

BOARD MEETING DATE: October 2, 2015

AGENDA NO. 5

PROPOSAL: Execute Contract to Cosponsor Hydrogen Station Equipment Performance Project 

SYNOPSIS: The California Department of Food and Agriculture, Division of Measurement Standards (DMS) is requesting cofunding for the Hydrogen Station Equipment Performance (HyStEP) project to develop and operate equipment used to evaluate station performance pursuant to SAE Standard J2601. This action is to execute a contract with DMS to cosponsor the HyStEP project in an amount not to exceed \$100,000 from the Clean Fuels Fund (31).

COMMITTEE: Technology, September 18, 2015; Recommended for Approval

**RECOMMENDED ACTION:**

Authorize the Chairman to execute a contract with the California Department of Food and Agriculture, Division of Measurement Standards to cosponsor the HyStEP project in an amount not to exceed \$100,000 from the Clean Fuels Fund (31).

Barry R. Wallerstein, D.Env.  
Executive Officer

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**Background**

In 2013, U.S. DOE, along with automakers and other key stakeholders, launched H2USA, a new public-private partnership to address the key challenges of hydrogen infrastructure. To help ensure a safe, fast, full customer fill at commercial hydrogen stations, testing equipment needs to be developed and used to validate or audit fill performance of hydrogen stations to meet SAE Standard J2601 using test methods in CSA HGV 4.3. CARB and DOE are leading an effort to fund, design and build a new Hydrogen Station Equipment Performance (HyStEP) Device that will provide such services. Phase I, which is being overseen by a national project team, is to design, fabricate and initially validate and field test a device. It is currently funded with approximately \$881,000 from DOE, Sandia National Laboratories, the National Renewable Energy Laboratory (NREL), Air Liquide Industrial U.S. LP, Toyota, CARB

and Boyd Hydrogen as part of the H2USA H2FIRST Project. The equipment, which is owned by Sandia, was assembled, mounted in a trailer by Powertech, and was validation tested by NREL through September 2015.

### **Proposal**

Phase II is California implementation and being overseen by a California task force, which includes representatives from CARB, CEC, DMS, CaFCP, SCAQMD, Toyota, Mercedes, BMW, Air Liquide, NREL and Sandia. The equipment validation device will be loaned for the California implementation portion for up to a two-year period. The total cost for Phase II is estimated to be approximately \$805,000, with \$100,000 each in cofunding already committed from both the California Fuel Cell Partnership (CaFCP) and the CEC. CARB is contributing \$100,000 for a tow vehicle and in-kind for a staff Air Resources Engineer. Successful testing in California may ultimately lead to certification and/or listing by nationally recognized testing laboratories, reduced time for hydrogen station commissioning and increased deployment of zero-emission vehicles in our region. Some automakers may still choose to conduct their own additional hydrogen station test program, especially in the early years of station development.

This action is to execute a contract with DMS to cosponsor the HyStEP project. DMS has experience with hydrogen station testing for weights and measures accuracy and plans to operate HyStEP in California. The proposed budget will support approximately 150 days of on-site testing with 4 days planned for each station. In this schedule, 38 new stations can be tested and there would be sufficient hydrogen to support estimated throughput demand from fuel cell vehicles through 2016. The HyStEP equipment is scheduled to arrive in California in early fall for a series of shakedown, validation and operational tests. Station validation testing is scheduled to begin late 2015 and continue through 2016. CARB is planning on taking comments and having stakeholder discussions in a series of workshops planned for the summer of 2016 to explore who should have authority of jurisdiction over the fueling protocols in SAE Standard J2601.

### **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 SCAQMD. Specifically, these circumstances are B.2.d.(1): Project involving cost-sharing by multiple sponsors. DMS has the authority for certifying weights and measures for fueling stations in California and experience testing hydrogen stations for weights and measures certification. Operation of the HyStEP device for testing the fill performance of hydrogen stations would lay the foundation for SAE J2601 testing in California and the U.S. This project involves cost-sharing by multiple sponsors.

## Benefits to SCAQMD

There are several elements to commissioning a hydrogen fueling station. Currently, automakers are testing hydrogen station fill performance with their own specially instrumented fuel cell vehicles, which often takes weeks or months depending on the availability of these vehicles and the degree of reprogramming required. The HyStEP device provides an opportunity to standardize testing such that commissioned stations are ensured to meet safety and performance standards under recommended SAE Standard J2601 using test methods in CSA HGV 4.3, rendering repeat visits from multiple automakers unnecessary. Successful implementation of the HyStEP device by DMS in California should lead to certification by nationally recognized testing laboratories, reduced time for hydrogen station commissioning, and increased deployment of zero-emission vehicles in our region. This proposed project is included in the *Technology Advancement Office Clean Fuels Program 2015 Plan Update* under the category of “Develop and Demonstrate Distributed Hydrogen Production and Fueling Stations.”

## Resource Impacts

The contract with DMS shall not exceed \$100,000 from the Clean Fuels Fund (31). In addition to the \$881,000 committed to build and field test HyStEP for Phase I, funding from the following cosponsors for operation in California (Phase II) is anticipated as follows:

HyStEP Phase II Anticipated Funding

<b>Organizations</b>	<b>Anticipated Funding</b>	<b>Percent</b>
CaFCP	\$100,000	12.5%
CARB*	\$405,000	50.0%
CEC	\$100,000	12.5%
Other	\$100,000	12.5%
SCAQMD ( <i>requested</i> )	\$100,000	12.5%
Total	\$805,000	100%

\*cash and in-kind

Sufficient funds are available for the proposed projects from the Clean Fuels Fund (31), 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.