

BOARD MEETING DATE: December 6, 2019

AGENDA NO. 4

PROPOSAL: Amend Contracts to Develop and Demonstrate Zero Emissions Drayage Trucks and Provide Project Implementation Assistance for Clean Fuels Projects and Execute Easement for Fleet Chargers

SYNOPSIS: In March 2016, the Board recognized revenue from CARB and other funding partners and awarded multiple contracts for a Zero Emissions Drayage Truck (ZEDT) Project. In October 2018, the Board amended those contracts to reallocate funds among the project partners; however, an additional reallocation of funds is needed at this time. These actions are to authorize the Executive Officer to amend the four project partner contracts and a project implementation assistance contract, as needed, for the ZEDT Project and to redistribute funds among these five contracts as needed to ensure project completion. This action is to also amend a contract for project implementation support of Clean Fuels related projects adding up to \$50,000 from the Clean Fuels Program Fund (31). In addition, in August 2018, staff applied for 30 fleet chargers through Southern California Edison's Charge Ready Program, which requires the host to execute an easement. This action is to authorize the execution of the easement.

COMMITTEE: Technology, November 15, 2019; Recommended for Approval

RECOMMENDED ACTIONS:

1. Authorize the Executive Officer to amend the following contracts to develop and demonstrate zero emissions drayage trucks using project and/or administrative funds from CARB in the GHG Reduction Projects Special Revenue Fund (67), contingent upon execution of an amended agreement with CARB, as follows:
 - a. Reduce \$3,251,501 from Kenworth Truck Company which had been allocated for two Phase 2 CNG plug-in hybrid electric trucks;
 - b. Add \$1,000,000 to Peterbilt Motors for the development and demonstration of two additional Class 8 battery electric drayage trucks and installation of DC fast charging infrastructure to support participating fleets;
 - c. Add \$400,000 to BYD Motors for the installation of DC fast charging infrastructure to support participating fleets deploying battery electric trucks;

- d. Add \$353,000 to Volvo Technology of America, LLC, towards an extended demonstration plan to quantify emission reductions and fuel savings benefits on its Eco-Drive and aftertreatment technologies; and
 - e. Add \$161,800 to Clean Fuel Connection, Inc., (CFCI) towards project implementation assistance.
- 2. Authorize the Executive Officer to redistribute funds among the four participating original equipment manufacturers above and CFCI on an as-needed basis to meet project goals, contingent upon CARB approval if necessary, for the Greenhouse Gas Reduction Fund Zero Emissions Drayage Truck Project.
 - 3. Authorize the Chairman to amend CFCI's contract providing project implementation assistance on Clean Fuels related projects adding up to \$50,000 from the Clean Fuels Program Fund (31).
 - 4. Authorize the Executive Officer to execute an easement with Southern California Edison for the installation of 30 fleet chargers.

Wayne Natri
Executive Officer

MMM:NB:JE:PSK/DAH

Background

Zero Emissions Drayage Trucks

In March 2016, the Board recognized revenue from CARB and other funding partners and awarded multiple contracts to develop and demonstrate zero emissions drayage trucks. These funds were awarded based on a proposal submitted by staff in response to CARB's solicitation under the Low Carbon Transportation Greenhouse Gas Reduction Fund (GGRF) Investments.

The Zero Emissions Drayage Truck (ZEDT) project, a collaboration between South Coast and Bay Area AQMDs, San Joaquin Valley and San Diego APCDs and San Diego Gas & Electric, is to develop a portfolio of commercially promising zero and near-zero emissions drayage truck technologies for statewide demonstrations across a variety of drayage applications in and around the Ports of Long Beach, Los Angeles, Oakland, Stockton and San Diego. Each partnering air district committed staffing and/or cost-share for this ground-breaking initiative to support rapid commercialization of zero emissions cargo transport technologies. The project is being implemented in conjunction with four original equipment manufacturers (OEMs) including BYD Motors, Kenworth Truck Company, Peterbilt Motors and Volvo Technology of America, LLC. In October 2018, the Board amended those four OEM contracts to reallocate funds among the project partners; however, an additional reallocation of funds is needed at this time.

In September 2019, CARB agreed to extend the GGRF ZEDT project to December 31, 2020, to allow additional time for data collection and to reallocate funds among the project partners. Phase 1 and the majority of Phase 2 trucks have been deployed. Data collection on baseline vehicles and portable emissions measurement system (PEMS) testing have commenced with fleets deploying these trucks in drayage service. Some fleet locations required electrical infrastructure upgrades resulting in higher costs for EV infrastructure. Challenges remain in deploying some of the trucks into revenue service and installing the supporting infrastructure, as well as deploying the required number of trucks in the jurisdiction of each of the air district partners.

Project Implementation Assistance for Clean Fuels Projects

In addition, through a competitive bid process, Clean Fuel Connection, Inc., (CFCI) has been providing technical expertise and project implementation assistance on various Clean Fuels projects based on their expertise with alternative fuels, electric vehicles, and charging and fueling infrastructure. Additional funds are needed to continue this support.

Easement for EV Chargers at Headquarters

In August 2018, staff applied for 30 fleet chargers for South Coast AQMD headquarters through Southern California Edison's (SCE) Charge Ready Program. In December 2018, as part of the application process, South Coast AQMD executed a site host agreement with SCE. In June 2019, SCE notified South Coast AQMD that it would also need to execute an easement to qualify for the Charge Ready funding.

Proposal

Zero Emissions Drayage Trucks

Kenworth's contract called for the deployment of two Phase 1 and two Phase 2 CNG plug-in hybrid electric trucks plus assistance in securing CNG fueling infrastructure contracts. Unfortunately, Kenworth experienced significant delays in the release of its two Phase 1 trucks resulting from prolonged supplier issues for hybrid and other components as well as challenges on integrating those components onto the truck platform. In September 2019, Kenworth's two Phase 1 trucks were finally deployed at Total Transportation Services, Inc. However, because Kenworth's two Phase 2 trucks will not be deployed by the December timeline required of the project, their funding will be reduced and allocated to other areas of the overall project. Additionally, in order for Kenworth to meet the project timeline required to deploy two trucks within San Joaquin Valley APCD's jurisdiction, they will have to be deployed at a fleet with existing CNG infrastructure.

As a result of the delay in truck development and lack of CNG fueling infrastructure, staff's proposal is for Peterbilt to build two additional battery electric trucks for deployment at another fleet in San Joaquin Valley APCD's jurisdiction. The two additional Peterbilt trucks will leverage the improved Phase 2 design and be modified as

needed to maximize battery electric range. Charging infrastructure will also be installed at this fleet location to support the two trucks.

Some fleets at the Ports of Oakland, Los Angeles and Long Beach do not have sufficient electrical infrastructure capacity to install DC fast chargers required to support these trucks so funding will be reallocated for this purpose between Peterbilt and BYD.

Volvo will further develop its Eco-Drive technology to quantify emission reductions from Eco-Drive based on engine dynamometer tests. Volvo will conduct validation and testing and then deploy an aftertreatment technology on its Phase 2 truck. The extended demonstration plan will enable Volvo to fully validate and quantify emissions reduction and fuel economy benefits from its Eco-Drive and aftertreatment technologies. This extended demonstration plan will be completed by December 2020.

Since 2018, CFCI has been performing project implementation assistance for the ZEDT Project, but additional funding is required for the compilation of quarterly reports, invoices, mileage tracking, vehicle certifications and/or registrations, technical deliverables and auditing recordkeeping. In May 2019, as part of a prior contract amendment, CARB approved reallocating \$76,800 of South Coast AQMD's administrative funds towards CFCI for this purpose. However, because this project requires significant administration and recordkeeping, the extension will require additional project implementation assistance estimated at \$85,000, for a total allocation to CFCI of \$161,800.

This action is to authorize the Executive Officer to amend contracts, contingent upon execution of an amended agreement with CARB, as follows: 1) reduce \$3,251,501 from Kenworth Truck Company; 2) add \$1,000,000 to Peterbilt Motors; 3) add \$400,000 to BYD Motors; 4) add \$353,000 to Volvo Technology of America, LLC; and 5) add \$161,800 to CFCI. This action is to also authorize the Executive Officer to redistribute funds among the four participating OEMs and CFCI on an as-needed basis to meet project goals, contingent upon CARB approval if necessary.

Project Implementation Assistance for Clean Fuels Projects

This action is to add up to \$50,000 from the Clean Fuels Fund (31) to CFCI's contract for project implementation assistance on various Clean Fuels related projects.

Easement for EV Chargers at Headquarters

This action is to authorize the Executive Officer to execute an easement with SCE for the installation of 30 fleet chargers at South Coast AQMD headquarters. Installation of the chargers is anticipated in early 2020.

Benefits to South Coast AQMD

Zero Emissions Drayage Trucks

The ZEDT project is to develop and demonstrate zero emissions drayage truck technologies for goods movement operations. The scope of this project is identified as a technical priority in the *Technology Advancement Office Clean Fuels Program 2019 Plan Update* under “Electric/Hybrid Technologies & Infrastructure.” Successful demonstration of such projects will contribute to the attainment of clean air standards in the South Coast Air Basin by eliminating PM and NOx emissions from replaced diesel drayage trucks.

Project Implementation Assistance for Clean Fuels Projects

Outside project implementation assistance will provide an effective means of completing timely and sometimes rigorous requirements in support of TAO’s research, development, demonstration and deployment programs.

Easement for EV Chargers at Headquarters

This EV infrastructure project at South Coast AQMD Headquarters will advance the state of PEV readiness in California by creating a viable charging network that will be accessible, convenient, reliable and affordable for fleet vehicles.

Resource Impacts

Zero Emissions Drayage Trucks

The reallocation of funds will not exceed the project and/or administrative funds allocated for the GGRF ZEDT Project in the GHG Reduction Projects Special Revenue Fund (67).

The reallocation of GGRF and Clean Fuels funding is as follows:

Project Partner	Original (Oct 2018 Board)		Proposed Revision	
	CARB	SCAQMD	CARB	SCAQMD
Kenworth	5,714,264	3,423,475	3,647,132	2,239,106
BYD	5,765,564	2,294,436	6,165,564	2,294,436
Peterbilt	5,733,564	2,342,436	6,733,564	2,342,436
Volvo	5,657,564	2,341,184	6,010,564	2,341,184
CFCI*	0	0	161,800	0
Admin	787,544	0	939,876	0
TOTAL	23,658,500	10,401,531	23,658,500	9,217,162

Project Implementation Assistance for Clean Fuels Projects

The contract amendment with CFCI will not exceed \$50,000 from the Clean Fuels Fund (31).

Easement for EV Chargers at Headquarters

The easement has no fiscal impact.

Sufficient funds are available from the GGRF Reduction Projects Special Revenue Fund (67) and the Clean Fuels Fund (31), the latter of which was 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.