BOARD MEETING DATE: November 2, 2018 AGENDA NO. 3

PROPOSAL: Execute Contract for Expansion of Hydrogen Fueling Station

SYNOPSIS: The University of California Irvine (UCI) has requested cofunding for the expansion of its hydrogen fueling station to add additional capacity including more fueling positions to serve the increasing number of fuel cell cars and buses utilizing the station. The MSRC has approved $1 million in cost-share and the CEC is considering providing $400,000 in cost-share for this $1.8 million project. This action is to execute a contract with UCI for expansion of their hydrogen fueling station in an amount not to exceed $400,000 from the Clean Fuels Program Fund (31).

COMMITTEE: Technology, October 19, 2018; Recommended for Approval

RECOMMENDED ACTION:

Authorize the Chairman to execute a contract with UCI to cost-share construction and operation of the expansion of their hydrogen vehicle fueling station to support fueling fuel cell cars and buses in an amount not to exceed $400,000 from the Clean Fuels Program Fund (31).

Wayne Nastri
Executive Officer

MMM:FM:NB:LHM

Background

The University of California Irvine (UCI) has been and continues to be instrumental in hydrogen related research for more than two decades. The National Fuel Cell Research Center (NFCRC), located at UCI, was dedicated in 1998 by DOE and CEC to: 1) accelerate the development and deployment of fuel cell technology; 2) enable the stationary and mobile fuel cell market; 3) address market hurdles; 4) convene government agencies, businesses and academia to develop effective public-private alliances, and 5) provide leadership in the preparation of educational materials and programs to help develop the national work force in fuel cell technology. The NFCRC focuses on both mobile and stationary fuel cells, the development of a hydrogen fueling

infrastructure, and the interface between stationary fuel cell technology, transportation and the emerging hydrogen economy.

The UCI station has been in operation since January 2003, supporting research and fuel cell vehicle development. In 2007, it became the first dual-pressure station operating in the U.S. with public access for fuel cell vehicle fueling. The station has been upgraded over the years, opening as a retail station for fueling passenger cars in November 2015 and refueling buses at night, including fleet buses for the Orange County Transit Authority (OCTA). For the past year, the station has operated at its design throughput capacity, while customer demand continues to increase, resulting in an urgent need for expansion of capacity and fueling positions. Shifting to liquid hydrogen deliveries will strengthen supply chains, potentially reducing the price of dispensed hydrogen.

On April 6, 2018, the MSRC released Program Opportunity Notice #PON2018-02, "Hydrogen Infrastructure Partnership Program." At its September 20, 2018 meeting, the MSRC approved UCI's funding request for its station expansion project in the amount of $1,000,000. CEC staff is working with UCI on a revenue agreement to fund the project in the amount of $400,000, which the CEC will consider on November 8, 2018. The UCI hydrogen station expansion project provides a unique public-private partnership opportunity to enable ongoing research on a larger capacity retail hydrogen station serving retail and transit customers.

Proposal

This action is to execute a contract with UCI for expansion of their hydrogen fueling station from the current capacity of 180 kilograms per day (kg/day) of delivered gaseous hydrogen to in excess of 800 kg/day of delivered liquid hydrogen and from one to four fueling positions, with both 350 bar and 700 bar hydrogen. On-site storage will also increase, further strengthening the hydrogen supply chain, and limiting impacts to the consumers. Delivered hydrogen is expected to be at least 33 percent renewable, in compliance with SB 1505 requirements.

In addition to serving more light-duty vehicles, buses will continue to be scheduled for fueling at night to minimize impact on light-duty customers. Expansion of the station will enable UCI to increase the number of fuel cell buses serving the campus, as well as provide support, if needed, for the increased number of fuel cell buses planned for deployment by OCTA, leading to a more robust hydrogen fueling network.

UCI will solicit competitive bids and plans to construct the station expansion in 2019. As stations grow in size, continued public research is needed to evaluate multiple aspects. Fueling protocols, dispenser design and station throughput and reliability are just some examples that can be evaluated by UCI. UCI intends to report at least three years of operating data through the National Renewable Energy Laboratory.

Sole Source Justification
Section VIII.B.2. of the Procurement Policy and Procedure identifies 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 SCAQMD. Specifically, these circumstances are B.2.d.(8): Research and development efforts with educational institutions or nonprofit organizations.

Benefits to SCAQMD
SCAQMD supports hydrogen and fuel cell technologies and recognizes that light-, medium- and heavy-duty vehicles must achieve zero or near-zero emissions for the region to meet state and federal air quality attainment standards. Projects to support implementation of various clean fuel vehicle and infrastructure programs are included in the *Technology Advancement Office Clean Fuels Program 2018 Plan Update* under the category of "Hydrogen and Fuel Cell Technologies and Infrastructure." This project will help ensure that sufficient hydrogen infrastructure is available to support early-market introduction of zero emissions fuel cell vehicles and further study issues related to co-locating hydrogen fueling for light-, medium- and heavy-duty vehicles and larger volume stations supported by gaseous and liquid hydrogen storage.

Resource Impacts
SCAQMD's support of the UCI Hydrogen Station Expansion Project will not exceed $400,000 from the Clean Fuels Program Fund (31). Project partners and proposed funding are as follows:

Project Partner	Proposed Funding	Percent
MSRC	$1,000,000	56
CEC*	$400,000	22
SCAQMD *(requested)*	$400,000	22
Project Total	**$1,800,000**	100

*pending approval at CEC's 11/8/18 Business Meeting

Sufficient funds are available from the Clean Fuels Program Fund, 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.