U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Overview of the DOE Health Impacts Research

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Vehicle Technologies Program Mission
To develop more energy efficient and environmentally friendly highway transportation technologies that enable America to use less petroleum.

Health Impacts Research

Goals

- To provide a sound scientific basis underlying any unanticipated potential health hazards associated with the use of new powertrain technologies, fuels and lubricants in transportation vehicles; and
- To ensure that vehicle technologies being developed by the Vehicle Technologies Program for commercialization by industry will not have adverse impacts on human health through exposure to toxic particles, gases, emanation of electromagnetic fields, etc., generated by these new technologies.

Approach

- Focus on characterization of emissions from advanced vehicle technologies to be screened for toxicity.
- In selected cases where possible, determine components responsible for toxicity and engineer solutions to reduce the toxic components.
  - Of special interest are emissions from advanced combustion engines using fuels optimized for new combustion regimes such as HCCI, GDI.
- Apply most accurate measurement methods and tools to characterize the physical and chemical properties of vehicle emissions.
  - If possible, differentiate emissions from various mobile sources (e.g., gasoline-, diesel-, natural gas-fueled and other alternative fuel vehicles).

Projects

- Advanced Collaborative Emissions Study (ACES)
- Measurement and Characterization of Unregulated Emissions from Advanced Technologies
- Collaborative Lubrication Oil Study on Emissions (CLOSE)

Advanced Combustion Engine R&D Budget by Activities

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Major Activities	FY 2009 Appropriation	FY 2010 Appropriation	FY 2011 Request	FY 2012 Request
Advanced Combustion Engine R&D	**$40,800K**	**$57,600K**	**$57,600K**	**49,000K**
Combustion and Emission Control *	35,089	47,239	47,239	40,824
- *Health Impacts*	*1,500*	*1,400*	*1,600*	*TBD*
Solid State Energy Conversion**	4,568	8,748	8,748	6,804
SBIR/STTR	1,143	1,613	1,613	1,372

**Includes Heavy Truck Engine and Health Impacts.*
***Formerly Waste Heat Recovery*