

MotorWeek Transcripts

AutoWorld 'Eco-Car Student Competition'

JOHN DAVIS: Automotive technology is evolving at a dizzying pace, and training the next generation of car engineers is no longer confined to traditional classrooms and textbooks. Real-world, hands-on experience is crucial and that's why collegiate engineering competitions like the EcoCar Challenge are more important than ever before. The 2010 finals have just ended and we were proud to take part in the judging, so let's tally up the results.

EcoCar is a 3-year competition in which 16 North American college teams were challenged to improve the emissions and fuel economy of a compact GM crossover vehicle while retaining all of its utility, safety and performance.

Teams were allowed to design their own drivetrain architectures, and chosen technologies included full-electrics, plug-in hybrids, fuel cells, and extended range electric vehicles.

STEVEN BOYD : Every team has taken a different approach, and the approaches are unique not only for their talent sets but also for their backgrounds, so some teams have chosen architectures that are maybe more complicated but can have higher paybacks or benefits. And others that are perhaps less challenging, but can offer near-term rewards, or you know a better risk/reward relationship.

DAVIS: After a year of modeling and simulation, teams were given their vehicles for year two, and have worked ever since on implementing their designs. But the students also had to think real-world in terms of packaging their components, fit and finish, drivability and consumer acceptance.

Headline sponsor General Motors provided the vehicles as well as mentoring support for each team, and allowed the competition to mimic its Global Vehicle Design Process, by which GM develops its own prototype vehicles. They also hosted all 16 teams for this year's finals at their Desert proving Grounds near Yuma, Arizona.

KENT HELFRICH, GENERAL MOTORS: All these kids are top-notch engineers already, even before they've graduated. But what we're doing is giving them experience with the latest tools and techniques, plus a very long-term disciplined process that we give to them and their schools so that they can have a three-year experience doing something really big.

DAVIS: Other sponsors donated technical support and the advanced hardware such as battery packs, generators and control systems needed to make their designs a reality. No two cars turned out alike, and many innovative ideas for battery packs, emissions treatment and engine controls have evolved from the competition.

The US Department of Energy pitched in their own expertise and organizational muscle, with engineers from the Argonne National Lab overseeing the competition and utilizing their well-to-wheels analysis model to assess each team's environmental impact.

Judging is conducted after each year of the competition, measuring progress in terms of emissions, economy and component integration, as well as pure performance. No matter what their results, the benefit for the students in terms of knowledge and experience has been incredible.

CONNIE BEZANSON: So today, some of the vehicles haven't made it past the safety tech inspection yet, but they're working on it. But the Collaboration that comes together from having the 16 schools together, and working together that learning experience with representatives of industry and our sponsors, really allows them the opportunity to move forward, even through difficulties.

DAVIS: After a grueling week of testing, Mississippi State University claimed top honors for 2010. Their Biodiesel extended-range electric vehicle achieved fuel economy equivalent to 118 miles per gallon while also achieving the fastest acceleration and autocross times and the cleanest tailpipe emissions. Congratulations also go to Virginia Tech for 2nd place, and Penn State in 3rd position.

But the EcoCar Challenge doesn't end here. Year Three of the competition is when teams must show full component integration in a near-production-ready vehicle. And lessons learned in this classroom will benefit all of us as we look towards a clean driving future!

KRISTEN DE LA ROSA: We're producing the next generation of automotive engineers and this is a very important time right now in that...the automotive industry... they're re-inventing the automobile and they need engineers out in the industry that can come in with that passion for this kind of technology and have this kind of knowledge and hands-on experience.

So, as the vehicles become more electrified, that becomes more and more important, so that's not something you can learn in a textbook.