

BOARD MEETING DATE: October 2, 2020

AGENDA NO. 4

**PROPOSAL:** Execute Contract to Develop and Demonstrate Natural Gas and Propane Conversion Systems for Medium-Duty Vehicles

**SYNOPSIS:** In 2019, the Board approved three projects to develop natural gas and propane conversion systems for the new Ford 7.3-liter gasoline engine with Ford Qualified Vehicle Modifiers, including a \$607,825 award to Agility Fuel Solutions (Agility). However, a contract with Agility was not executed due to lack of necessary Ford approvals. CARB recently adopted a new lower Optional Low NOx Standard of 0.01 g/bhp-hr under the Heavy-Duty On-Road Low NOx “Omnibus” regulation. Subsequently, Agility submitted a revised proposal to further optimize the engine to achieve the newly adopted level. This action is to execute a contract with Agility Fuel Solutions to develop, demonstrate and commercialize the Ford 7.3-liter medium-duty natural gas and propane conversions systems in an amount not to exceed \$607,825 from the Clean Fuels Program Fund (31).

**COMMITTEE:** Technology, September 18, 2020; Recommended for Approval

**RECOMMENDED ACTION:**

Authorize the Chairman to execute a contract with Agility Fuel Solutions in an amount not to exceed \$607,825 to develop, demonstrate and commercialize the Ford 7.3-liter medium-duty natural gas and propane conversions systems from the Clean Fuels Program Fund (31).

Wayne Nastri  
Executive Officer

## **Background**

South Coast AQMD has been supporting the rapid deployment of near-zero, 0.02 g/bhp-hr NO<sub>x</sub> vehicles through its incentive programs since the first near-zero, heavy-duty natural gas engines became commercially available in 2015.

In October 2019, the Board approved three projects to develop the new Ford 7.3-liter near zero NO<sub>x</sub> engine natural gas and propane conversion systems, including an award to Agility Fuel Solutions (Agility). Due to the lack of Ford Qualified Vehicle Modifiers (QVM) program approvals, staff was unable to finalize the contract with Agility. The Ford QVM program assures that vehicles converted through the program are converted to Ford standards and the given QVM can carry the added alternative fuel components and emissions warranty.

In August 2020, CARB adopted the Heavy-Duty On-Road Omnibus Low NO<sub>x</sub> regulation that included multiple lower NO<sub>x</sub> standards to be phased in starting in 2024. Additionally, the regulation included a 50 percent lower new Optional Low NO<sub>x</sub> Standard (OLNS) level of 0.01 g/bhp-hr. Agility subsequently submitted a revised proposal for the Ford 7.3-liter natural gas and propane conversion systems to the lower OLNS level of 0.01 g/bhp-hr.

The Ford medium-duty engine has significant market share in multiple applications, including local and regional goods movement, municipal fleets, utilities, and a variety of transit, shuttle and school bus operations. Agility has demonstrated their commercialization strategy as well as aftermarket service and warranty capability for their current large fleet of low-NO<sub>x</sub> natural gas and propane vehicles that include the Ford 6.8-liter natural gas trucks converted under the QVM program.

## **Proposal**

Agility proposes to develop, demonstrate and commercialize the propane and natural gas conversion systems for the new 7.3-liter Ford engine to the recently adopted OLNS of 0.01 g/bhp-hr. Agility will partner with SoCalGas on the CNG conversion and work with MAHLE Powertrain, LLC, to codevelop the alternative fuel system and engine control calibrations in MAHLE's laboratory. Agility will also demonstrate the certified natural gas and propane engine in two separate chassis configurations for system integration and validation, as well as fleet customer drive events. Agility will continue to seek QVM program approvals from Ford, while supporting the vehicles through its existing Agility Service and Warranty program which covers the added alternative fuel components and required CARB emissions warranty.

## **Benefits to South Coast AQMD**

Availability of more near-zero NO<sub>x</sub> alternative fuel medium-duty engines, combined with renewable fuels, will lead to further near-term NO<sub>x</sub> reductions to help with ozone attainment and greenhouse gas reductions. This will expand the number of engine

offerings for South Coast AQMD incentive programs, especially heavy-duty engines that can achieve the lowest OLNNS, which will contribute towards lower emissions, particularly in environmental justice communities. Projects to support development of near-zero emission engines are included in the Technology Advancement Office Clean Fuels Program 2020 Plan Update under the category “Engine Systems.”

**Sole Source Justification**

Section VIII.B.1 of the Procurement Policy and Procedure identifies provisions by which sole source awards may be justified. The request for sole source award is made under provision B.2.d.(1): Project involving cost-sharing by multiple sponsors. The proposed projects include cash and in-kind cost-sharing from SoCalGas and the project proponents.

**Resource Impacts**

South Coast AQMD’s cost-share will not exceed \$453,500 and SoCalGas’s cost-share will not exceed \$154,315. The total project cost will not exceed \$607,825 from the Clean Fuels Program Fund (31). The estimated total cost is summarized below:

<b>Proposed Project</b>	<b>Amount</b>	<b>Percent</b>
<b>Agility</b>	\$1,226,175	67
<b>SoCalGas</b>	\$154,325*	8
<b>South Coast AQMD (requested)</b>	\$453,500	25
<b>Total Project Cost</b>	\$1,834,000	100

\*Cost-share for CNG conversion only

Sufficient funds are available in the Clean Fuels Program Fund (31) for this proposed project. The Clean Fuels Program Fund (31) is established as a special revenue fund resulting from the state mandated Clean Fuels Program. The Clean Fuels Program, under Health and Safety Code Sections 40448.5 and 40512 and Vehicle Code Section 9250.11, establishes mechanisms to collect revenues from mobile sources to support projects to increase the utilization of clean fuels, including the development of the necessary advanced enabling technologies. Funds collected from motor vehicles are restricted, by statute, to be used for projects and program activities related to mobile sources that support the objectives of the Clean Fuels Program.