer exhibit. Experience the simulator, learn about green racing, and receive a customized lanyard of your experience imprinted with your name and best race time.

The Green Racing Simulator and Green Racing Simulator Trailer Exhibit are part of Argonne's educational outreach effort to consumers, teaching about green vehicle technologies and aiming to promote the reduction of petroleum use in the U.S.

Funding for simulator work is being provided by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy, Vehicle Technologies Program under the direction of Lee Slezak.

The trailer is supported by both the U.S. Department of Energy and the U.S. Environmental Protection Agency.

Learn more about Argonne's Green Racing efforts at www.transportation.anl.gov/green_racing/.



At the 2011 Lime Rock ALMS - The Green Racing Simulator draws fans!



Racers seated at the simulators compete for the best race time.



With its doors closed, the trailer presents a dramatic image on the highway.