

Welcome to PHEV News, the latest news and information on Plug-in Hybrid Electric Vehicles program at The Ohio State University, Center for Automotive Research.

The [Center for Automotive Research](#) at [The Ohio State University](#) has launched a new program focused on Plug-in Hybrid Electric Vehicles (PHEVs), Electric Vehicles (EVs) and intelligent charging.



Research activities include:

- **EV/PHEV Batteries**

Aging, life cycle, vehicle energy management and pack integration.

- **Fleet studies**

PHEV conversions.

Data acquisition for modeling and simulation of charging/discharging cycles and vehicle duty cycles.

- **Modeling and simulation**

Energy use in vehicles: policy, economics and effects on the power grid.

- **Peak and off-peak charging**

Analysis of charging/discharging at different times of the day, effects on grid load, economics and overall emissions.

- **Charging via renewable energy**

Effects of charging vehicles via renewable energy. Benefits and barriers for renewable-based charging and opportunities for zero emissions ecosystems.

- **Regulatory issues**

Study the effect of policy on electric vehicles and plug-in hybrid electric vehicles

Why SMART@CAR? Why Now?

By Rich Housh, President and CEO of Juice Technologies, LLC

I'll tell you why. The world has changed – dramatically. In particular, the energy world as we know it, has undergone phenomenal changes in the past decade and even in the past 24 months, just as it did nearly 100 years ago, when electric cars far outnumbered gasoline powered cars in America.

Electric powered cars were actually produced in England and France in the late 1800's. They became very popular in the US and by 1912, approximately 34,000 electric vehicles (EVs) were traveling with an average range of 25-50 miles. Something dramatic happened then, also, to start a “fuel switching” revolution in vehicle transportation. Henry Ford started making internal combustion engine cars that were affordable to the average American. Crude oil was discovered in Texas so gas was cheap, and so were Ford's cars. The rest is history.

Let's take a look at 2008, for a moment, just to assess what types of changes are now happening. Oil is now trading at over \$130 a barrel, and many are predicting that increasing to \$200 a barrel in the not too distant future. Do you know what oil was trading at, per barrel, only eight years ago? Would you believe \$24/barrel? That's an increase of 550% !! Do you know who the largest consumer of oil on the planet is? It's not the US, it's China. According to the Wall Street Journal (05/21/08), China's projected consumption of crude oil, in barrels per day between 2005 and 2015, is 410,000 vs. the US at 171,000. This is dramatic shift from 1990 to 2005 when the US and China were almost the same in consumption per day. Also, India's crude oil usage per day is up sharply in the past five years. We all know what this means. It is a supply and demand issue.

Fasten your seatbelts and start preparing for \$5 a gallon gasoline!! How many people in the US will want an electric car when gas hits \$5 a gallon? I have already got mine on order, and you can bet I will be charging it intelligently, during off-peak hours!

Rich

Founding members

- **The Ohio State University College of Engineering**
- **The Ohio State University Center for Automotive Research**
- **Juice Technologies, LLC**
- **American Electric Power**

The following companies are currently evaluating our request for participation:

Chrysler, Duke Energy, Duquesne Light, Eaton, Ford, General Motors, Honda, Hyundai-Kia, Nissan, PJM, STMicroelectronics, Toyota

News

CAR has been selected to compete in the *EcoCAR* competition

The US Department of Energy, General Motors and Natural Resources Canada announced the 17 teams selected to participate in *EcoCAR: The NeXt Challenge*, a collegiate vehicle engineering competition set to begin in the Fall of 2008. *EcoCAR* will challenge university engineering students across North America to reengineer a Saturn VUE to achieve improved fuel economy and reduced greenhouse gas emissions, while retaining the vehicle's performance and consumer appeal. Students will design and build advanced propulsion solutions that are based on the vehicle categories from the California Air Resources Board (CARB) zero emissions vehicle (ZEV) regulations. They will be encouraged to explore a variety of cutting-edge clean vehicle solutions, including full-function electric, range-extended electric, hybrid, plug-in hybrid and fuel cell technologies. In addition, they will incorporate lightweight materials into the vehicles, improve aerodynamics and utilize alternative fuels such as ethanol, biodiesel and hydrogen. [Read more..](#)

..and yes, it will be a PHEV!

SMART@CAR : meetings and events

Current and prospective partners:

- Representatives from [AEP](#) visited CAR on May 30th to discuss the involvement of AEP in this program.
- Representatives from [Duke Energy](#) visited CAR on June 4th to discuss the involvement of Duke Energy in this program.
- Representatives from [Third Sun](#) visited CAR on June 4th to plan a photovoltaic-based carport to recharge electric vehicles by means of PV energy.
- Representatives from [AEP](#) will visit CAR on June 17th for a facility tour and to plan next steps.

Special sessions on PHEVs and intelligent charging at 2008 IEEE International Conference on Vehicular Electronics and Safety

September 22-24, 2008, Columbus Ohio, USA.

CAR is organizing an invited session on *Plug-in hybrid electric vehicles: technology and control* and a panel discussion on *Plug-in hybrid electric vehicles and the Smart Grid: industry-government-university partnerships*.

The focus of the sessions is on technical and control challenges for the engineering community, both on the vehicle and on the infrastructure side. [Read more..](#)

Contact Information

For additional information and to join the program, please visit [SMART@CAR](#) website or contact:

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