Guidelines for Alternative Fuel Infrastructure Program

Contact Person: Mike Jones, Program Manager
Maryland Energy Administration
1800 Washington Boulevard, Suite 755
Baltimore, MD 21230
TEL: 410-537-4071
FAX: 410-537-4096
Michael.jones1@maryland.gov

ALTERNATIVE FUEL INFRASTRUCTURE PROGRAM GUIDELINES

BACKGROUND

The Role of Alternative Fuel Vehicles in a Sustainable Transportation Sector

The State of Maryland's ("State") transportation infrastructure plays a vital role in the movement of people and goods throughout the region, not only for Maryland residents but also for the larger network of U.S. highways and distribution channels along the East Coast. Maryland's highways and mass transportation systems serve State, regional and national transportation and freight movement interests, and also function as a key element of transportation to and around the Nation's capital.

Volatility in oil supplies worldwide, which affects energy prices throughout the U.S., impacts the security and stability of Maryland's transportation system now and in the years ahead. The mission of this program is to address these critical issues facing Maryland transportation systems to ensure mobility for all State residents, making Maryland an attractive place to live, work, and visit.

The transportation sector is responsible for 32 percent of Maryland's greenhouse gas emissions according to the Maryland Climate Change Commission, and contributes significantly to our ozone air pollution problem. Reducing emissions from this sector is critical to achieving a reduction in greenhouse gas emissions, and meeting state air quality goals. Existing technologies available in the near term will allow us to meet our transportation needs with fewer carbon dioxide emissions, reduced tailpipe emissions, and reduced reliance on petroleum imports.

Alternative fueled vehicles (AFVs) provide a tool that will enable the State to diversify its transportation system. Use of alternative fuels as primary transportation fuels will accomplish the goal of lessening national dependence on foreign oil supplies as well as contribute to increased air quality due to the reduced tailpipe emissions for these sources of propulsion. In addition, alternative fuels can often offer a cheaper alternative on a cost per mile basis than traditional liquid petroleum, thus providing local fleets with a competitive advantage in the market place. Strategic application of these technologies and fuel sources to the transportation sector constitutes good energy policy. The MEA Alternative Fuel Infrastructure Program will increase the alternative refueling infrastructure and allow for greater use of AFVs throughout the State.

I. PROGRAM OVERVIEW

Establishing adequate refilling/charging infrastructure is necessary to address "range anxiety," one of the prime concerns associated with consumer purchasing behavior and the use of AFVs. Range anxiety refers to the hesitancy of a consumer to buy an AFV due

to concern of being stranded without access to refilling/charging infrastructure or being unable to complete a trip given the constraints of the vehicle. This is a particular concern with alternative transportation fuels requiring a discrete refueling infrastructure. Moreover, natural gas, propane, ethanol, and hydrogen vehicles need dedicated pumping stations. Although efforts have been made to provide charging to electric vehicles (EVs) through Level 1 and Level 2 charging stations, charging time can often take several hours. As such, these efforts need to be complemented by additional DC Fast Chargers, which can provide a full charge in a shorter time. This technology neutral grant program is intended to alleviate these range anxiety concerns by increasing the number of alternative fuel refilling/charging stations across the state. These stations are needed to facilitate travel to and through the State and enable the flow of people and goods throughout the region. A technology-neutral program allows fleets and dealers to match vehicle technologies with the appropriate vehicle duty cycle. Furthermore, most fleets will have more than one duty cycle and may require different technologies, thus different refilling/charging infrastructure, to fully optimize their fleets.

II. PROGRAM DESCRIPTION

This program provides grants for the installation in the State of privately run and (preferably) publicly accessible:

- Natural gas refueling stations utilizing fast fill dispensers
- Propane refueling stations
- Ethanol refueling stations
- DC Fast Charging stations
- Hydrogen refueling stations

These guidelines describe eligibility, funding limitations, grant submittal and approval process, and specific information needed in the grant application.

III. TYPE OF GRANT PROGRAM

Grant funds will be awarded on a competitive basis. Each successful applicant will be awarded a grant amount, which is determined as specified in Section VII "Number of Awards and Award Size." A grantee will be reimbursed for eligible costs only after work is completed and all necessary supporting documentation has been submitted to the Maryland Energy Administration (MEA).

IV. ELIGIBILITY

Only businesses are eligible to apply to the Alternative Fuel Infrastructure Program. Each business must be in good standing with the Maryland State Department of Assessments and Taxation.

Regulated utilities, local governments, and state government agencies are not eligible for funding under this program.

Eligible projects must be sited within Maryland, have a fixed location and must be open twenty-four hours a day, seven days a week. While publicly accessible natural gas, propane and hydrogen fueling infrastructure projects are preferred, private fueling infrastructure is also eligible. DC Fast Charger and ethanol projects however are required to be publicly accessible.

Projects must utilize commercially available technologies. Grants will not be awarded to fund research or demonstration projects.

To be considered for award, an applicant must submit a complete application and the proposed project must comply with the requirements outlined in Section X. "Technical Specifications.

V. EVALUATION CRITERIA

The Maryland Alternative Fuel Infrastructure Program Review Team will evaluate and score applications on a scale from 0-100 based on the following criteria:

1. **Estimated annual gallons of petroleum displaced. Applicants should provide and explain their methodology behind the estimates. (up to 20 points)**

2. **Applicant Cost Share. The minimum cost share is 50%. A higher cost share will receive a higher score. (up to 15 points)**

3. **Letters of Support from project partners, including the proposed station's anchor fleets (including volume commitments), property owner's/site hosts etc. Signed letters of *commitment* will receive a higher score. (up to 15 points)**

4. **Innovative technology, concepts, and partnerships. (up to 15 points)**

5. **Geographic distribution of stations within State and in relation to other stations of that same fueling technology. (up to 10 points)**

6. **Ability to complete project during specified time frame. (up to 10 points)**

7. **Thoroughness of signage plan and the operations & maintenance (O&M) plan. (up to 5 points)**

8. **Company's financials, including bonding and insurance. (up to 5 points)**

9. **Experience installing, operating and maintaining AFV refilling/charging stations. (up to 5 points)**

Each applicant should address each of the scoring and award criteria in the grant application.

MEA reserves the right to select applications to allow for geographic and technology diversity and to limit the number of awards given to any applicant submitting multiple applications.

VI. PROGRAM BUDGET

The total amount of funding currently available for this grant program in FY19 is up to $500,000. However, MEA reserves the right to increase or decrease the program budget.

MEA reserves the right to reduce the grant amount specified in a grant agreement to an amount deemed appropriate based on the availability of State funds for the Program. In this event, the Grantee and the MEA Project Manager shall meet to reach agreement on a reduced scope of work commensurate with the level of available funding.

VII. NUMBER OF AWARDS AND AWARD SIZE

Grant awards are for projects to plan, install, and operate AFV refilling/charging station infrastructure in Maryland. Award amounts are based on AFV technology and capped at 50% of AFV refilling/charging station project cost:

	Maximum Grant Award Cap per Station
Propane	$100,000
Ethanol	$35,000
DC Fast Charger	$55,000
Natural Gas	$500,000
Hydrogen	$300,000

VIII. COST SHARE

Each applicant's cost share is required to be **at least 50% of the total project cost**. A larger applicant cost share will be evaluated more favorably.

IX. APPLICATION PROCESS

Each interested party must complete an application and send or deliver***** it along with all required documentation to:

Mr. Mike Jones
Program Manager
Maryland Energy Administration
1800 Washington Boulevard, Suite 755
Baltimore, MD 21230
michael.jones1@maryland.gov

*****Applications submitted by email are preferred. If sending hard copies of the application, the original and four photocopies should be supplied.

All applications must contain the name, mailing address, and email address of a representative able to receive communications related to this program.

Applications can be obtained by contacting MEA or online at:

http://energy.maryland.gov/transportation/Pages/afip.aspx

Completed applications must be received at MEA no later than December 31, 2018 at 5:00 PM EST.

X. TECHNICAL SPECIFICATIONS

Please read these guidelines carefully before applying to the Alternative Fuel Infrastructure Program.

MEA anticipates awarding grant assistance to successful applicants for installation in Maryland of natural gas refilling stations (Compressed Natural Gas (CNG), Liquefied Natural Gas (LNG) refilling stations, combo (CNG/LNG) refilling stations), propane refilling stations, ethanol refilling stations, DC Fast Charging stations and hydrogen refilling stations that meet the specifications described in this section.

1. PROJECT REQUIREMENTS

To be eligible for grant award, a proposed project must be for siting AFV refueling infrastructure at a new or existing station. All stations and equipment must comply with all applicable local permitting and State building, environmental and fire codes. Technology-specific requirements for a proposed project are specified below.

Ethanol (E85 or Intermediate blends-E15 TO E50)

- Ethanol compatible equipment
- Dispenser must be UL or manufacturer approved for high level ethanol blends
- Ethanol compatible hoses
- Label dispenser with all E85/intermediate ethanol blend logos, cautionary and required decals.
- Use nozzle covers indicating E85/intermediate ethanol blends
- Ethanol pumps shall be located under canopy.

Propane

- Installations must follow NFPA 58: Liquefied Petroleum Gas Code
- Minimum flow rate of 8 GGE/min
- Installations must dispense HD5 grade propane
- Public fueling stations must utilize K15 quick connect nozzle technology. This connector is recommended, though not required, for private stations.
- Installations must be able to accommodate multiple vehicle classes.
- While not required, it is recommended that installations generally follow the minimum dispenser specifications developed by the Propane Education & Research Council (PERC), which can be found here.

Natural Gas

- Station must dispense fuel at a minimum rate of 8 gasoline gallon equivalent (GGE) per minute.
- Station must sell natural gas at a pressure of at least 3,600 psi.

- Installations must follow NFPA 52: Vehicular Gaseous Fuel Systems Code

DC Fast Charger

- Direct-current (DC) fast charging equipment, sometimes called DC Level 3 (typically 480 V 3-phase AC input) must be installed to enable rapid charging of electric vehicles.
- Equipment must apply the Open Charge Point Protocol (OCPP) communication standard that allows charging stations and central systems from different vendors to communicate.
- Equipment must provide a minimum of 50 kW output power per vehicle. Equipment that provides 150 kW+ output power per vehicle is preferred.

    - If equipment only provides 50 kW power, the project site must be pre-wired and equipped to increase power levels to a minimum of 150 kW output power per vehicle.
    - Higher power levels (of both equipment and/or of pre-wiring for future installs) will receive higher scoring under the Innovative Technology evaluation criterion.
- Equipment must be configured in at least one of the following ways:
    - At least 2 dual chargers with both CHAdeMO and SAE CCS connectors per project site.
    - At least 2 CHAdeMO fast chargers, and at least 2 SAE CCS fast chargers per project site.
    - Higher quantity of chargers per project site that demonstrate higher levels of redundancy will receive higher scoring under the Innovative Technology evaluation criterion.
- While not a requirement, equipment capable of enabling dynamic power management to optimize power output per station will receive higher scoring under the Innovative Technology evaluation criterion.
- While not a requirement, equipment employing a scalable architecture, or other future-proofing technologies, will receive higher scoring under the Innovative Technology evaluation criterion.

Hydrogen

- To the extent practicable and with consideration of local ordinances, the following should be used as a guideline for hydrogen refueling station design:
  National Fire Protection Association (NFPA) 2: Hydrogen Technologies Code: 2011, http://www.nfpa.org
- Must be designed to accept delivery of hydrogen fuel from a mobile refueler or hydrogen tube trailer if on-site hydrogen production goes off line.
- Hydrogen dispensed at the station(s) shall meet the requirements in the Society of Automotive Engineers (SAE) International J2719: 2011, "Hydrogen Fuel Quality for Fuel Cell Vehicles" (www.sae.org).
- Have a minimum average daily fueling capacity of no less than 100kg. Each project must be able to deliver the rated daily capacity over a 12-hour period. The average daily station capacity (kg/day) shall be the total kg of hydrogen that can be delivered to a 7 kg-capacity fuel cell vehicle according to the SAE J2601, over a 12-hour period.

2. PROJECT SITING

To further address range anxiety, the State wishes to facilitate the deployment of AFV refilling/charging stations that will enable travel and the movement of goods to and through the State from the surrounding region as well as within the State. To that end, each proposed location must meet the following criteria:

- Be of strategic importance to extending the range and reach of AFV's along transportation corridors, such as major highways, shipping routes and population centers. The strategic importance of the location shall be clearly outlined in the submitted application.
    - DC Fast Chargers located within 1 mile of FHWA FAST Act designated EV Corridors (list can be found here: https://www.fhwa.dot.gov/environment/alternative_fuel_corridors/) will receive a higher score under the Geographic Distribution evaluation criterion.

- Be operable and accessible on a 24/7 basis and contain adequate lighting for all weather conditions.

- Remain operable and accessible year round and be maintained to be free of both manmade and natural obstructions.

Also, each applicant must be able to secure necessary property rights, easements, right of way and access to the property for the station. Documentation (e.g. a letter of commitment) must be included in the grant application.

3. PAYMENT ACCESSIBILITY

To enable AFV drivers to refuel vehicles at any public station, successful applicants must install payment infrastructure that allows customers to use commonly accepted credit card vendors (e.g. Visa, Master Card). Access may not be limited to the use of fuel network cards at publicly accessible stations For private stations, there are no specific payment accessibility requirements.

4. COMPLIANCE WITH AMERICANS WITH DISABILITIES ACT/ACCESSIBILITY

Stations installed under this grant are public accomodations and must be accessible to all drivers. Each successful applicant must demonstrate that the installation will meet the accessibility standards outlined in the Americans with Disabilities Act.

5. COMMITMENT TO OPERATIONS AND MAINTENANCE

In order to ensure that the installed equipment remains in good working order, each successful applicant must submit an operations and maintenance plan/schedule as part of the application. The original owner, as well as any successors, will be responsible for

complying with the operations and maintenance plan throughout the duration of the equipment's use at the site as described in subsection 8. Program Time Line below.

6. SIGNAGE

While federal highway signs have been developed for AFV refilling/charging, wayfinding and site-specific signs are at the discretion of the jurisdiction or property owner. In order to enable AFV drivers to locate and identify refueling/recharging sites, wayfinding and site signage is required for each AFV fueling/charging station location funded through this program. Each application must include a plan for installing signage approved by the Maryland Department of Transportation (MDOT) and its modal agencies (e.g. State Highway Administration (SHA) and Maryland Transportation Authority (MTA), as appropriate). Additional information on the governance of signage on Maryland roads can be found in the 2011 Manual on Uniform Traffic Control Devices (MUTCD) with the Maryland Supplement. This document can be found at:

http://www.roads.maryland.gov/Index.aspx?PageId=835

7. PROJECT TIME FRAME

In order to be eligible for consideration, an applicant must demonstrate that the proposed project will start and be completed within the time frame provided in subsection 8 "Program Time Line" set forth below. Each project and the surrounding site, must be maintained in good operating condition and remain operable for at least five years from completion of project construction.

8. PROGRAM TIME LINE

Please pay close attention to the dates set forth below. It is important to note that if awarded a grant, the project must be finished and all invoices must be submitted to MEA by October 1, 2020.

July 1, 2018	-Grant Program announced and posted to MEA website ("Program Announcement").
December 31, 2018	-Applications must be received at MEA by 5:00 PM EST. -Confirmation will be sent to each applicant verifying receipt of application.
January-March 2019	-Evaluation of grant applications.
March 2019	-Notification of grant award or denial will be made to all applicants.
April 2019	-Grant agreements sent to grantees that received award notifications.

April 30, 2019	-Executed grant agreements must be received by MEA -Project initiation can begin following execution of grant agreement by both parties.
July 15, 2019	-First monthly report is due from each grantee. Reporting will continue quarterly through the end of the 5-year grant period.
Ongoing	-Quarterly reporting continues through October 2024
October 1, 2020	-Project construction period ends. All invoices must be submitted to MEA for reimbursement.
October 1, 2025	-Final report due to MEA.

9. ELIGIBLE COSTS

Eligible costs under this grant program include those costs directly attributable to the site design, equipment installation, labor, site preparation, upgrade for utility connections, signage and equipment necessary to implement and operate the proposed AFV refilling/charging station. In addition, installation of equipment for the on-site production and dispensing of hydrogen fuel will be considered an eligible cost.

Only costs incurred after the Program Announcement shall be eligible for funding. Costs incurred prior to Program Announcement are not eligible for funding and will not be reimbursed. Costs incurred after the Program Announcement but prior to execution of the grant agreement are made at the applicant's risk and might not be reimbursable.

Ineligible costs include mobile refueling equipment, the purchase of fuels to stock the fueling station, and any ongoing equipment and site maintenance costs.

For example, assume the eligible costs associated with a project total $2,000,000 and an applicant requests a grant of $100,000. The applicant cost share equation would be calculated as follows: (($2,000,000-$100,000)/$2,000,000)) *100= 95%

10. CONTENT OF APPLICATION

Applicants must complete the Alternative Fuel Infrastructure Program application form found on the program webpage. **Applications, including all attachments, may not exceed 25 pages.** All applications must include the following:

- Information demonstrating that the project meets the requirement of subsections 1 through 8 described in Section X: Technical Specifications above.

- General project narrative, including any innovative technology integration, concepts, or partnerships. Project narratives should include any partnerships between the applicant and any fleet, business, or government.

- Description of the project location, including the specific street address of the proposed station. Description should include the following information for each proposed site:

    - An aerial map(s) (i.e. Google Maps – Satellite view) of the station location and location in relation to other public fueling stations of that technology type. Descriptions should discuss the proposed station's proximity to other public fueling stations of that technology type.
    - Number of chargers/pumps/dispensers.
    - Identify geographic area served.
    - Identify distance from nearby highway exits.
        - For DC Fast Charger applications only: discuss amenities available to EV drivers (accessibility, bathrooms, proximity to restaurants, retail etc.).
    - Documentation regarding ownership of potential properties must be provided. For a proposed project where the site is not owned by the applicant, signed letters of *commitment* (not just support) by property owners must be submitted with the application.

- Total estimated project cost and the specific grant amount the applicant is seeking to complete the project. Applicants must demonstrate the minimum required 50% cost share.

- Draft budget with a breakdown of utility infrastructure (i.e., upgrade for utility connections), dryer, filter, storage, gas compressor, dispenser, engineering, permitting and labor costs as well as any other relevant expenses.

- Implementation timeline.

- Documentation of financial commitments from banks or investors.

- Operations and maintenance plan/schedule.

- Signage plan.

- Narrative describing any experience installing, operating, or maintaining alternative fuel stations.

- Biographies of key project personnel.

11. EVALUATION OF APPLICATIONS

A Maryland Alternative Fuel Infrastructure Program Review Team will be assembled to make grant award recommendations. This team will consist of members from the MEA, Maryland Department of the Environment (MDE), the Maryland Clean Cities Coalition and/or the Maryland Department of Environment (MDOT).

The MEA Program Manager may request supplemental information from an applicant to assist with evaluation of the application.

12. GRANT SELECTION

If an application is selected for grant award, a grant agreement between MEA and the applicant will be prepared that establishes the terms and conditions of the grant. Award notification is expected to be made in March 2019. Once the grant agreement is fully executed by both MEA and the applicant, the grantee may begin project work. A grant agreement is considered to be fully executed when the agreement has been signed by both MEA and the applicant as well as date stamped by MEA. The grantee may invoice MEA for grant funds after the project is completed.

In addition, please note that this Program provides a fixed grant award amount, and as such, cost overruns **will not** be reimbursed.

13. TERMS AND CONDITIONS

i. General Terms

Grants are only available for projects that further the goals of the Alternative Fuel Infrastructure Program and meet eligibility criteria set forth herein and the terms and conditions of the grant agreement. Matching funds are required for this grant program. MEA reserves the right to fund all or none ($0) of the money allotted depending on the quality and eligibility of applications. Invoices will not be accepted until after there is an executed grant agreement between the applicant and MEA and the project installation is complete. All invoices must be **submitted by October 1, 2020.** All grants from MEA are on a reimbursement basis only. Advance payments are not available under this grant program.

MEA will reimburse grant funds in arrears only after all necessary invoice and report documentation has been submitted. MEA shall have sole discretion to determine whether complete invoice and report documentation has been submitted. Under no circumstances will MEA fund grant monies for work that has yet to be performed or for costs that have yet to be incurred.

Funds may be used in conjunction with other financing programs; however, the Grant funds may only be used for eligible costs as outlined in the subsection 9 “Eligible Costs” above.

ii. Reporting Requirements

Grantees shall be responsible for submitting a report to MEA at the end of each quarter and a final report at the end of the construction period. As shown on the Program Time Line provided above, the first quarterly report is due on July 15, 2019 and the final construction report is due by October 1, 2020. In addition, quarterly calendar year operational reporting will commence once the station is put into service and will continue until the end of the 5-year grant period, which ends on October 1, 2025. Each grantee's quarterly operational reports will provide station information including station status, the percentage of time the station was operational, alternative fuel gallons/kWhs consumed, average duration of charging event (for Level 3 DC fast charge applicants only) number of gallons of gasoline equivalent displaced, number of vehicles utilizing equipment, quantified environmental benefits, hours worked, fuel price and a narrative on the project's progress. Quarterly reports should be submitted on the form provided by MEA.

iii. Communication with MEA

The grantee shall notify MEA of any problems, operational changes, or ownership changes from the original project proposal. Any notification made in compliance with this condition should be made to the MEA Program Manager either by written letter or electronic email and should be provided within 10 days of the problem or change.

Any time extension requests shall also be submitted to the MEA Program Manager in writing via letter or electronic email.

iv. Site Visits

Grantee shall allow MEA, or an MEA-authorized representative, to conduct project site visits during normal business hours. It is MEA's intent to give reasonable notice to the grantee of any proposed site visit at least 24 hours in advance of the visit. To the extent provided by State law, neither the State, MEA nor its agents, representatives, or employees, shall be liable for any property, product liability, personal injury, or any other types of claims, including claims based on the negligence of MEA, its agents, representatives, or employees, arising out of or related in any way to the activities of MEA, its agents, representatives, or employees at the project site.

v. Permits

Grantee is responsible for identifying and obtaining all local, State and federal permits and licenses necessary for the implementation and operation/execution of a project.

vi. Historic Review

All undertakings assisted by MEA are subject to review and consultation under Section 106 of the National Historic Preservation Act and/or the Maryland Historical Trust Act of 1985. The purpose of this review is to consider the effects of projects on historic properties. Project areas that do not contain buildings, structures or significant landscape features more than 45 years old and are not recorded in the Maryland Inventory of Historic Properties may be exempted from this review process. Grant applicants should provide MEA with street addresses and an aerial map (i.e. Google Maps – Satellite view) showing the project location in order to conduct the required historic preservation review.

vii. Additional Grantee Responsibilities

The grantee will be responsible for the additional responsibilities listed below:

- day-to-day customer service actions such as managing driver access and providing driver support and station uptime monitoring,
- prompt maintenance and repair, and
- marketing

viii. CONFIDENTIALITY OF INFORMATION

MEA will treat information clearly and reasonably identified by the applicant as confidential commercial information or as a trade secret in accordance with Maryland's Public Information Act (PIA) as set forth in Title 4 of the General Provisions Article of the Annotated Code of Maryland.

ix. Tax Impact

The Maryland Office of the Comptroller has determined that, based on IRS rules, a State grant is considered to be taxable income. A Form 1099-G will be issued for grants received through this grant program.

FOR MORE INFORMATION

Any questions regarding these guidelines and applications should be directed to:

Mike Jones
Program Manager
TEL: 410-537-4071
FAX: 410-537-4096
michael.jones1@maryland.gov