

BOARD MEETING DATE: April 3, 2020

AGENDA NO. 6

PROPOSAL: Recognize Revenue and Execute Contract to Perform Evaluation of Vehicle Maintenance Costs Between Natural Gas and Diesel Fueled On-Road Heavy-Duty Vehicles

SYNOPSIS: South Coast AQMD has been supporting the rapid deployment of near-zero emissions heavy-duty vehicles since near-zero NOx natural gas engines became commercially available in 2015. To determine total cost of ownership, a comparative evaluation of maintenance costs between natural gas and diesel trucks needs to be performed. These actions are to recognize revenue up to \$150,000 from SoCalGas into the Clean Fuels Program Fund (31) and execute a contract to perform a comparative evaluation of vehicle maintenance costs for on-road heavy-duty vehicles in an amount not to exceed \$250,000 from the Clean Fuels Program Fund (31).

COMMITTEE: No Committee Review

RECOMMENDED ACTIONS:

1. Recognize revenue, upon receipt, up to \$150,000 from SoCalGas into the Clean Fuels Program Fund (31); and
2. Authorize the Chairman to execute a contract with West Virginia University-Center for Alternative Fuels Engines and Emissions to perform comparative evaluation of vehicle maintenance costs for on-road heavy-duty vehicles in an amount not to exceed \$250,000 from the Clean Fuels Fund (31).

Wayne Nastri
Executive Officer

Background

According to U.S. Energy Information Administration (EIA) projections, the freight truck sector's annual vehicle miles traveled (VMT) will increase by 54 percent by 2050. As the transportation sector continues to grow, diversified and cost-effective solutions are necessary to ensure resiliency and affordability, while meeting increasing energy demands. The U.S. Department of Transportation maintains that natural gas plays a key role as a versatile, low emission fuel and is an increasingly attractive alternative to conventional diesel fuel on a nationwide basis. Due to low carbon fuel and renewable fuel initiatives, renewable natural gas (RNG) further increases interest and motivation in expanding the use of natural gas in the transportation sector.

South Coast AQMD has been supporting the rapid deployment of near-zero emission 0.02 g/bhp-hr NO_x vehicles through its incentive programs since the first near-zero heavy-duty natural gas engines became commercially available in 2015. In evaluating natural gas vehicle (NGV) total cost of ownership (TCO), maintenance costs are often cited as a potential advantage that reduces NGV TCO relative to comparable diesel-powered vehicles due to lack of exhaust aftertreatment systems. There is no recent data that clearly compares the relative maintenance costs of NGVs and diesel trucks, especially for advanced natural gas and diesel technologies introduced in the last decade. The South Coast Air Basin (Basin) includes one of the largest NGV fleets, including near-zero emission NGVs. Combined with the unique urban duty cycle in the Basin, a more detailed and regionally focused maintenance study is necessary to help understand the TCO and drive greater adoption of NGVs.

Proposal

West Virginia University-Center for Alternative Fuels Engines and Emissions (WVU-CAFEE), along with SoCalGas, has proposed to perform a comparative evaluation of vehicle maintenance costs between natural gas and diesel fueled vehicles. The vehicles in the proposed study include Class 6, 7 and 8 vehicles in the Basin and are used in goods movement and delivery vocations. The WVU-CAFEE project proposes to build upon the emissions and activity data collected and relationships developed from a currently ongoing in-use emissions study that includes a comprehensive sample of more than 200 trucks and buses from 25 fleet participants in 5 different vocations. The proposed project will enable correlation of vehicle maintenance costs to already available fleet information, real-world vehicle activity and in-use emissions data. WVU-CAFEE is currently seeking additional co-funding to expand the project scope to include other alternative fuels such as propane, electric and bio-diesel blends.

Benefits to South Coast AQMD

Understanding the TCO of near-zero NO_x alternative fuel engines, combined with renewable fuels like RNG, will lead to further near-term NO_x reductions for ozone attainment and concurrent GHG emission reductions. This study will help to collect data that could result in wider NGV adoption in the Basin. Projects to support development

of near-zero emission engines maintenance costs are included in the *Technology Advancement Office Clean Fuels Program 2020 Plan Update* under the category “Fuel/Emissions Studies”.

Sole Source Justification

Section VIII.B.2 of the Procurement Policy and Procedure identifies four major provisions under which a sole source award may be justified. This request for sole source award is made under provision B.2.d.: Other circumstances exist which in the determination of the Executive Officer require such waiver in the best interest of the South Coast AQMD. Specifically, B.2.d.(8): Research and development efforts with educational institutions or nonprofit organizations. WVU is an educational institution and CAFEE is their research center with multidisciplinary resources to engage in diverse environmental and transportation research programs.

Resource Impacts

SoCalGas’s \$150,000 in revenue will be received into the Clean Fuels Program Fund (31) and the contract with WVU-CAFEE will not exceed \$250,000. The total estimated cost for the proposed project is \$250,000, of which South Coast AQMD’s proposed cost-share will not exceed \$100,000 from the Clean Fuels Program Fund (31), as summarized below:

Proposed Project Cost-Share

Project Partner	WVU Study	Percent
SoCalGas	\$150,000	60
South Coast AQMD (requested)	\$100,000	40
Total Project Cost*	\$250,000	100

*WVU is seeking additional co-funding to expand the project scope

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 Cleans 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.