

BOARD MEETING DATE: May 3, 2019

AGENDA NO. 3

PROPOSAL: Execute Contract to Develop and Demonstrate Battery Electric Medium-Duty Trucks and Amend Near-Zero Heavy-Duty Diesel Truck Replacement Award

SYNOPSIS: Demand for commercially available heavy-duty battery electric trucks continues to increase, but availability is limited to a few suppliers. Roush CleanTech, LLC, (Roush) proposes to develop battery electric medium-duty Class 6-7 commercial vehicles and demonstrate the technology with local commercial fleets. In October 2018, the Board awarded CEC grant funds for near-zero emission truck projects, including an award to T&M Construction for a drayage truck. Subsequently, staff discovered an administrative error in the type of truck, which is a dump truck. These actions are to execute a contract with Roush to develop and demonstrate medium-duty electric trucks in an amount not to exceed \$937,500 from the Clean Fuels Program Fund (31) and to amend the award to T&M Construction, changing the vehicle type from drayage to dump truck.

COMMITTEE: Technology, April 19, 2019; Recommended for Approval

RECOMMENDED ACTIONS:

1. Authorize the Chairman to execute a contract with Roush CleanTech, LLC, to develop and demonstrate battery electric medium-duty trucks in an amount not to exceed \$937,500 from the Clean Fuels Program Fund (31).
2. Amend an October 2018 award to T&M Construction to replace a heavy-duty diesel truck with a near-zero emission dump truck, at no additional cost.

Wayne Nastri
Executive Officer

Background

Roush CleanTech, LLC, (Roush) requests support from South Coast AQMD to develop a new all-electric platform for medium-duty commercial trucks and school buses. While the transportation industry has placed a focus on heavy-duty, long-haul all-electric trucking technologies, Roush believes that this proposed battery electric drivetrain fills a significant gap in the zero emissions engine market for heavy-duty fleets operating shorter daily routes with many stop-and-go events. These applications are local and regional goods movement, municipal fleets, utilities, a variety of transit and shuttle bus operations, and school buses. Roush has developed not only a plan for the vehicle and technology development and build, but also a robust commercialization strategy that draws upon its decades old partnership with Ford and engages industry leaders and partners, such as Penske Truck Leasing, in ongoing evaluation and customer engagement roles.

This project will leverage Roush's extensive core engineering resources and control systems expertise to develop a unique and differentiated battery electric vehicle (BEV) product. A primary competitive advantage of the BEV product will be a Roush proprietary vehicle control system to more effectively manage the electrical loads and optimize energy use of the vehicle and related vehicle systems. A higher efficiency package will allow smaller battery packs for the same required range, providing significant cost and payload advantages to fleets.

Under the "Year 5" Proposition 1B Program Announcement released in October 2017, T&M Construction submitted a proposal for replacement of one heavy-duty diesel truck with a near-zero emission truck, but the solicitation was heavily oversubscribed and not all eligible clean trucks could be funded. In July 2018, CEC awarded South Coast AQMD \$8 million to fund projects based on Proposition 1B Program guidelines, and staff proposed using the CEC revenue to award funds to the remaining eligible clean trucks projects. In October 2018, the Board approved T&M Construction for an award under the CEC grant, identifying the vehicle as a drayage truck. Recently, T&M Construction clarified that the truck operates in the ports but not as a drayage truck. The truck is classified as a dump truck transporting construction material into the ports. Since the truck is still considered a goods movement truck, the project is still eligible for CEC funds.

Proposal

This action is to execute a contract with Roush to develop and demonstrate medium-duty electric trucks. The demonstration of these medium-duty trucks are intended to be the first all-electric vehicle application with the new Roush electric powertrain technology, followed by applications for Class C and D school buses.

This project includes the strategic planning, design, build and demonstration of three BEVs. Production gasoline vehicles will be converted to full battery electric propulsion. The Roush engineering team will develop initial design concepts and vehicle package layouts of the EV system, enough to enable the build of three proof-of-concept vehicles which are intended to demonstrate functional intent of the planned production vehicle.

The first vehicle will be built as the initial engineering mule vehicle to be used by the Roush powertrain engineering team for ongoing development of the vehicle and vehicle systems. Two additional vehicles will be built on the Ford F650/750 platform and used for concept demonstration and extended in-fleet product evaluation with Penske. These two demonstration vehicles will be used to generate actual customer use-case data to help with validation cycle requirements, as well as to obtain customer feedback on usability and performance.

This action is to also amend an award using CEC funds approved by the Board in October 2018 to T&M Construction to correct the vehicle vocation from a drayage truck to non-drayage dump truck, as clarified by the applicant, at no additional cost.

Sole Source Justification

Section VIII.B.2 of the Procurement Policy and Procedure identifies four major provisions by which sole source awards may be justified. This request for a sole source award is made under provision B.2.c.: The desired services are available from only the sole-source based upon one or more of the following reasons. Specifically, B.2.c.(1): The unique experience and capabilities of the proposed contractor or contractor team; and B.2.c.(2): The project involves the use of proprietary technology. This request for a sole source award is also made under provision B.2.d.(1): Other circumstances exist which in the determination of the Executive Officer require such waiver in the best interests of the South Coast AQMD. Specifically, this project involves cost-sharing by multiple sponsors, as described in Resource Impacts.

Benefits to South Coast AQMD

The proposed project is relevant to South Coast AQMD's priorities to reduce NOx and PM emissions from transportation sources in order to achieve federal ambient air quality standards and protect public health. Projects to support development and demonstration of advanced technologies are included in the Technology Advancement Office Clean Fuels Program 2019 Plan Update under the category of "Electric/Hybrid Technologies and Infrastructure". Successful demonstration of this technology will help to support the commercial viability and wide-scale deployment of zero emissions technology in the medium-duty truck sector by offering more options meeting a variety of fleet needs.

In addition, the successful implementation of the Proposition 1B–Goods Movement Emission Reduction Program will provide direct emissions reductions for NOx as required by the program. Since the vehicles funded under this program will operate for the life of the contract and beyond, the emissions reductions will provide long-term benefits.

Resource Impacts

The total estimated cost for the proposed projects is up to \$3,200,000. South Coast AQMD’s total proposed cost-share will not exceed \$937,500 from the Clean Fuels Program Fund (31).

Funding Source	Funding Amount
Roush	\$2,062,500
Penske (in-kind)	\$200,000
South Coast AQMD(<i>requested</i>)	\$937,500
Total	\$3,200,000

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.

The amendment to the award for T&M Construction using CEC funds is at no additional cost.