


BOARD MEETING DATE: September 2, 2016

AGENDA NO. 4

PROPOSAL: Execute and Amend Contracts for Hydrogen Station Upgrades, Site Changes, and Analysis and Evaluation of Hydrogen Fuel-Related Issues 

SYNOPSIS: In 2015, the Board approved contracts for hydrogen station upgrades in the South Coast Air Basin using CEC revenue of \$6.69 million recognized in the Hydrogen Fueling Infrastructure Network Fund (63). This action is to reallocate \$989,661 from a previous award to upgrade the Mebtahi Harbor City hydrogen station to augment an existing contract with H2 Frontier, Inc., for Burbank hydrogen station upgrades. Further, this action is to change sites for two out of eight hydrogen stations, for which funding was previously awarded to Air Products and Chemicals, Inc. Finally, these actions are to execute contracts to cost-share projects from the Clean Fuels Fund (31) with: 1) Equilon Enterprises LLC DBA Shell Oil Products in an amount not to exceed \$300,000 to upgrade/replace equipment at the hydrogen station in Newport Beach; 2) Energy Independence Now in an amount not to exceed \$25,000 for analysis of renewable hydrogen pathways, economics and incentives; and 3) Bevilacqua Knight, Inc., in an amount not to exceed \$25,000 for evaluation of liquid hydrogen behavior activities.

COMMITTEE: Special Technology, August 19, 2016; Recommended for Approval

RECOMMENDED ACTIONS:

1. Authorize the Chairman to amend a contract with H2 Frontier, Inc., for hydrogen equipment upgrades at the Burbank station adding up to \$989,661 (for a total contract amount not to exceed \$1,920,461) from the Hydrogen Fueling Infrastructure Network Fund (63) using CEC revenue;
2. Authorize the Chairman to amend a contract with Air Products and Chemicals, Inc. to change sites for two out of eight hydrogen stations;
3. Authorize the Chairman to execute a contract with Equilon Enterprises LLC DBA Shell Oil Products in an amount not to exceed \$300,000 from the Clean Fuels Fund (31) to cost-share the upgrade/replacement of equipment at a hydrogen station in Newport Beach; and

4. Authorize the Executive Officer to execute contracts with the following from the Clean Fuels Fund (31):
 - a. Energy Independence Now to provide analysis of renewable hydrogen pathways, economics and incentives in an amount not to exceed \$25,000; and
 - b. Bevilacqua Knight, Inc., to provide an evaluation of liquid hydrogen behavior activities in an amount not to exceed \$25,000.

Jill Whynot
Chief Operating Officer

MMM:FM:NB:LHM

Background

In June 2013, the Board recognized \$6.69 million in revenue from CEC to upgrade and refurbish existing, publicly accessible hydrogen fueling stations. The SCAQMD subsequently released an RFP to solicit proposals to upgrade existing stations. In 2014 and 2015, the Board approved multiple contracts for hydrogen fueling station upgrades in our region using the CEC revenue. One award was to Mebtahi Station Services Inc. in the amount of \$989,661 for hydrogen equipment upgrades at the Harbor City station. Since the hydrogen equipment planned for upgrade at the Mebtahi station will not be able to operate for the length of time required under the CEC revenue grant, the station operator now plans to partner with a new equipment provider. Staff proposes to redirect this funding to H2 Frontier, Inc., which was previously awarded only a portion of the funding requested in its original proposal to upgrade the Burbank hydrogen station. Staff also proposes, and CEC concurs, that the Burbank station upgrade should meet current automaker expectations for a retail hydrogen station.

In October 2014, the SCAQMD executed a contract with Air Products and Chemicals, Inc., (APCI) to provide cofunding for eight new hydrogen stations in the South Coast Air Basin, including Diamond Bar. These stations were significantly cost-shared by CEC (through PON-09-608). Of these, two stations had site specific issues that APCI was unable to resolve resulting in both site owners refusing to process. Consequently, APCI proposed alternate sites in Rancho Palos Verdes and Santa Clarita. APCI proposed the North Irvine site relocation to Santa Clarita to enhance intrastate transportation and meet CEC cofunding priorities. CEC has approved these station sites and is in the process of amending their contract with APCI. APCI, in turn, plans to subcontract with FirstElement Fuel Inc. to build and operate these stations. Coverage of Orange County will not be negatively impacted by these site changes because there are several other stations either in development or proposed in Orange County (e.g., new stations in development include ones in Anaheim and Orange plus an upgraded station proposed for Newport Beach).

Finally, a hydrogen station originally sited in Folsom (Northern California), which was awarded cofunding by CEC (through PON-12-606) and the Bay Area AQMD, has also encountered site specific issues. Accordingly, the CEC has approved changing this station site to Southern California and is in the process of amending their contract with Linde, LLC, the original proposer. Linde plans to relocate the new equipment to the Shell station in Newport Beach. Equilon Enterprises LLC DBA Shell Oil Products (Shell) has requested cofunding to assist with the upgrade/replacement of the equipment at the Newport Beach hydrogen station.

Proposal

Burbank Hydrogen Station

The proposal submitted by H2 Frontier, Inc., to upgrade the Burbank hydrogen station was the highest scored proposal received under RFP #P2014-09, and H2 Frontier is eager and able to complete a full upgrade within CEC’s time requirements. The scope of the expanded project will include an upgrade of the compressor for faster back-to-back fills, installation of a new dual-pressure dispenser with credit card access, increased hydrogen storage capacity, the addition of a canopy over the dispenser, and signage at the station and off the nearby freeway. The fully upgraded station will meet SB 1505 requirements for supplying hydrogen from 33% renewable sources by using biogas. It will also strengthen the evolving hydrogen station network and improve consumer options in the eastern portion of the San Fernando Valley.

Hydrogen Station Site Changes

Upon execution of a modified contract between CEC and APCI, the SCAQMD contract with APCI will be amended to change the sites for two out of eight hydrogen stations, as follows:

Original Station Site	Proposed New Station Site
1200 Beryl Street Redondo Beach, CA 90277	28103 Hawthorne Blvd. Rancho Palos Verdes, CA 90275
5410 Walnut Avenue Irvine, CA 92604	24551 Lyons Avenue Santa Clarita, CA 91321

Cofunding Newport Beach Hydrogen Station

The existing hydrogen equipment at the Shell station in Newport Beach is nearing the end of its useful life. The new equipment provided by Linde, LLC, will be delivered and installed to extend the life of the hydrogen station and enhance refueling ability. The upgraded station will meet SB 1505 requirements for supplying hydrogen from 33% renewable sources by using biogas. It will also ensure this link in the hydrogen station network remains active.

Analysis & Evaluation of Hydrogen Fuel-Related Issues

Energy Independence Now (EIN) proposes to perform an analysis of renewable hydrogen pathways, economics and incentives. EIN will develop a white paper and presentation to engage the broader stakeholder community to support renewable hydrogen education and outreach. This project will be cost-shared by automakers and fuel providers.

Finally, U.S. DOE, under its Hydrogen Fueling Infrastructure Research and Station Technology (H2First) project, is funding activities at Sandia National Lab to evaluate liquid hydrogen behavior, and cofunding has been requested. Bevilacqua Knight, Inc., (BK_i) will administer the stakeholder funds from seven automakers, two hydrogen providers, and SCAQMD (if approved). The evaluation results will be used to inform and update the liquid hydrogen code development process with oversight by the Fire Protection Research Foundation of the National Fire Protection Association. This will ultimately enable development of larger capacity liquid hydrogen stations with reduced carbon footprints in denser urban areas within our region.

Sole Source Justification

Section VIII.B.2 of the Procurement Policy and Procedures identifies four major provisions under which a sole source award may be justified.

This request for sole source award with EIN is made under B.2.d(1): Projects including cost sharing by multiple sponsors. Project partners include automakers and fuel providers.

The request for sole source award with BK_i is made under B.2.d(1): Projects including cost sharing by multiple sponsors. Project partners include US DOE, Sandia National lab, automakers and fuel providers.

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 if the region hopes to meet state and federal air quality attainment standards. These projects will help ensure that sufficient hydrogen infrastructure is available to support the automaker roll out of fuel cell vehicles over the next few years and are included in the *Technology Advancement Office Clean Fuels Program 2016 Plan Update* under “Develop and Demonstrate Distributed Hydrogen Production and Fueling Stations.” SCAQMD’s Clean Fuels Program has been proactive in funding the development and demonstration of low emission, hydrogen fuel technologies. Hydrogen vehicles and refueling stations are necessary to comply with CARB’s ZEV regulation to reduce criteria pollutant emissions, and development of an extensive hydrogen fueling network in Southern California will accelerate the deployment of these cleaner vehicles.

Resource Impacts

The \$6.69 million grant CEC previously awarded to SCAQMD was recognized into the Hydrogen Fueling Infrastructure Network Fund (63). The contract amendment with H2 Frontier, Inc., will not exceed \$989,661 for a total contract amount of \$1,920,461, all of which is CEC pass-through funding. Total project costs to fully upgrade the Burbank hydrogen station are estimated at \$2,115,461, broken down as follows:

Project Partners	Proposed Funding
H2 Frontier, Inc.	\$195,000
SCAQMD (current contract)	\$930,800
SCAQMD (<i>requested</i>)	\$989,661
Total Project Costs	\$2,115,461

The contract with Shell will not exceed \$300,000 from the Clean Fuels Fund (31). Total project costs to upgrade the Shell station in Newport Beach with new equipment provided by Linde, LLC, are estimated at \$2,300,000. Proposed funding is broken down as follows:

Project Partners	Proposed Funding
Shell	\$300,000
Linde	\$320,000
CEC	\$1,380,000
SCAQMD (<i>requested</i>)	\$300,000
Total Project Costs	\$2,300,000

The contract with EIN will not exceed \$25,000 from the Clean Fuels Fund (31). Total project costs for the renewable hydrogen analysis are estimated at \$140,000. Proposed funding is broken down as follows:

Project Partners	Proposed Funding
Automakers: Honda, Toyota	\$50,000
Fuel Providers: Southern California Gas, Linde, Air Liquide, Hydrogenics	\$65,000
SCAQMD (<i>requested</i>)	\$25,000
Total Project Costs	\$140,000

The contract with BKi will not exceed \$25,000 from the Clean Fuels Fund (31). Total project costs for this year’s support of liquid hydrogen analysis are estimated at \$350,000. Proposed funding is broken down as follows:

Project Partners	Proposed Funding
U.S. DOE	\$175,000
7 Automakers*, Linde, Shell	\$150,000
SCAQMD (<i>requested</i>)	\$25,000
Total	\$350,000

* Daimler, GM, Honda, Hyundai, Nissan, Toyota, VW

Sufficient funds are available from the Clean Fuels Fund (31) for these projects and services. The Clean Fuels Fund 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.