

U.S. Automakers, Argonne Lab, and American Plastics Council Lead Vehicle Recycling Effort

ARGONNE, Ill., Nov. 10 – While recycling one’s vehicle curbside is unlikely to ever become a common household practice, what happens to vehicles at the end of their useful lives has long been an active concern of U.S. automakers, government researchers and private industry.

In conjunction with America Recycles Day, Nov. 15, representatives from all three entities gathered at the U.S. Department of Energy’s Argonne National Laboratory to discuss their vehicle recycling research, accomplishments to date and the Cooperative Research and Development Agreement (CRADA) currently underway.

Today, more than 95 percent of all vehicles in the United States go through a market-driven recycling infrastructure, with no added cost or tax to consumers. More than 75 percent, by weight, of each end-of-life vehicle (ELV) is recycled, and the CRADA team is working to raise that percentage to as close to 100 percent as conceivably possible.

“The U.S. automakers have long taken a proactive stance in vehicle recycling. They continue to work side-by-side with government and private industry to optimally recycle all vehicles, regardless of age, content or origin,” said Bill Gouse, executive director of the United States Council for Automotive Research. “If it’s driven and disposed of here, the vehicle becomes part of the mix – along with a lot of other big disposables, like appliances and building demolition or commercial and industrial waste materials. The USCAR Vehicle Recycling Partnership, Argonne and the American Plastics Council really are taking a national leadership role, addressing the entire lot of shredder residue, regardless of its source. They are working to implement sustainable recycling solutions that keep waste out of landfills, save energy and put materials into reuse.”



USCAR’s Vehicle Recycling Partnership, Argonne National Laboratory and the American Plastics Council demonstrate how plastics in shredder residue can become reusable materials. Here, Jeff Spangenberg, chemical engineer at Argonne National Laboratory, sifts plastic chips ground from shredder residue, that are cleaned and sorted by froth floatation in Argonne’s Pilot Plant.

The CRADA partners are USCAR’s Vehicle Recycling Partnership, which represents DaimlerChrysler Corporation, Ford Motor Company and General Motors Corporation; Argonne National Laboratory; and

the American Plastics Council. They are in the second year of their third CRADA. The first was established in 1991.

Thus far, the CRADA team impact has been broad and diverse and includes:

- Establishing and publishing preferred practices for recycling.
- Establishing efficient fluid removal processes.
- Running a licensed Vehicle Recycling Development Center to establish procedures that optimize materials recovery in vehicle dismantling.
- Researching separation technologies for commingled material streams.
- Initiating efforts targeted at removing substances of concern from shredder residue, regardless of its source.

A plastics sorting Pilot Plant in operation at Argonne is one of the more visible demonstration's of the CRADA team's research in action. "While the CRADA team is benchmarking and evaluating a range of technology options for sustainable recycling of ELV, the facility at Argonne serves as a focal point for the team's work," said Ed Daniels, director, Energy Systems Division at Argonne and head of the vehicle recycling research effort at the Lab.

The team also is working to anticipate and meet the recycling needs for components and parts in future and emerging vehicles such as hybrids and fuel cell vehicles.

"With energy issues at the forefront, lightweighting and the use of composite materials are becoming more commonplace in vehicle content," said Jim Kolb, head of the Automotive Learning Center, American Plastics Council. "As a result, solving the issues surrounding end-of-life for present and future materials becomes all that more important."

The research is funded by the vehicle Recycling Partnership, the American Plastics Council and U.S. DOE Office of FreedomCAR and Vehicle Technologies.



USCAR's Vehicle Recycling Partnership, Argonne National Laboratory and the American Plastics Council demonstrate how plastics in shredder residue can become reusable materials. Joe Pomykala, senior scientific associate at Argonne National Laboratory, loads shredder residue into mechanical separation machinery -- the first step in creating reusable materials from the waste.

The Vehicle Recycling Partnership is part of the United States Council for Automotive Research, under which DaimlerChrysler Corporation, Ford Motor Company and General Motors cooperatively address shared technological and environmental concerns.

Argonne National Laboratory, operated by The University of Chicago, is one of U.S. Department of Energy's largest research centers; it boasts 1,400 scientists and engineers, over 200 areas of research and an operating budget of more than \$475 million.

The American Plastics Council, a leading trade association of resin producers, advocates unlimited opportunities for plastics and promotes their economic, environmental and societal benefits.