Notice of Intent No. DE-FOA-0003352

Notice of Intent to Issue
Funding Opportunity Announcement No. DE-FOA-0003344

The Office of Energy Efficiency and Renewable Energy (EERE) intends to issue, on behalf of the Vehicle Technologies Office (VTO), a Funding Opportunity Announcement (FOA) entitled "SuperTruck Charge".

Building a clean and equitable energy economy and addressing the climate crisis as a top priority of the President's Administration. This anticipated FOA will advance the Administration's goals to decarbonize transportation and to "deliver an equitable, clean energy future, and put the United States on a path to achieve net-zero emissions, economy-wide, by no later than 2050 to the benefit of all Americans." The Department of Energy is committed to pushing the frontiers of science and engineering, catalyzing clean energy jobs through research, development, demonstration, and deployment (RDD&D), and ensuring environmental justice and inclusion of underserved communities.

The RDD&D activities will support the government-wide approach to the climate crisis by driving the innovation that can lead to the deployment of clean energy technologies, which are critical for climate protection. As part of the whole-of-government approach to advance equity across the Federal Government, it is the policy of the Biden Administration that:

> The Federal Government should pursue a comprehensive approach to advancing equity for all, including people of color and others who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality. Affirmatively advancing equity, civil rights, racial justice, and equal opportunity is the responsibility of the whole of our government. Because advancing equity requires a systematic approach to embedding fairness in decision-making processes, executive departments, and agencies (agencies) must recognize and work to redress inequities in their policies and programs that serve as barriers to equal opportunity.

The transportation sector represents the largest source of greenhouse gas emissions in the United States, with medium and heavy-duty vehicles (MHDVs) being the second biggest emitting segment in the sector. Currently, MHDVs are responsible for 461 MMT GHG emissions per year, accounting for ~21% of all transportation emissions.[i] MHDVs are also a major source of local air pollutants, including nitrogen oxides and particulate matter, which negatively impact air quality and human health, disproportionally affecting disadvantaged communities located near freight corridors, ports, and distribution centers. The United States recently signed the

---

This is a Notice of Intent (NOI) only. EERE may issue a FOA as described herein, may issue a FOA that is significantly different than the FOA described herein, or EERE may not issue a FOA at all.

Drive to Zero Memorandum of Understanding, which sets the ambition of having 30% of all new MHDV sales be zero emission by 2030 and a full transition to zero emission fleet by 2040.[ii]

Battery and electric traction drive technology has progressed to make battery electric trucks (BETs) a viable option in many applications and a key pathway toward meeting zero emissions goals. These BETs offer significant opportunities for reducing GHG and other harmful emissions as well as fuel costs, a significant portion of the total cost of ownership for trucks. While the utility of the current generation of BETs is limited to relatively short-range applications, next generation BETs (such as those under development in the SuperTruck Charge program[iii]) will have significantly longer ranges and the ability to charge at rates greater than 1 MW. This combination will greatly increase the number of viable routes for BETs and introduce new opportunities for in-route charging. However, the requirement to charge at significantly higher power and more frequently than passenger vehicles, due to battery size and usage profile, creates challenges for buildout of the necessary infrastructure to serve MHDVs. The limited availability of high-power chargers suitable for trucks remains a key barrier to the uptake of BETs. Installation of high-power chargers at major hubs, depots, or public charging installations along corridors can take more than 24 months due to the power levels requested, complicated site selection criteria, need for extensive utility engagement, permitting, and complex utility load service or interconnection processes. Availability of the needed grid components can exacerbate this timeline. Large and highly variable site upgrade costs and uncertain charger utilization rates present a barrier for investment and future-proofing by utilities. From the electrical grid perspective, growth in BETs will require significant infrastructure upgrades along with implementation of intelligent load management strategies to accommodate projected growth that must be planned for carefully to promote grid resiliency and prevent undue costs for ratepayers.

There are various approaches that can mitigate the challenges associated with truck charging and connection with the grid. Vehicle-grid integration (VGI) refers to the end-to-end considerations for connecting vehicles with the electric grid, including aligning the grid's physical infrastructure, regulatory framework, and market design with the charging network; and implementation of standardized connectivity and communication between electric vehicles, the charging infrastructure, and the power grid to enable vehicle charging/discharging while recognizing the capabilities and requirements of the grid. Effective VGI programs can mitigate both peak and net load, reducing the associated impacts to the distribution grid. This can lead to faster energization timelines for truck charging sites, reduced cost of charging for truck owners, and downward pressure on electricity rates for all customers through more efficient use of the grid. Public demonstrations of vehicle-grid integration are critical to the deployment of truck charging infrastructure, as they can build experience in the implementing organizations, expose truck operators to the benefits of controlled and smart charging, and lead to better informed investment in infrastructure.

This is a Notice of Intent (NOI) only. EERE may issue a FOA as described herein, may issue a FOA that is significantly different than the FOA described herein, or EERE may not issue a FOA at all.

The potential FOA my consist of the following Areas of Interest:

Area of Interest Grid-integration of High-Power Infrastructure Charging Solutions for Heavy Duty EVs

This Area of Interest will seek innovative research, development, and demonstration of concepts for delivering high power charging, load management, and delivery of grid services that alleviate grid capacity challenges at a large-scale charging installation for medium duty and heavy-duty (MD/HD) trucks through optimal design of charging infrastructure and operations. This Area of Interest will have two sub-topics, focused on:

> Sub-topic 1: Truck Depots concentrated near hubs, ports, warehouses, and other logistics operations
> Sub-topic 2: Truck Stops/Travel Centers along key freight corridors[iv]

Approaches of interest include, but are not limited to, load sharing, peak shaving, delayed charging, bi-directional power-flow, utilization of on-site distributed energy resources (ex. battery energy storage, solar generation), coordination with other on-site loads, and other approaches that optimize operation and integration with the grid and accelerate deployment timelines. Projects should demonstrate innovative flexible charging capabilities that account for available load capacity and grid conditions while meeting customer needs, showing high utilization, and remaining cost-effective. Successful demonstrations will show potential business models that are replicable across these core segments of the trucking market and show how investments can result in a downward pressure on electricity rates for all customers. Projects should provide evidence to support the interoperability of high-power charging for a wide range of BET makes and models, and provide public data on truck charging profiles, asset utilization, and customer behavior to DOE and other VTO VGI efforts including those supported by national laboratories (i.e., EVs@Scale Consortium and a demonstrations learnings coordinator). Demonstration teams may consist of MHDV OEMs, fleet/depot operators, travel centers, charging equipment OEMs, utilities, local governments, Clean Cities Coalitions, national laboratories, and other relevant partners.

EERE envisions awarding multiple financial assistance awards in the form of cooperative agreements. The estimated period of performance for each award will be approximately 36-48 months.

This Notice of Intent is issued so that interested parties are aware of the EERE's intention to issue this FOA in the near term. All of the information contained in this Notice of Intent is subject to change. EERE will not respond to questions concerning this Notice. If this FOA is released, EERE will provide an avenue for potential Applicants to submit questions.

This is a Notice of Intent (NOI) only. EERE may issue a FOA as described herein, may issue a FOA that is significantly different than the FOA described herein, or EERE may not issue a FOA at all.

It is anticipated that the FOA will be released in June/July 2024 via the EERE eXCHANGE website https://eere-eXCHANGE.energy.gov/. If Applicants wish to receive official notifications and information from EERE regarding this FOA, they should register in EERE eXCHANGE. When the FOA is released, applications will be accepted only through EERE eXCHANGE.

In anticipation of the FOA being released, Applicants are advised to complete the following steps, which are **required** for application submission:

- Register and create an account in EERE eXCHANGE at https://eere-eXCHANGE.energy.gov. This account will allow the user to apply to any open EERE FOAs that are currently in EERE eXCHANGE.

  To access EERE eXCHANGE, potential applicants will be required to have a Login.gov account. As part of the eXCHANGE registration process, new users are directed to create an account in Login.gov. Please note that the email address associated with Login.gov must match the email address associated with the eXCHANGE account. For more information, refer to the Exchange Multi-Factor Authentication (MFA) Quick Guide in the Manuals section of eXCHANGE.

  It is recommended that each organization or business unit, whether acting as a team or a single entity, use only one account as the contact point for each submission. Questions related to the registration process and use of the EERE Exchange website should be submitted to: EERE-eXCHANGESupport@hq.doe.gov

- Register with the System for Award Management (SAM) at https://www.sam.gov. Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in SAM registration. Please update your SAM registration annually. Upon registration, SAM will automatically assign a Unique Entity ID (UEI).

  NOTE: Due to the high demand of UEI requests and SAM registrations, entity legal business name and address validations are taking longer than expected to process. Entities should start the UEI and SAM registration process as soon as possible. If entities have technical difficulties with the UEI validation or SAM registration process, they should utilize the HELP feature on SAM.gov. SAM.gov will work entity service tickets in the order in which they are received and asks that entities not create multiple service tickets for the same request or technical issue. Additional entity validation resources can be found here: GSAFSD Tier 0 Knowledge Base - Validating your Entity.

- Register in FedConnect at https://www.fedconnect.net/. To create an organization account, your organization's SAM MPIN is required. For more information about the SAM MPIN or other registration requirements, review the FedConnect Ready, Set, Go! Guide at

---

This is a Notice of Intent (NOI) only. EERE may issue a FOA as described herein, may issue a FOA that is significantly different than the FOA described herein, or EERE may not issue a FOA at all.

https://www.fedconnect.net/FedConnect/Marketing/Documents/FedConnect_Ready_Set_Go.pdf

- Register in Grants.gov to receive automatic updates when Amendments to a FOA are posted. However, please note that applications will not be accepted through Grants.gov. http://www.grants.gov/. All applications must be submitted through EERE eXCHANGE.

[i] https://www.energy.gov/sites/default/files/2023-01/the-us-national-blueprint-for-transportation-decarbonization.pdf

[ii] https://globaldrivetozero.org/site/wp-content/uploads/2024/02/Signed-Signatories-2024.2.26.pdf

[iii] https://www.energy.gov/articles/doe-announces-nearly-200-million-reduce-emissions-cars-and-trucks

[iv] https://driveelectric.gov/files/zef-corridor-strategy.pdf

This is a Notice of Intent (NOI) only. EERE may issue a FOA as described herein, may issue a FOA that is significantly different than the FOA described herein, or EERE may not issue a FOA at all.