



925.719.2704



anna@buildmomentum.io

## Notice of Funding Opportunity

**Title:** Office of Energy Efficiency and Renewable Energy (EERE), Vehicle Technologies Office (VTO) – Low Greenhouse Gas (GHG) Vehicle Technologies Research, Development, Demonstration and Deployment

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppld=332896>

**Funding:** Total: \$62,750,000. Maximum awards: \$500K-\$4M, depending on project.

**Dates:** Deadline for Concept Papers: May 13, 2021  
Application Submission Deadline: July 12, 2021

**Summary:** Providing better and cleaner mobility options that are affordable for all Americans is the core objective of the Vehicle Technologies Office (VTO). Specifically, this FOA is seeking innovative solutions for on-road and off-road vehicles to develop and accelerate the charging infrastructure and drastically reduced GHG emissions in support of Administration goals. In partnership with industry, VTO has established aggressive targets to focus research, demonstration and deployment on cost-reduction, efficiency, and emissions reduction that improve air quality and improved mobility. The FOA seeks projects across the following areas: electric vehicle community partner demonstration projects; electric vehicle workplace charging projects; RDD&D of technologies to reduce the cost of EV chargers, advanced engines and fuels that reduce emissions, including natural gas, propane, and dimethyl ether; and, innovative solutions for medium/heavy duty on- and off-road vehicles including electrification and high-power charging.

### Project Topic Areas:

#### Topic Area 1: Electric Vehicle Charging Community Partner Projects

The objective of this topic area is to encourage strong local and/or regional partnerships to create an enduring local ecosystem to support increased consumer and business PEV use. Projects are encouraged to demonstrate various PEV applications by concentrating multiple sub-projects in a region or geographic area. Projects for consumers in underserved communities are a high priority. DOE is looking for projects that demonstrate efficient investment and use of charging infrastructure such as innovative charging technology for various settings (e.g., multi-family housing, car sharing, ride hailing, goods delivery). In the medium- and heavy-duty sectors, projects will demonstrate smart charging and business models that improve costs and efficiency for the acquisition and operation of new vehicle models for local governments, utilities, transit, schools, ports, and goods movement.

#### Topic Area 2: Electric Vehicle Workplace Charging

The objective of this area of interest is to develop a nationwide workplace charging program that enables a large-scale increase in workplace charging through employer education and outreach; technical and policy assistance for assessing the demand for, installing, and managing workplace charging; a nationwide employee recognition program for offering workplace charging; and resources to assist employees in advocating for workplace charging. DOE seeks a nationwide workplace charging program that spurs significant private-sector investment in offering Level 1, Level 2, and/or DC fast charging for employees to charge personal-use PEVs at their place of employment and implementing policies to engage employees and other stakeholders.

#### Topic Area 3: Reducing the Cost of DC Fast Charging Equipment

The objective of this topic area is to research, develop, and demonstrate innovative technologies and designs to significantly reduce the cost of Electric Vehicle Supply Equipment (EVSE) for DC Fast Charging that will be required in large numbers to support high volumes of EVs. Projects should aim for cost reduction through targeted R&D efforts that culminate with a site demonstration at charge rates of at least 150 kW. Projects must identify an existing DC fast charge system as a baseline for comparison and propose innovations that could significantly reduce system cost, including grid connection transformers.

#### Topic Area 4a: Research to Transform the Efficiency of Off-Road Vehicles

The objective of the topic area is to research and develop technology concepts capable of significantly decreasing energy use, GHGs, harmful criteria emissions, and total cost of ownership across the entire off-road vehicle sector, including construction, mining, forestry, agriculture, etc. Concepts must demonstrate affordability, durability, and manufacturability to ensure customer acceptance and implementation.

#### Topic Area 4b: Electrified Construction Vehicle Research, Development, and Validation

The objective of this topic area is to research and develop novel electrification technologies, such as electrified propulsion and work implements, designed for improving energy efficiency and dramatically reducing the GHG and criteria emissions of off-road construction equipment.

801 K Street, Suite 2700  
Sacramento CA 95814  
buildmomentum.io



**MOMENTUM**

925.719.2704



anna@buildmomentum.io



Topic Area 5: Natural Gas Engine Enabling Technologies

The objective of this topic area is to research, develop, and validate natural gas engine component technologies that improve the efficiency of engines cost-effectively without increasing the cost of emission control systems for medium- and heavy-duty trucks.

Topic Area 6: Dimethyl Ether and Propane Engine Enabling Technologies

The objective of this topic area is to research, develop, and validate engine component technologies that improve the efficiency of direct injection engines using dimethyl ether, propane, or a blend of the two, cost-effectively and without increasing the cost of emission control systems for light and medium-duty vehicles.

Topic Area 7: Integrated Hybrid System with Opposed Piston 2-Stroke

The objective of this topic area is to demonstrate advanced OP2S technology engine for light-, medium-, or heavy-duty applications with hybridization that significantly improves energy efficiency and reduces emissions over conventional engines in 2025-2030 timeframe. Applications that focus on medium- and heavy-duty trucks are encouraged due to the increased likelihood for adoption in those applications. Although not limited to plug-in hybrid approaches, the increased fuel efficiency and decreased greenhouse gas (GHG) and criteria emissions from a plug-in hybrid approach are encouraged.

Topic Area 8: Natural Gas Vehicle Technology Proof of Concept

The objective of this area of interest is to spur adoption of on-road natural gas vehicles (medium or heavy-duty) in a specific fleet or community where the low emissions from natural gas can provide unique and immediate health benefits. The technical approach must utilize a proof-of-concept demonstration of five or fewer vehicles per fleet, along with supporting infrastructure in local public or private fleet(s), and validate the demonstration's energy, environmental, economic and operational benefits with the purpose of reducing the burden from truck usage in these communities.

**Funding:**

EERE expects to make a total of approximately \$62,750,000 of federal funding available for new awards under this FOA, subject to the availability of appropriated funds. EERE anticipates making approximately 17 to 35 awards under this FOA. EERE may issue one, multiple, or no awards. Individual awards may vary between \$500,000 and \$6,666,667. EERE anticipates making awards that will run from 24 months up to 48 months in length, comprised of one or more budget periods.

Topic Area Number	Anticipated Number of Awards	Anticipated Minimum Award Size for Any One Individual Award (Fed Share)	Anticipated Maximum Award Size for Any One Individual Award (Fed Share)	Approximate Total Federal Funding Available for All Awards	Anticipated Period of Performance (months)	Minimum Cost Share Requirement
1	3-5	\$4,000,000	\$6,666,667	\$20,000,000	36-39	50%
2	1	\$4,000,000	\$4,000,000	\$4,000,000	36	20%
3	2-3	\$3,333,333	\$5,000,000	\$10,000,000	36-48	Phase 1 R&D - 20% Phase 2 Demonstration - 50%
4a	2-3	\$1,500,000	\$2,500,000	\$5,000,000	39	20%
4b	1-2	\$2,500,000	\$5,000,000	\$5,000,000	39	20%
5	1-3	\$1,250,000	\$6,250,000	\$6,250,000	39	20%
6	1-5	\$1,000,000	\$5,000,000	\$5,000,000	24-36	20%
7	1-2	\$2,500,000	\$5,000,000	\$5,000,000	24-36	20%
8	2-5	\$500,000	\$1,250,000	\$2,500,000	36	50%

**Project Requirements:**

Projects must fall into a corresponding topic area within one of the following areas: Electrification, Off-Road Technologies, Fuels Research, Advanced Combustion Engine R&D, and Technology Integration. Applications must include: 1) A Project Overview; 2) A Technical Description; 3) A Market Transformation Plan; 4) A Workplan; 5) A Data Management Plan. The varied requirements and deliverables within each topic must be addressed in the application and the strength of the applicant's discussion will be evaluated by the independent technical review panel for engineering and scientific merit. Teams must include and describe partnership(s) with those appropriately listed within each topic's specific requirements.

**Eligible Applicants:**

The National Energy Technology Laboratory is ineligible to participate as a prime applicant or as a team member/sub-recipient on any application because of its role in developing the requirements for this announcement. This FOA will restrict foreign entities from applying as prime recipients unless they have a U.S. incorporated subsidiary or affiliate with a physical location for business operations in the United States. No waivers will be provided for this restriction.



**MOMENTUM**

925.719.2704



anna@buildmomentum.io



U.S. citizens and lawful permanent residents; State, local, and tribal government entities; Incorporated consortia, which may include domestic and/or foreign entities; For-profit entities, educational institutions, and nonprofits that are incorporated (or otherwise formed) under the laws of a particular state or territory of the United States and have a physical location for business operations in the United States are eligible to apply for funding as a prime recipient or subrecipient. Nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995 are not eligible to apply for funding.

DOE/NNSA FFRDCs and Non-DOE/NNSA FFRDCs; Federal agencies and instrumentalities (other than DOE) are eligible to apply for funding as a subrecipient, but are not eligible to apply as a prime recipient. FFRDC participation as a subrecipient is limited to an aggregate total of  $\leq 25\%$  of total project costs. Other than as provided in the "Individuals" or "Domestic Entities" sections above, all prime recipients receiving funding under this FOA must be incorporated (or otherwise formed) under the laws of a State or territory of the United States and have a physical location for business operations in the United States. If a foreign entity applies for funding as a prime recipient, it must designate in the Full Application a subsidiary or affiliate incorporated (or otherwise formed) under the laws of a State or territory of the United States to be the prime recipient. The Full Application must state the nature of the corporate relationship between the foreign entity and domestic subsidiary or affiliate. A foreign entity may receive funding as a subrecipient. Unincorporated Consortia, which may include domestic and foreign entities, must designate one member of the consortium to serve as the prime recipient/consortium representative. The prime recipient/consortium representative must be incorporated (or otherwise formed) under the laws of a state or territory of the United States.