

**FY 2016 Vehicle Technologies Program-Wide
Funding Opportunity Announcement Selections
DE-FOA-0001384**

Applicant	Location (city, state)	Project Title/Description	Federal Cost Share¹
EV Everywhere Plug-In Electric Vehicle Local Showcases (Area of Interest 1)			
American Lung Association of the Upper Midwest	St. Paul, MN	Demonstrate plug-in electric vehicles through local showcases in key markets throughout major metropolitan areas in seven Midwest states - Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, and North Dakota.	\$999,977
Drive Oregon	Portland, OR	Demonstrate plug-in electric vehicles through public ride and drives for a wide variety of PEVs and short term extended test drives in key markets throughout Oregon and Washington.	\$993,450
Plug In America	San Francisco, CA	Promote and demonstrate plug-in electric vehicles through showcases in a variety of venues throughout New England — Rhode Island, Massachusetts, Connecticut and Vermont.	\$500,000
Grid Modernization for Electric Vehicles (Area of Interest 2)			
Electric Power Research Institute, Inc.	Palo Alto, CA	Develop and demonstrate an off-board bi-directional DC charging system for plug-in electric vehicles and evaluate impact of grid services on PEV batteries.	\$1,999,982
United Parcel Service, Inc.	Troy, MI	Develop a high-efficiency, bi-directional wireless charging system for medium-duty plug-in electric delivery vehicles and evaluate impacts on PEV batteries in this use case.	\$1,949,007
Accelerated Development and Deployment of Low-Cost Automotive Mg Sheet Components (Area of Interest 3)			
United States Automotive Materials Partnership LLC	Southfield, MI	Investigate the use of magnesium sheet for vehicle applications while tackling the major challenges of alloying, stamping, joining, and corrosion protection. Magnesium is one of the lightest structural metals available and can reduce the weight of vehicle components by more than 50 percent.	\$5,651,258
Corrosion Protection and Dissimilar Material Joining for Next-Generation Lightweight Vehicles (Area of Interest 4)			
Alcoa Inc.	Alcoa Center, PA	Demonstrate the joining of steel to aluminum and aluminum to carbon fiber reinforced thermoplastic composites using the existing spot welding infrastructure.	\$1,764,331

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PPG Industries, Inc.	Allison Park, PA	Develop new coating and adhesives that enable carbon fiber reinforced thermoplastic/aluminum closure panels and validate corrosion testing methods.	\$2,212,519
Ohio State University	Columbus, OH	Demonstrate vaporizing foil actuator welding as a viable dissimilar metal welding technology for creating multi-material, lightweight vehicles.	\$2,705,670
Advances for the Production of Low-Cost Electric Drive vehicle Motors (Area of Interest 5)			
General Motors LLC	Pontiac, MI	Work with development partners to design and construct both heavy rare earth and entirely rare earth free motor designs using a multi-layered motor rotor design.	\$4,962,060
GE Global Research	Niskayuna, NY	Develop a unique dual structured electrical steel and integrate this material into a 30 kW electric motor designed for electric vehicles.	\$4,999,285
Illinois Institute of Technology	Chicago, IL	Develop a novel non-rare earth permanent magnet motor that uses a rotor powered through a wireless coupling which will rival or exceed the current performance of rare-earth based motor designs.	\$999,752
Iowa State University	Ames, IA	Demonstrate a fast switching non-rare earth permanent magnet motor that can meet current DOE targets by using new hard and soft magnetic materials.	\$3,835,481
Development of Advanced High-Voltage Electrolytes and Additives, Conformable and Self-Healing Solid State Electrolytes, and Lithium Metal Protection (Area of Interest 6)			
University of Pittsburgh	Pittsburgh, PA	Utilize a novel approach to mitigate lithium dendrite formation by designing a composite lithium anode /current collector.	\$1,250,000
Massachusetts Institute of Technology	Cambridge, MA	Conduct fundamental studies of an alkali halide based solid-electrolyte to demonstrate self-healing properties to overcome low cycle life and safety concerns associated with dendrite formation for lithium metal batteries.	\$1,250,000
Rutgers, The State University of New Jersey	Piscataway, NJ	Design a 3-D metal fluoride all solid-state battery that has the potential for extremely high specific and volumetric energy densities (600 Wh/Kg, 1,400 Wh/L).	\$1,077,074 (jointly funded)
Daikin America, Inc.	Decatur, AL	Develop fluorine containing carbonate solvents that will allow existing lithium ion batteries to operating above 4.5 V thereby increasing energy density while maintain performance and safety.	\$1,250,000 (jointly funded)
Penn State University Park	University Park, PA	Develop protective, self-healing layers for lithium metal anodes that will allow high cycling efficiency (> 99.7%) and dendrite-free cycling.	\$1,139,319

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University of Washington, Seattle	Seattle, WA	Design a novel gel electrolyte that possesses a self-healing property to suppress dendrites at the lithium metal electrode and traps polysulfides that are detrimental to Li-S battery cycle life.	\$1,250,000
West Virginia University Research Corporation	Morgantown, WV	Develop solid-state electrolytes that integrate a highly-conductive inorganic nano-fibrous network with a conductive polymer matrix composite to suppress dendrites in lithium-metal batteries.	\$1,244,012
The Research Foundation for the SUNY Stony Brook University	Stony Brook, NY	Investigate lithium-metal batteries with a solid state, self-healing electrolyte/separator with improved electrolyte conductivity and cycling efficiency.	\$1,065,975
University of Maryland	College Park, MD	Design self-healing, 3-D conformal solid state electrolytes to prevent dendrite formation and achieve in high battery cycle life.	\$1,250,000
Development of Advanced Battery Material Characterization Techniques (Area of Interest 7)			
General Motors LLC	Warren, MI	Develop a comprehensive set of diagnostic techniques that enable the understanding of the mechanical/chemical degradation of the solid electrolyte interface layer to improve the performance and cycle life of current lithium ion batteries.	\$1,452,676
University of California - San Diego	La Jolla, CA	Develop advanced microscopy and spectroscopy tools to understand and optimize the oxygen evolution that impacts the performance of current lithium ion cathodes.	\$1,080,000
Advanced Battery Materials Modeling (Area of Interest 8)			
Texas A&M Engineering Experiment Station	College Station, TX	Develop a multiscale modelling approach to study the chemical structures of electrolytes and the solid electrolyte interface layers.	\$1,200,000
University of California - Berkeley	Berkeley, CA	Develop a comprehensive model to identify promising materials candidates for all solid state lithium batteries.	\$891,000
Michigan State University	East Lansing, MI	Develop an electrochemical-mechanical model to design artificially solid electrolyte interface coatings.	\$999,943
Enabling Technologies for Engine and Powertrain Systems (Area of Interest 9)			
Delphi Automotive Systems, LLC	Troy, MI	Develop, build and test a production-feasible electrically-actuated dynamic skip fire cylinder deactivation valvetrain.	\$1,736,338
General Motors LLC	Pontiac, MI	Develop and demonstrate technologies to enable a downsized, boosted, lean, low temperature gasoline combustion engine system	\$1,900,294

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		that improves fuel economy while meeting emissions requirements.	
HRL Laboratories, LLC	Malibu, CA	Develop a scalable, low-cost process to produce the thermal barrier coatings, and apply these coatings on engine components (e.g., valve faces, piston crowns, and exhaust ports) to improve fuel economy.	\$1,400,260 (jointly funded)
Alternative Fuel Vehicle Workplace Safety Programs (Area of Interest 10)			
Gas Technology Institute	Des Plaines, IL	Create training and guidance materials for garage facility upgrades and building modifications for facilities that service natural gas, propane, and hydrogen vehicles.	\$750,000
Marathon Technical Services USA Inc.	Wilmington, DE	Develop a unified reference guide of design requirements, and provide in-person training and tours that showcase best practice garage/maintenance facilities for natural gas, propane, and hydrogen vehicles.	\$750,000
Open Topic/Exploratory Research (Area of Interest 11)			
United Parcel Service, Inc.	Atlanta, GA	Develop advanced solutions for Class 7 and Class 8 heavy-duty vehicles that eliminates or mitigates the negative effects of current diesel exhaust after-treatment equipment systems on dual fuel trucks.	\$998,420
PPG Industries, Inc.	Monroeville, PA	Develop a new silica filler for non-tread tire components that can increase fuel-efficiency by up to 2% while maximizing key performance properties compared to current filler blends.	\$914,771
University of Florida	Gainesville, FL	Develop high temperature, high strength, and lightweight alloys for automotive applications such as internal combustion engines using 3D laser printing.	\$991,873

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