



South Coast Air Quality Management District

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TO: SCAQMD Technology Committee
Joe Buscaino, Chair
Sheila Kuehl, Vice Chair
Larry McCallon, Judith Mitchell, Dwight Robinson, Janice Rutherford

FROM: Matt Miyasato, DEO, Science & Technology Advancement

TECHNOLOGY COMMITTEE

21865 Copley Drive, Diamond Bar, CA 91765
June 16, 2017 ♦ 12:00 p.m. ♦ Conference Room – CC-8

TELECONFERENCE LOCATION

Los Angeles City Hall	385 N. Arrowhead Avenue
200 N. Spring Street	5th Floor, Citrus Room
Room 410	San Bernardino, CA 92415
Los Angeles, CA 90012	

(The public may participate at any location listed above.)

Call-in for listening purposes only is available by dialing:

Toll Free: 866-244-8528

Listen Only Passcode: 5821432

In addition, a webcast is available for viewing and listening at:

<http://www.aqmd.gov/home/library/webcasts>

AGENDA

JULY BOARD AGENDA ITEMS FOR ACTION/DISCUSSION

1. Approve Cargo Handling Equipment Projects Under Proposition 1B-Goods Movement Program

On February 3, 2017, the Board approved issuance of a Program Announcement for ships at berth and cargo handling equipment projects under the Proposition 1B-Goods Movement Program. The Program Announcement closed on March 31, 2017. Staff has completed the evaluation of applications and recommends approval of awards for projects involving the replacement of diesel cargo handling equipment with zero emission technology and associated charging infrastructure. This action is to execute contracts for eligible cargo handling equipment projects, subject to

Greg Ushijima
AQ Specialist

CARB's approval, in an amount not to exceed \$2,690,000 from the Proposition 1B-Goods Movement Program Fund (81).

2. Recognize and Transfer Funds, Execute Agreements for Installation of Air Filtration Systems and Reimburse General Fund for Administrative Costs

Naveen Berry
Technology
Demonstration
Manager

The California Attorney General's Office and SSA Terminals are executing a Supplemental Environmental Project (SEP) agreement to install air filtration systems at school(s) in Environmental Justice communities near the Port of Long Beach. Both parties have requested that SCAQMD act as the SEP Implementer for this project. These actions are to recognize up to \$1,250,000 from SSA Terminals into the Air Filtration Fund (75), transfer the same amount as a temporary loan from the Clean Fuels Fund (31) to the Air Filtration Fund (75), and execute an agreement with SSA Terminals for SCAQMD to act as the SEP Implementer for installation of air filtration systems. These actions are to also execute a contract with IQAir North America for installation of air filtration systems in an amount not to exceed \$1,187,500 and reimburse the General Fund for administrative costs up to \$62,500 from the Air Filtration Fund (75).

3. Recognize Revenue and Amend Award to Develop and Demonstrate Fuel Cell Heavy-Duty Truck

Joseph Impullitti
Program
Supervisor

In October 2016, the Board recognized up to \$283,495 from the Ports' Technology Advancement Program (TAP) to develop and demonstrate a fuel cell heavy-duty truck with Hydrogenics USA Inc. Subsequently, in April 2017, the Port of Los Angeles advised staff that they would be unable to cost-share the project using TAP funding, but the Port of Long Beach (POLB) remains committed to cost-sharing the project. These actions are to recognize revenue up to \$157,500 from the POLB into the Advanced Technology Goods Movement Fund (61) and amend the award to Hydrogenics USA Inc. to substitute the \$283,495 from the Ports' TAP with \$157,500 from the POLB and \$125,995 from the Clean Fuels Program Fund (31).

4. Execute Contract to Develop and Demonstrate Battery Electric Switcher Locomotive

Adewale Oshinuga
Program
Supervisor

Emissions from locomotives are projected to increase over the next decade, and development and early commercialization of zero emission locomotive technologies is a critical component for achieving the federal ambient air quality standards. Rail Propulsion Systems is currently developing a zero emission, battery electric switcher locomotive and has partnered with Coast Rail Services, EV Grid, VACON and Tractive Power to demonstrate this technology. Staff proposes to cost-share the project. This action is to execute a contract with Rail Propulsion Systems to develop and demonstrate a zero emission, battery electric switcher locomotive in an amount not to exceed \$210,000 from the Clean Fuels Program Fund (31).

5. Recognize Revenue, Approve Awards for School Bus Replacements and Reimburse General Fund for Administrative Costs

Fred Minassian
Assistant Deputy
Executive Officer

As part of the Carl Moyer Program, CARB has set aside Fiscal Year 2016-17 (Year 19) State Reserve funds for replacement of school buses that qualify for particulate matter extension under California's On-Road Heavy-Duty Diesel Vehicle Regulation. Under this program, the SCAQMD has been selected by CARB to receive State Reserve funds to replace eight older diesel school buses. These actions are to recognize up to \$1,245,867 in State Reserve funds from CARB into the Carl Moyer Program SB 1107 Multidistrict Fund (32) and to replace eight older diesel school buses, as approved by CARB, with new alternative fuel buses up to \$1,168,000 and reimburse the General Fund for administrative costs up to \$77,867 from the Carl Moyer Program SB 1107 Multidistrict Fund (32).

6. Amend Contract for Renewable Natural Gas Production and Vehicle Demonstration Project

Phil Barroca
AQ Specialist

In September 2016, the Governing Board awarded a contract to KORE Infrastructure (KORE) to construct and demonstrate a renewable natural gas production facility and fueling station in Rialto. Since then, the Southern California Gas Company (SoCalGas) has separately funded Kore to demonstrate their technology and evaluate pipeline injection at a SoCalGas site in Los Angeles. In order to reduce duplicative efforts and additional costs, Kore has requested to move the original project from Rialto to Los Angeles. This action is to amend the Kore contract to complete the renewable natural gas fueling station and demonstration in near-zero natural gas engine vehicles at the Los Angeles site.

INFORMATIONAL ITEM

7. California Fuel Cell Partnership Executive Board Meeting Agenda and Quarterly Updates

Lisa Mirisola
Program
Supervisor

This report provides the California Fuel Cell Partnership Executive Board Agenda for the meeting held April 25, 2017, and provides updates for quarters beginning October 2016 and January 2017.

8. Other Business

Any member of the committee, or its staff, on his or her own initiative or in response to questions posed by the public, may ask a question for clarification; may make a brief announcement or report on his or her own activities, provide a reference to staff regarding factual information, request staff to report back at a subsequent meeting concerning any matter, or may take action to direct staff to place a matter of business on a future agenda. (Govt Code Section 54954.2)

9. Public Comment Period

Members of the public may address this body concerning any agenda item before or during consideration of that item (Govt. Code Section 54954.3). All agendas for regular meetings are posted at District Headquarters, 21865 Copley Drive, Diamond Bar, California, at least 72 hours in advance of a regular meeting. At the end of the regular meeting agenda, an opportunity is

also provided for the public to speak on any subject within this body's authority. Speakers may be limited to three (3) minutes each.

Next Meeting: July 21, 2017 at SCAQMD Headquarters in CC-8

Document Availability

All documents (i) constituting non-exempt public records; (ii) relating to an item on the agenda for a regular meeting; and (iii) having been distributed to at least a majority of the Technology Committee after the agenda is posted, are available prior to the meeting for public review at the South Coast Air Quality Management District Public Information Center, 21865 Copley Drive, Diamond Bar, CA 91765.

Americans with Disabilities Act

The agenda and documents in the agenda packet will be made available, upon request, in appropriate alternative formats to assist persons with a disability. Disability-related accommodations will also be made available to allow participation in the Technology Committee meeting. Any accommodations must be requested as soon as practicable. Requests will be accommodated to the extent feasible. Please contact Pat Krayser at 909-396-3248 from 7:00 a.m. to 5:30 p.m., Tuesday through Friday, or send the request to pkrayser@aqmd.gov.

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DRAFT
Technology Committee Agenda #1

BOARD MEETING DATE: July 7, 2017

AGENDA NO.

PROPOSAL: Approve Cargo Handling Equipment Projects Under Proposition 1B-Goods Movement Program

SYNOPSIS: On February 3, 2017, the Board approved issuance of a Program Announcement for ships at berth and cargo handling equipment projects under the Proposition 1B-Goods Movement Program. The Program Announcement closed on March 31, 2017. Staff has completed the evaluation of applications and recommends approval of awards for projects involving the replacement of diesel cargo handling equipment with zero emission technology and associated charging infrastructure. This action is to execute contracts for eligible cargo handling equipment projects, subject to CARB's approval, in an amount not to exceed \$2,690,000 from the Proposition 1B-Goods Movement Program Fund (81).

COMMITTEE: Technology, June 16, 2017; Recommended for Approval

RECOMMENDED ACTION:

Authorize the Executive Officer to execute contracts for cargo handling equipment projects, as listed in the attached table, subject to CARB approval, in an amount not to exceed \$2,690,000 from the Proposition 1B-Goods Movement Program Fund (81).

Wayne Nastri
Executive Officer

MMM:FM:VW:GAU

Background

Proposition 1B authorizes \$1 billion to CARB for the Goods Movement Emission Reduction Program. Projects funded by this Program must achieve early or extra emission reductions not otherwise required by rules or regulations. To date, CARB has granted close to \$740 million to local agencies for various goods movement projects. SCAQMD has received about \$400 million of these funds for projects involving heavy-duty diesel trucks, locomotives and ships at berth. The vast majority of these projects are currently operational, providing significant emission reduction benefits to the region.

In September 2015, CARB approved new funding awards for the Program including \$14.1 million for ships at berth and cargo handling equipment projects. In July 2016, the Board approved awards for ships at berth and cargo handling equipment projects totaling \$12,484,968. However, one large project was subsequently deemed ineligible by CARB because the proposed technology was not verified; therefore, it could not be funded under this program. In February 2017, to solicit additional projects for ships at berth and cargo handling equipment to use the remaining \$6.1 million in funds, the Board approved issuance of a second Program Announcement (#PA2017-03), which closed on March 31, 2017. Staff has completed the evaluation of these projects.

Outreach

Relative to the Proposition 1B-Goods Movement Program projects, and in accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the PA and inviting bids was published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective method of outreach to the South Coast Basin.

Additionally, potential bidders may have been notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the PA has been emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website (<http://www.aqmd.gov>). Finally, staff also purchased a mailing list and notified approximately 55,000 potential bidders in the South Coast Air Basin.

Proposal

This action is to execute contracts for cargo handling equipment projects, as listed in the attached table, subject to CARB approval, in an amount not to exceed \$2,690,000 from the Proposition 1B-Goods Movement Program Fund (81). The SCAQMD did receive one application for a ships-at-berth project; however, the proposed technology was not verified and therefore this project was deemed ineligible. The eligible cargo handling equipment projects have been submitted to CARB for compliance check-and-rank list approval. Staff will work with CARB to identify projects, subject to SCAQMD Board approval, to utilize the remaining Proposition 1B funds.

Benefits to SCAQMD

The successful implementation of the proposed cargo handling equipment projects will reduce NOx, PM and other pollutant emissions in a cost-effective and expeditious manner, which will help achieve the goals of the AQMP. The new equipment and vehicles funded under this Program are expected to operate for many years providing long-term emission reduction benefits in the region. The total estimated emission reductions from the proposed projects in the attached table are 11.9 tons per year of NOx and 0.4 tons per year of PM2.5.

Resource Impacts

Total funding for the proposed projects shall not exceed \$2,690,000 from the Proposition 1B-Goods Movement Program Fund (81).

Attachment

Cargo Handling Equipment Projects

Cargo Handling Equipment Projects

Applicant/Location	Project Type	Number of Units	Prop. 1B Funds Requested	Total Maximum Prop. 1B Award
Anderson Hay and Grain Company, Inc./Wilmington	Replace diesel forklifts with zero emission forklifts	4	\$60,000	\$60,000
Total Terminals International, LLC/ POLB	Replace diesel yard trucks with zero emission yard trucks	3	\$300,000	\$1,445,000
	Chargers	3	\$45,000	
	Convert/replace diesel Rubber-Tired Gantry cranes to electric power	2	\$1,000,000	
	Replace diesel lifts with zero emission lifts	2	\$100,000	
WM Bolthouse Farms Inc./ Bakersfield	Replace diesel yard trucks with zero emission yard trucks	3	\$300,000	\$345,000
	Chargers	3	\$45,000	
Dargus Leasing Corp./ Pomona	Replace diesel lifts with zero emission lifts	4	\$200,000	\$200,000
Eagle Marine Services, Ltd./ POLA	Replace diesel lifts with zero emission lifts	8	\$640,000	\$640,000
Total Prop. 1B Awards for Cargo Handling Equipment Projects:				\$2,690,000

Agenda Item #1

Greg Ushijima

Approve Cargo Handling Equipment Projects
Under Proposition 1B-Goods Movement Program

Background

- In Sept 2015, CARB approved grants to SCAQMD under Proposition 1B-Goods Movement Program including \$137.9 million for Los Angeles/Inland Empire trade corridor
- In Feb 2017, the Board released #PA2017-03 for Ships at Berth and Cargo Handling Equipment for \$6.1 million

Background (cont'd)

- PA closed on March 31, 2017
- Staff completed the evaluations and are working with CARB on the compliance check approvals prior to executing contracts



Proposals – Cargo Handling Equipment

Applicant / Location	Project Type	Number of Units	Funds Requested	Max. Prop. 1B Award
Anderson Hay and Grain Company, Inc./Wilmington	Replace diesel forklifts with zero emission forklifts	4	\$60,000	\$60,000
Total Terminals International, LLC	Replace diesel yard trucks with zero emission yard trucks	3	\$300,000	\$1,445,000
	Chargers	3	\$45,000	
	Convert/replace diesel rubber-tired gantry cranes to electric power	2	\$1,000,000	
	Replace diesel lifts with zero emission lifts	2	\$100,000	

Proposals – Cargo Handling Equipment (cont'd)

Applicant	Project Type	Number of Units	Funds Requested	Max. Prop. 1B Award
WM Bolthouse Farms Inc.	Replace diesel yard trucks with zero emission yard trucks	3	\$300,000	\$345,000
	Chargers	3	\$45,000	
Dargus Leasing Corp.	Replace diesel lifts with zero emission lifts	4	\$200,000	\$200,000
Eagle Marine Services, Ltd.	Replace diesel lifts with zero emission lifts	8	\$640,000	\$640,000
Total				\$2,690,000

Recommended Action

- Execute contracts for cargo handling equipment projects, subject to CARB approval, for \$2,690,000 from the Proposition 1B—Goods Movement Program Fund

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DRAFT
Technology Committee Agenda #2

BOARD MEETING DATE: July 7, 2017

AGENDA NO. x

PROPOSAL: Recognize and Transfer Funds, Execute Agreements for Installation of Air Filtration Systems and Reimburse General Fund for Administrative Costs

SYNOPSIS: The California Attorney General's Office and SSA Terminals are executing a Supplemental Environmental Project (SEP) agreement to install air filtration systems at school(s) in Environmental Justice communities near the Port of Long Beach. Both parties have requested that SCAQMD act as the SEP Implementer for this project. These actions are to recognize up to \$1,250,000 from SSA Terminals into the Air Filtration Fund (75), transfer the same amount as a temporary loan from the Clean Fuels Fund (31) to the Air Filtration Fund (75), and execute an agreement with SSA Terminals for SCAQMD to act as the SEP Implementer for installation of air filtration systems. These actions are to also execute a contract with IQAir North America for installation of air filtration systems in an amount not to exceed \$1,187,500 and reimburse the General Fund for administrative costs up to \$62,500 from the Air Filtration Fund (75).

COMMITTEE: Technology, June 16, 2017; Recommended for Approval

RECOMMENDED ACTIONS:

1. Recognize, upon receipt, up to \$1,250,000 from SSA Terminals into the Air Filtration Fund (75);
2. Transfer up to \$1,250,000 as a temporary loan from the Clean Fuels Fund (31) into the Air Filtration Fund (75);
3. Authorize the Executive Officer to execute an agreement with SSA Terminals for SCAQMD to act as the SEP Implementer for installation of air filtration systems;
4. Authorize the Chairman to execute a contract with IQAir North America for installation of air filtration systems at one or more schools in an amount not to exceed \$1,187,500 from the Air Filtration Fund (75); and

5. Reimburse the General Fund from the Air Filtration Fund (75) for administrative costs up to \$62,500 as needed to implement the air filtration project.

Wayne Natri
Executive Officer

MMM:FM:NB:PSK

Background

The California Attorney General's Office and SSA Terminals are executing a Supplemental Environmental Project (SEP) agreement to install air filtration systems at one or more schools in Environmental Justice communities near the Port of Long Beach. Both parties have requested SCAQMD act as the SEP Implementer for this project, which must be completed by July 2019.

IQAir North America was previously selected through two separate competitive bid processes in 2011 and 2013 for air filtration projects, and last year staff worked with CARB staff on a technology status check to ensure no new, more effective technologies had come on the market. Furthermore, IQAir was the only qualified manufacturer of high performance filters and stand-alone units to meet the performance standards in SCAQMD's 2009 air filtration pilot study as well as through a national testing opportunity conducted by the University of California Riverside CE-CERT at Sunnyslope Elementary School in 2010. To date, through its contractor IQAir, SCAQMD has installed air filtration systems at 71 schools and community centers. Performance standards from SCAQMD's air filtration pilot study include an average removal efficiency of at least 85 percent for ultrafine PM and black carbon, no pressure drop for panel filters, no ozone generation and a noise level below 45 decibels for stand-alone units.

Proposal

Staff from the California Attorney General's office have requested that selected schools receiving air filtration systems be in Environmental Justice communities close to the Port of Long Beach or other sources of diesel PM as well as project completion by July 2019. Staff will execute a new Memorandum of Agreement (MOA) with the Long Beach Unified School District and utilize an existing MOA with the Los Angeles Unified School District, providing access to any schools in these districts, as well as execute any necessary MOAs with other school districts to provide site access to schools.

The proposed schedule for installation of air filtration systems in one or more schools in Environmental Justice communities near the Port of Long Beach is as follows:

Date	Event
July 2017	Board Approval
July 2017	Anticipated Contract Award
July-August 2017	Selection of School(s), Site Assessments
August-December 2017	Installation
December 2017	Final Report

These actions are to recognize up to \$1,250,000 from SSA Terminals into the Air Filtration Fund (75), transfer the same amount as a temporary loan from the Clean Fuels Fund (31) to the Air Filtration Fund (75), and execute an agreement with SSA Terminals for SCAQMD to act as the SEP Implementer for installation of air filtration systems.

These actions are to also execute a contract with IQAir North America for installation of air filtration systems in an amount not to exceed \$1,187,500 and reimburse the General Fund for administrative costs up to \$62,500 from the Air Filtration Fund (75).

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 a sole source award is made under provision B.2.c(1): The desired services are available from only the sole-source based upon the unique experience and capabilities of the proposed contractor or contractor team. IQAir is the only manufacturer of high performance panel filters and stand-alone units identified by SCAQMD and CARB Research Division staff that meet the performance standards in SCAQMD's 2009 air filtration pilot study. Staff has also consulted with CARB Research Division staff to confirm that no new manufacturers of air filtration technologies that meet or exceed the performance standards in the pilot study have been identified since the last RFP process in 2013.

Benefits to SCAQMD

This project will reduce children's exposure to criteria and toxic pollutants and ultrafine PM. Health studies have determined that fine and ultrafine PM, including diesel PM, present the greatest air pollution health risk to sensitive receptors in Environmental Justice communities in Southern California.

Resource Impacts

Upon receipt, up to \$1,250,000 from the SEP revenue will be recognized into the Air Filtration Fund (75). Until receipt, up to \$1,250,000 from the Clean Fuels Fund (31) will be used as a temporary loan. Of the \$1,250,000 SEP revenue, the contract with IQAir North America to install air filtration systems will not exceed \$1,187,500 and reimbursement of administrative costs will not exceed \$62,500.

Agenda Item #2

Naveen Berry

Recognize and Transfer Funds,
Execute Agreements for Installation of Air
Filtration Systems and Reimburse General
Fund for Administrative Costs

Background

- California Attorney General's Office and SSA Terminals executing Supplemental Environmental Project (SEP) to install air filtration systems at schools - \$1,250,000
- SCAQMD as SEP implementer
 - Previous project experience
 - Board-approved contractor



Background (cont'd)

- SCAQMD selected IQAir as air filtration contractor
 - Two prior competitive bid processes
 - National testing opportunity
 - Worked with CARB to conduct recent technology review
- SCAQMD/CARB staff not aware of another technology meeting performance standards of pilot study



Air Filtration Technologies

- High performance panel filters + stand alone units
- 90% average removal efficiency ultrafine PM, black carbon
- Noise level below 45 dB(A) for stand-alone units (no interference with classroom learning)



Proposal

- SCAQMD as SEP implementer – MOA with SSA Terminals
- Identify school(s) near Port of Long Beach
- Work with contractor
 - Installation
 - Operational/maintenance needs, including replacement filters

Proposed Schedule

Date	Task
Jul 2017	Board approval
Jul 2017	Anticipated Contract Award
Jul – Aug 2017	School selection, site assessments
Aug – Dec 2017	Installation
Dec 2017	Final report

Recommended Actions

- Recognize, upon receipt, \$1,250,000 from SSA Terminals into Air Filtration Fund (75)
- Transfer up to \$1,250,000 as temporary loan from Clean Fuels Fund (31) into Air Filtration Fund (75)
- Authorize Executive Officer to execute agreement with SSA Terminals for SCAQMD to act as SEP implementer to install air filtration systems

Recommended Actions

- Execute contract with IQAir for installation of air filtration systems in an amount not to exceed \$1,187,500 from Air Filtration Fund (75)
- Reimburse the General Fund from the Air Filtration Fund (75) for administrative costs up to \$62,500 as needed to implement the air filtration project

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DRAFT
Technology Committee Agenda #3

BOARD MEETING DATE: July 7, 2017

AGENDA NO.

PROPOSAL: Recognize Revenue and Amend Award to Develop and Demonstrate Fuel Cell Heavy-Duty Truck

SYNOPSIS: In October 2016, the Board recognized up to \$283,495 from the Ports' Technology Advancement Program (TAP) to develop and demonstrate a fuel cell heavy-duty truck with Hydrogenics USA Inc. Subsequently, in April 2017, the Port of Los Angeles advised staff that they would be unable to cost-share the project using TAP funding, but the Port of Long Beach (POLB) remains committed to cost-sharing the project. These actions are to recognize revenue up to \$157,500 from the POLB into the Advanced Technology Goods Movement Fund (61) and amend the award to Hydrogenics USA Inc. to substitute the \$283,495 from the Ports' TAP with \$157,500 from the POLB and \$125,995 from the Clean Fuels Program Fund (31).

COMMITTEE: Technology, June 16, 2017; Recommended for Approval

RECOMMENDED ACTIONS:

1. Recognize, upon receipt, up to \$157,500 from the Port of Long Beach into the Advanced Technology Goods Movement Fund (61) for development and demonstration of zero emission drayage trucks; and
2. Amend the award to Hydrogenics USA Inc. to substitute the \$283,495 from the Ports' TAP with \$157,500 from the Advanced Technology Goods Movement Fund (61) and \$125,995 from the Clean Fuels Program Fund (31) to develop a fuel cell range-extended drayage truck.

Wayne Nastri
Executive Officer

CSL:MMM:NB:JI

Background

In October 2016, the Board awarded a contract to Hydrogenics USA Inc. to develop a fuel cell range-extended drayage truck in an amount not to exceed \$1,109,279 from the

Advanced Technology Goods Movement Fund (61). The Board's action included recognizing \$283,495 from the Ports' Technology Advancement Program (TAP) and reallocating DOE funds of \$825,784 previously awarded to another contractor who had withdrawn from the project. The Board's action also transferred \$283,495 as a temporary loan from the Clean Fuels Program Fund (31) into the Advanced Technology Goods Movement Fund (61) until the Ports' TAP cost-share was received. Subsequently, in April 2017, the Port of Los Angeles advised staff that they would be unable to cost-share the project using TAP funding, but the Port of Long Beach (POLB) remains committed to cost-sharing the project and has offered \$157,500 as pass-through funds to continue participation. However, this leaves a shortfall of \$125,995 for the fuel cell truck project.

Proposal

This action is to recognize, upon receipt, up to \$157,500 from the POLB into the Advanced Technology Goods Movement Fund (61) for development and demonstration of zero emission drayage trucks. This action is to also amend an award to Hydrogenics USA Inc. to substitute the \$283,495 from the Ports' TAP funds with \$157,500 from the Advanced Technology Goods Movement Fund (61) and \$125,995 from the Clean Fuels Fund (31) to develop a fuel cell range-extended drayage truck. Of the \$283,495 previously identified as a temporary loan from the Clean Fuels Program Fund (31), \$125,995 will now be allocated as cost-share directly from the Clean Fuels Program Fund (31), while the remaining amount will remain a temporary loan until the POLB cost-share is received.

Benefits to SCAQMD

Projects to support implementation of various clean fuel vehicle incentive programs are included in the *Technology Advancement Office Clean Fuels Program 2017 Plan Update* under the categories of "Electric/Hybrid Technologies & Infrastructure" and "Hydrogen and Fuel Cell Technologies and Infrastructure". This project is to develop and demonstrate zero emission drayage trucks with fuel cell range extended technologies for goods movement operations. 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.

Resource Impacts

The \$157,500 in revenue from the POLB will be recognized into the Advanced Technology Goods Movement Fund (61), and the contract with Hydrogenics will not exceed \$1,109,279, comprised of \$983,284 from the Advanced Technology Goods Movement Fund (61) and \$125,995 from the Clean Fuels Fund (31). The total cost for this proposed project is \$2,433,553, as follows:

Project Partner	Funding Amount	Percent
CEC	\$983,858	40
DOE	\$825,784	34
Hydrogenics (in-kind)	\$340,416	14
POLB	\$157,500	7
SCAQMD (<i>requested</i>)	\$125,995	5
Total	\$2,433,553	100%

Of the \$283,495 previously identified as a temporary loan from the Clean Fuels Program Fund (31), \$125,995 will now be allocated as cost-share directly from the Clean Fuels Program Fund (31), while \$157,500 will remain a temporary loan from the Clean Fuels Program Fund (31) to the Advanced Technology Goods Movement fund (61) until the POLB cost-share is received.

Sufficient funds are available 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.

Agenda Item #3

Joseph Impullitti

Recognize Revenue and Amend Award to
Develop and Demonstrate Fuel Cell
Heavy-Duty Truck

Background

- In August 2016, Hydrogenics USA Inc. proposed to build and demonstrate a fuel cell range extended Class 8 truck for the Zero Emission Cargo Transport (ZECT) project
- In October 2016, the Board awarded a contract to Hydrogenics USA Inc. to cost-share this project.



Background (cont'd)

- The Board's action included recognizing revenue of \$283,495 from the Ports TAP for the Hydrogenics ZECT project
- In April 2017, POLA informed staff they would be unable to cost-share the Hydrogenics project using the TAP funding
- POLB remains committed to cost-sharing the Hydrogenics project but there is a \$125,995 funding shortfall



Proposal

Substitute the Ports TAP funds of \$283,495 with:

- \$157,500 from POLB; and
- \$125,995 from the Clean Fuels Program Fund (31) to cost-share the Hydrogenics project



Proposed Project Funding

Project Partner	Funding Amount	Percent
CEC	\$983,858	40
DOE	\$825,784	34
Hydrogenics (in-kind)	\$340,416	14
POLB	\$157,500	7
SCAQMD (<i>requested</i>)	\$125,995	5
Total	\$2,433,553	100%

Recommended Actions

- Recognize up to \$157,500 from POLB into the Advanced Technology Goods Movement Fund (61) for development and demonstration of zero emission drayage trucks
- Amend the award to Hydrogenics USA Inc. to substitute the \$283,495 from the Ports' TAP with \$157,500 from the POLB and \$125,995 from the Clean Fuels Program Fund (31) to cost-share the project

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DRAFT
Technology Committee Agenda #4

BOARD MEETING DATE: July 7, 2017

AGENDA NO.

PROPOSAL: Execute Contract to Develop and Demonstrate Battery Electric Switcher Locomotive

SYNOPSIS: Emissions from locomotives are projected to increase over the next decade, and development and early commercialization of zero emission locomotive technologies is a critical component for achieving the federal ambient air quality standards. Rail Propulsion Systems is currently developing a zero emission, battery electric switcher locomotive and has partnered with Coast Rail Services, EV Grid, VACON and Tractive Power to demonstrate this technology. Staff proposes to cost-share the project. This action is to execute a contract with Rail Propulsion Systems to develop and demonstrate a zero emission, battery electric switcher locomotive in an amount not to exceed \$210,000 from the Clean Fuels Program Fund (31).

COMMITTEE: Technology, June 16, 2017; Recommended for Approval

RECOMMENDED ACTION:

Authorize the Executive Officer to execute a contract with Rail Propulsion Systems to develop and demonstrate a zero emission, battery electric switcher locomotive in an amount not to exceed \$210,000 from the Clean Fuels Program Fund (31).

Wayne Natri
Executive Officer

MMM:FM:NB:AAO

Background

Diesel locomotives are projected to be one of the five largest contributors to NOx emissions by 2022, even as the legacy fleet of older and higher polluting locomotives are retired and replaced with locomotives meeting the most stringent current standard. Significant emission reductions beyond those achieved from the cleanest diesel locomotive technologies are still needed to meet the federal ozone air quality standards. Zero and near-zero emission locomotive technologies show promise as a cleaner alternative with the added benefit of lower operational (fuel) costs.

Rail Propulsion Systems is currently developing a zero emission, battery electric switcher locomotive for rail equipped facilities and small switch yards, and has partnered with Coast Rail Services, EV Grid, VACON and Tractive Power to demonstrate this technology. The U.S. EPA is cofunding the project from the Section 105 Clean Air Technology Initiative (CATI), the funds for which were recognized by the Board at its April 7, 2017 meeting. CATI was established by the U.S. EPA, CARB, San Joaquin Valley Air Pollution Control District and SCAQMD to identify and implement emission reduction projects in San Bernardino and Boyle Heights where residents are disproportionately affected by emissions of diesel exhaust from the goods movement corridors and from diesel activities at the Ports, warehouses and rail yards.

Proposal

This project is to develop and demonstrate a zero emission, battery electric switcher locomotive. Rail Propulsion Systems will perform the following: 1) design and fabricate a battery pack and rack system; 2) modify an existing switcher locomotive to integrate the battery pack and rack system as well as electronic control systems; 3) install charging infrastructure for the locomotive; and 4) perform substantial validation and durability testing to confirm the robustness of their design. Once the locomotive is developed, Rail Propulsion Systems will test and optimize the locomotive in preparation for a field demonstration. The project will ultimately conclude after the locomotive has been placed in a typical switcher locomotive operation at the Coast Rail Services rail yard to fully validate its performance, durability and reliability.

Sole Source Justification

Section VIII.B.3 of the Procurement Policy and Procedure identifies four provisions by which sole source awards may be justified when contracts are funded in whole or in part by federal funds. This award is made under provision B.3.c: The awarding federal agency authorizes noncompetitive proposals. The proposed award to Rail Propulsion Systems will be treated as a sub-award and does not require a competitive solicitation.

Benefits to SCAQMD

The proposed project supports the implementation of advanced alternative fuel technology that could potentially be used to further reduce NOx emissions from locomotives. In addition, the development and successful deployment of these zero emission switcher locomotives will promote their acceptance by railroads and facilitate their deployment at rail yards in the South Coast Air Basin as well as assist the SCAQMD to attain its clean air goals.

The proposed project is included in the *Technology Advancement Office Clean Fuels Program 2017 Plan Update* under the categories “Electric/Hybrid Technologies & Infrastructure” and “Emission Control Technologies”.

Resource Impacts

On April 7, 2017, the Board recognized U.S. EPA CATI funds of \$500,000 into the Clean Fuels Program Fund (31), noting the remaining \$210,000 would be allocated to a future project. The contract with Rail Propulsion Systems will be executed upon receipt of the U.S. EPA funds, up to the amount of the available funding received. The proposed project budget is approximately \$925,000, as follows:

Funding Source	Funding Amount	Percent
U.S. EPA	\$210,000	23
Rail Propulsion Systems (<i>in-kind</i>)	\$715,000	77
Total	\$925,000	100

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.

Agenda Item #4

Adewale Oshinuga

Execute Contract to Develop and Demonstrate
Battery Electric Switcher Locomotive

Background

- Battery and power electronic technology improving rapidly
- Opportunity for battery-powered locomotives projects
- On April 7, 2017, Board recognized U.S. EPA Clean Air Technology Initiative (CATI) funds for \$500,00 for diesel reduction projects
 - \$290,000 to assess aftertreatment technology for near-zero NOx emission diesel engines
 - \$210,000 for future project



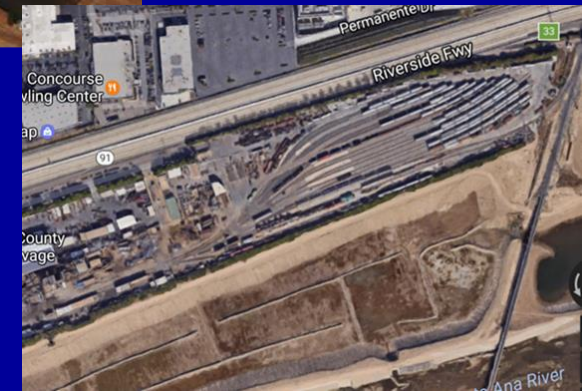
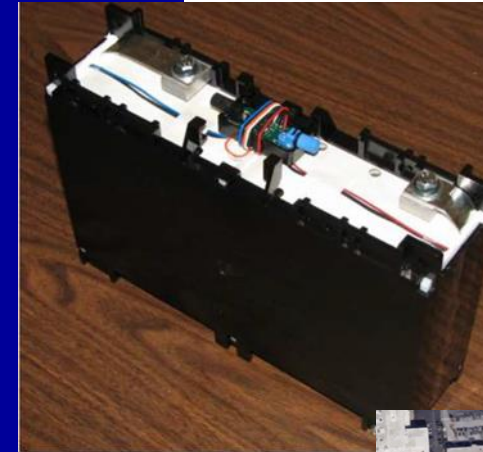
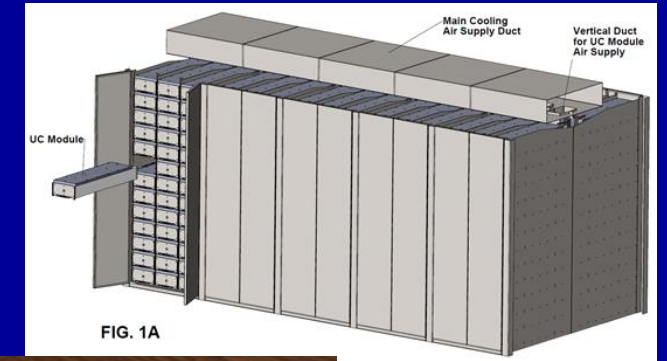
Proposal

- Design and fabricate battery pack and rack system
- Modify existing switcher locomotive
- Integrate battery pack and electronic system with modified switcher locomotive
- Perform system validation
- Install charging infrastructure
- Conduct in-field demonstration of locomotive



Partners

- Rail Propulsion Systems— developer/integrator
- EV Grid – battery modules and engineering support
- VACON – power electronic modules
- Tractive Power – engineering support and OEM
- Coast Rail Services – rail yard for demonstration



Proposed Funding

	<u>Funding</u>	<u>Percent</u>
SCAQMD (U.S. EPA)	\$210,000	23
Rail Propulsion Systems	\$715,000	77
TOTAL	\$925,000	100

Recommended Action

Authorize the Executive Officer to execute a contract with Rail Propulsion Systems to develop and demonstrate a zero emission, battery electric switcher locomotive in an amount not to exceed \$210,000 from the Clean Fuels Program Fund (31)

[Go to SLIDES](#)

DRAFT
Technology Committee Agenda #5

BOARD MEETING DATE: July 7, 2017

AGENDA NO.

PROPOSAL: Recognize Revenue, Approve Awards for School Bus Replacements and Reimburse General Fund for Administrative Costs

SYNOPSIS: As part of the Carl Moyer Program, CARB has set aside Fiscal Year 2016-17 (Year 19) State Reserve funds for replacement of school buses that qualify for particulate matter extension under California's On-Road Heavy-Duty Diesel Vehicle Regulation. Under this program, the SCAQMD has been selected by CARB to receive State Reserve funds to replace eight older diesel school buses. These actions are to recognize up to \$1,245,867 in State Reserve funds from CARB into the Carl Moyer Program SB 1107 Multidistrict Fund (32) and to replace eight older diesel school buses, as approved by CARB, with new alternative fuel buses up to \$1,168,000 and reimburse the General Fund for administrative costs up to \$77,867 from the Carl Moyer Program SB 1107 Multidistrict Fund (32).

COMMITTEE: Technology, June 16, 2017; Recommended for Approval

RECOMMENDED ACTIONS:

1. Recognize, upon receipt, up to \$1,245,867 in State Reserve funds from CARB into the Carl Moyer Program SB 1107 Multidistrict Fund (32);
2. Authorize the Chairman to execute a contract with the Los Angeles Unified School District to replace eight older diesel school buses, as approved by CARB, with new alternative fuel buses in an amount not to exceed \$1,168,000 from the Carl Moyer Program SB 1107 Multidistrict Fund (32); and
3. Reimburse the General Fund for administrative costs up to \$77,867 from State Reserve funds in the Carl Moyer Program SB 1107 Multidistrict Fund (32).

Wayne Nastri
Executive Officer

Background

As part of the Carl Moyer Program, CARB has set aside Fiscal Year 2016-17 (Year 19) State Reserve funds for replacement of school buses that qualify for particulate matter extension under California's On-Road Heavy-Duty Diesel Vehicle Regulation. A PM extension can be granted to school buses that are required to be equipped with PM filters when there are no suitable PM filters for the vehicle. However, CARB's goal is to replace those vehicles whenever possible. Under this program, the SCAQMD has been selected by CARB to receive State Reserve funds to replace eight older diesel school buses owned and operated by the Los Angeles Unified School District (LAUSD).

Proposal

These actions are to recognize, upon receipt, up to \$1,245,867 in State Reserve funds from CARB into the Carl Moyer Program SB 1107 Multidistrict Fund (32) and to execute a contract with the LAUSD to replace eight older diesel school buses, as approved by CARB, with new alternative fuel buses in an amount not to exceed \$1,168,000 and reimburse the General Fund for administrative costs up to \$77,867 from the Carl Moyer Program SB 1107 Multidistrict Fund (32).

Benefits to SCAQMD

The successful implementation of the Lower-Emission School Bus Replacement Program provides less-polluting and safer school transportation for school children and reduces public exposure to nitrogen oxides and toxic diesel particulate matter emissions.

Resource Impacts

The \$1,245,867 in State Reserve funds from CARB will be recognized into the Carl Moyer Program SB 1107 Multidistrict Fund (32). The contract with LAUSD will not exceed \$1,168,000 and the reimbursement of administrative costs will not exceed \$77,867 from the Carl Moyer Program SB 1107 Multidistrict Fund (32).

Agenda Item #5

Fred Minassian

Recognize Revenue, Approve Awards for
School Bus Replacements and Reimburse
General Fund for Administrative Costs

Background

- Under the “Year 19” Carl Moyer Program, CARB has set aside State Reserve funds for replacement of school buses
- School buses must qualify for PM extension under the On-Road HD Diesel Vehicle Regulation
- SCAQMD has been selected by CARB to receive funds for replacement of 8 school buses

Proposal

- SCAQMD to receive \$1,245,867 from CARB in State Reserve funds comprised of:
 - \$1,168,000 program funds
 - \$77,867 admin funds
- SCAQMD to execute contract with LAUSD for replacement of 8 older diesel school buses, as approved by CARB, with alternative fuel buses



Recommended Actions

- Recognize, upon receipt, \$1,245,867 in State Reserve funds from CARB into the Carl Moyer Program SB 1107 Multidistrict Fund (32)
- Execute contract with LAUSD for replacement of 8 older diesel school buses with alternative fuel buses, as approved by CARB, for \$1,168,000 from the Carl Moyer Program SB 1107 Multidistrict Fund (32)
- Reimburse the General Fund for admin costs up to \$77,867 from State Reserve funds in the Carl Moyer Program SB 1107 Multidistrict Fund (32)

**ITEM #6 HAS BEEN WITHDRAWN BY
STAFF.**

Go to SLIDES

DRAFT
Technology Committee Agenda #7

BOARD MEETING DATE: July 7, 2017

AGENDA NO.

REPORT: California Fuel Cell Partnership Executive Board Meeting Agenda and Quarterly Updates

SYNOPSIS: This report provides the California Fuel Cell Partnership Executive Board Agenda for the meeting held April 25, 2017, and provides updates for quarters beginning October 2016 and January 2017.

COMMITTEE: Technology, June 16, 2017; Reviewed

RECOMMENDED ACTION:

Receive and file the attached Executive Board meeting agenda and quarterly updates.

Clark E. Parker, Sr., Ph.D.
SCAQMD Representative to CaFCP
CaFCP 2017 Executive Board Chair

MMM:FM:NB:LHM

The next California Fuel Cell Partnership (CaFCP) Executive Board meeting is scheduled for October 17, 2017, in Sacramento.

Additional information about the CaFCP can be found at
<http://www.fuelcellpartnership.org>.

Attachments

- 1) CaFCP April 25, 2017 Executive Board Meeting Agenda
- 2) CaFCP Quarterly Update (October–December 2016)
- 3) CaFCP Quarterly Update (January–March 2017)

April 25th Public Forum Agenda
Accelerating Commercialization in California
UCLA Meyer & Renee Luskin Conference Center – Legacy Room
425 Westwood Plaza, Los Angeles, CA 90095

30 minutes

8:45am–9:15am
CaFCP Chair, C Parker
CaFCP Exec Director, B Elrick

1. Welcome and opening remarks

CaFCP is crafting the vision for market acceleration of FCEVs and hydrogen stations, deployment of fuel cell electric buses, and introduction of fuel cell electric trucks. Today's meeting will help guide the direction of the next CaFCP roadmap.

75 minutes

9:15am–10:30am
Progress (GO-Biz)

2. 100 stations and Beyond

California has a milestone of 100 stations that will be co-funded through the CEC ARFVTP, and 65 stations are currently funded. After a review of where we are today and the next short-term goals and an overview of the common image of early market success, we'll discuss building upon lessons learned and mechanisms that may be most useful for reaching a sustainable market.

30 minutes

10:30am–11:00am

Break

60 minutes

11:00am–12:00pm
Renewable H2 (UC Irvine)
H2@Scale (NREL)
Grid integration (Nel)

3. Opportunities for Renewable Hydrogen

Renewable hydrogen plays an important role in mobile and stationary applications, and supporting the electrical grid. Leveraging these other markets may help increase the amount of renewable hydrogen in the transportation system. After learning about the market factors and opportunities for renewable H2 in other applications, we'll discuss how hydrogen stations might benefit.

60 minutes

12:00pm–1:00pm

Lunch (on own)

120 minutes

1:00pm–3:00 pm
Europe (Intelligent Energy)
Japan (HySUT)
H2USA (General Motors)
H2 Mobility (Daimler)
H2 Council (Air Liquide)

4. Perspectives on Commercialization

Commercial rollout is occurring across the globe, and each region is developing a slightly different approach to deployment. We'll take a close look at the different approaches and talk about how they can help the globalization of hydrogen, and which ideas and experiences California can use to accelerate deployment.

30 minutes

3:00pm–3:30pm

Break

60 minutes

3:30pm–4:30pm
CaFCP, B Elrick

5. Executive Board Business Meeting

- 2016 program plan review and progress on 2017 plan
- 2018 meeting dates
- New member proposals
- Public comment period*

15 minutes

4:30–4:45pm
CaFCP Chair, C Parker

6. Meeting Wrap up

* **Public comment period** : The public comment period provides an opportunity for members of the public to address the executive board on subject matters within the interest of CaFCP. Each person will be allowed a maximum of three minutes to ensure that everyone has a chance to speak.

Agenda items may be taken out of order and times may vary from those listed in the agenda. The board may choose to limit public comment at the chair's discretion.

This meeting is open to the public and will not be available by phone. This facility is accessible to persons with disabilities. Deadline for requesting ADA modification is **April 12, 2017**. Meeting materials will be posted at www.caftp.org.

CaFCP Quarterly Update

October – December 2016

Background

The California Fuel Cell Partnership is a unique collaborative of auto manufacturers, energy companies, fuel cell technology companies and government agencies, including SCAQMD. This report summarizes CaFCP activity in or related to Southern California for January to March 2016.

In its fourth phase, 2013-2016, CaFCP members, individually or in groups, will focus on meeting these goals to achieve market launch:

- Prepare for larger-scale manufacturing, which encompasses cost reduction, supply chain and production.
- Work on the customer channel, including identifying and training dealers and service technicians.
- Reduce costs of station equipment, increase supply of renewable hydrogen at lower cost, and develop new retail station approaches.
- Support cost reduction through incentives and targeted RD&D projects
- Continue research, development and demonstration of advanced concepts in renewable and other low-carbon hydrogen.
- Provide education and outreach to the public and community stakeholders on the role of FCVs and hydrogen in the evolution to electric drive.

CaFCP and members' activities fall within three main strategic directions:

1. Support hydrogen station and vehicle deployment to enable commercial market launch in 2015 timeframe
2. Show feasibility and a clear value proposition to consumers, businesses and communities
3. Focus existing resources, engage new groups and pursue innovative concepts to overcome early market challenges

To successfully implement the vision, CaFCP activities must focus on technical, communications and business operations/strategies that require convening, collaborating and communicating.

2016 Program Plan
Q4 accomplishments



1. Develop Infrastructure	
<i>Develop the necessary infrastructure and processes to support early commercial launch and expanded vehicle rollout.</i>	
Support the construction and commissioning of current California hydrogen stations by participating in codes, standards and regulation processes; facilitating station commissioning processes; and supporting station openings.	<ul style="list-style-type: none"> • SAE J2601-2016 Fueling Protocols for Light Duty Gaseous Hydrogen Surface Vehicles was published in December 2016. • Supported ribbon cutting at Campbell hydrogen station. • SOSS was successfully added to 4 additional stations in Q4 bringing the total of stations on SOSS to 25 Open-retail and 6 non-retail stations. Stations added to SOSS in Q4 include Woodland Hills (10/5/2016), Hollywood (11/10/2016), Anaheim (11/29/2016), Del Mar (12/2/2016). ANSI/CSA HGV 4.3 <i>Test methods for hydrogen fueling parameter evaluation</i> Published August, 2016 • SAE J2719/1 Application Guideline for Use of Hydrogen Quality Specification in committee- comments being addressed.
Prepare for future funding through outreach and education with fueling retailers and hydrogen industry.	<ul style="list-style-type: none"> • Staff held discussions/briefings with fuel retailers throughout the state regarding the potential integration of hydrogen into their existing operations - located both inside and beyond targeted areas identified by CEC.
Work with stakeholders to identify potential future station locations.	<ul style="list-style-type: none"> • Keith and other staff have been talking with Caltrans about their needs for hydrogen station locations to support their 20 Toyota Mirai.
Develop Road Map 2.0 with strategies for a sustainable network in California.	<ul style="list-style-type: none"> • Discussed and identified action items for achieving the “at least 100 publicly accessible hydrogen stations” (AB8) goal and beyond during the December 7-8 CaFCP Working Group meeting
2. Share and Synchronize Experience	
<i>Provide forums and opportunities for members to advance group collaboration and progress within CaFCP and among stakeholders.</i>	
Build and expand trust among members through open communication and forums.	<ul style="list-style-type: none"> • Organized and executed the publicly accessible October 18 CaFCP Executive Board meeting at the California Energy Commission. • Organized and completed the December 7-8 in-person CaFCP Working Group meeting • Conducted sub-group meetings (OEM and Station Developer/Operator Groups) to address issues related to




	SOSS, station implementation, dispenser integration, station availability/reliability, data collection and the implementation of the temporary fueler.
Communicate with stakeholders nationally and internationally to share learnings and amplify market launch efforts.	<ul style="list-style-type: none"> Organized and executed “International HRS Implementation Lessons Learned Exchange” on December 6 between CaFCP, CARB, CDFA DMS, Smart Chemistry and the Clean Energy Partnership (Germany) to discuss global challenges and common needs, including the need for global definitions. Staff participated in H2USA workgroup meetings to provide California input on commercialization efforts in the Northeast. Staff coordinated CAFCP member participation in the November Osaka Chamber of Commerce and Industry business delegation event in Los Angeles.
4. Expand Markets	
<i>Restructure CaFCP to be more inclusive and capable of meeting the expanding commercial market needs and opportunities, broadening the member base, and being the voice of all stakeholder participants</i>	
Establish new structure and expand membership.	<ul style="list-style-type: none"> Reaching out to recommended new members and staff continue to identify potential members.
Support deployment of fuel cell bus Centers of Excellence and the Bus Team.	<ul style="list-style-type: none"> Continued participation in background meetings with Sierra Club ZEB coalition. CaFCP and CHBC developed a letter together for LA Metro regarding the Rambol Environ report: “Zero Emission Bus Options: Analysis of 2015-2055 Fleet Costs and Emissions” and M.J. Bradley & Associates APTA webinar presentation: “Zero and Near Zero Bus Options”. The letter addressed a number of inaccuracies and issues regarding the assessment of fuel cell electric bus options in the report and presentation. Published the “CaFCP Fuel Cell Electric Bus Fact Sheet” for outreach. Participated in the California Transit Association’s annual fall conference on November 17 - Breakout 2 Maintenance: zero-emission bus sessions Participated as an invited panel member at the International Zero Emission Bus Conference and 10th Edition Fuel Cell Bus Workshop, Nov 30-Dec 1 in London, UK. For more information, go to: http://www.gofuelcellbus.com/index.php/workshops/2016-workshop/
Publish and implement the Medium- and Heavy-Duty Road Map document.	<ul style="list-style-type: none"> On October 20, shared about fuel cell electric trucks at the public CARB Board meeting in Fresno. Shared an overview of the FCET Action plan with the staff of the San Joaquin Valley Air Pollution Control District. Presented a high level overview of the FCET Action Plan at

	<p>the October 5 CHBC Hydrogen & Fuel Cell Summit.</p> <ul style="list-style-type: none">• Published CaFCP's <i>"Fuel Cell Electric Truck Action Plan for California"</i>• Held public webinar on Tuesday November 8 to provide an in-depth overview of the content of the FCET Action Plan• Participated in the November 14 CARB Heavy-Duty Transportation Electrification Workgroup Meeting.
Support activities outside of California, as directed by members	<ul style="list-style-type: none">• None in Q4

3. Reach Target Audiences

Communicate, educate, inform and promote H2 & FCEVs benefits and opportunities to key outside stakeholders and general public for increased and continued support. Become readily recognized as the face of the industry for trustworthy information and assist.

Activity	Description	Picture
Science In The Park STEAM Event, Oct. 1, 2016, Fremont, CA.	Juan C. - Static display, Mirai, Supporting Assemblymember Bill Quirk's district	 <p data-bbox="813 898 1497 972">~Over 500 in attendance. Spoke close to 150 attendees.</p>
CHBC Fall Summit, October 5-6, 2016, Sacramento, CA	Juan C. - Static display. Member support Honda Clarity and Toyota Mirai	<p data-bbox="813 978 1497 1203">~150 CARB employees stopped to check out the new 2017 Honda Clarity and 2016 Toyota Mirai</p>
League of California Cities Conference and Expo, October 5-6, 2016, Long Beach, CA	Keith M and Joe G – Exhibit display, Toyota Mirai	 <p data-bbox="813 1705 1497 1776">~50 city officials</p>

Fleet Week, October 7, 2016. San Francisco, CA.	Juan C and Keith M – Exhibit display, Member support (Linde) and Toyota Mirai	 <p>~200 attendees</p>
Charge Across Town, October 7-9, 2016, San Francisco, CA	CaFCP staff – Exhibit display, Test Ride and Drive, Honda Clarity, Toyota Mirai, Hyundai Tucson, MB B-Class F-Cell	 <p>Over 100 test drives. 500 in attendance</p>
League of Cities & Young Professionals, October 11, 2016, Sacramento, CA	Juan C and Bill Elrick – Speaker, Static display	CaFCP Presentation – 65 attendees
Campbell Ribbon Cutting Event, October 21, 2016, Campbell, CA	Juan C and Keith M – Ribbon event, member support Toyota, FE	

		25 guests – Mayor’s Office, Local chamber of commerce,
CaFCP MD/HD Fuel Cell Truck Action Plan for California, November 8, 2016, CaFCP HQ’s.	Nico B. Webinar Presentation	Registration: 200 ppl. Actual Participation: 105 ppl.
California Desert Air Working Group Annual Conference, November 15-17, Las Vegas, NV	Keith M. Presentation	100 Attendees
Ca. Transit Association Conference, hosted by AC Transit, November 17-18, 2016, Oakland, CA	Nico B. Member support	700+ attendees
Zero Emission Bus Conference and Fuel Cell Bus Workshop, November 30- December 1, 2016, London, UK	Nico B. Speaker, presenter	~250 in attendance Presentations posted at: http://www.cte.tv/zebc_presentations/

Legislative, NGO & Policy

Conduct one-on-one meetings with California state and federal elected officials and their staff in district and capitol offices. Conduct one-on-one meetings with influential NGOs at the local, state and national levels. Emphasize California's commitment to hydrogen and provide information about progress and plans. Provide education and information to policy makers.

2016 Q4 Statistics – Meetings and encounters

Elected officials: **14 and 5** (2016 total and Q4 total)

Legislative staff: **82 and 12** (2016 total and Q4 total)

NGOs: **8 and 4** (2016 total and Q4 total)

Event name	Meeting Date	Meeting with (Names and titles of all persons)
Ribbon cutting	10/21/2016	Assembly Member Evan Lowe and district director and Campbell Mayor Jason Baker
District office briefing	10/24/2016	Julia Juarez, Tonya Martin and Suely Saro
Capitol meeting	12/6/2016	Senator Transportation Committee: Randy Chin and Erin Riches
Capitol meeting	12/6/2017	Assembly Transportation Committee: Vicky Alvarez
Capitol meeting	12/6/2016	Office of Assembly Member Jacqui Irwin (D-Camarillo): Brett Williams and Ryan Van Zuylen
Capitol meeting	12/6/2016	Office of State Senator Ben Hueso (D-San Diego) Aaron Brieno and Alexis Castro
Capitol meeting	12/6/2016	Office of State Senator Toni Atkins: Sarah Boot
Western Governors Association	12/13/2016	Governor Jerry Brown
Western Governors Association	12/13/2016	Governor John Hickenlooper (Colorado)
Western Governors Association	12/13/2016	Governor Butch Otter (Idaho)
Community event	12/18/2016	Congressman Ami Bera (D-Sacramento)

Website and Social Media

We provide outreach and education through events, materials, video, web and social media that increase awareness in the general public, build support in early market communities and support other projects' specific goals. Our online strategy is to deliver real-world information about FCEVs and hydrogen stations to early adopter audiences. We use email, blogs, Twitter, YouTube and Facebook to share messages about FCEV commercialization and technology with different audience types.

www.cafcp.org	Oct-16	Nov-16	Dec-16
Number of visits	10,199	9,821	11,991
Average time users spent on site	1:59	2:19	1:54
Most visited pages	Home page Station map Stations Cars Woodland Hills Station	Station map Home page Stations Cars UC Irvine Station	Station map Home page Stations Cars Hydrogen Station Webinar Blog
Most searched keywords on Google to land on CaFCP website	hydrogen filling station south river road sacramento ca california fuel cell partnership cafcp hydrogen fuel stations in california website buttons sharebutton.to	hydrogen filling station south river road sacramento ca california fuel cell partnership cafcp hydrogen fuel stations in california website buttons sharebutton.to	california fuel cell partnership truck cafcp soss hydrogen fuel stations hydrogen fueling stations
Most referred websites	google m.cafcp.org automobiles.honda.com roadandtrack.com bing	google automobiles.honda.com m.cafcp.org popularmechanics.com bing	google automobiles.honda.com m.cafcp.org yahoo bing

FACEBOOK	Oct-16	Nov-16	Dec-16
New likes			

	22	26	17
Lifetime likes	2,820	2,835	2,838
Lifetime Post Total Reach	13,158	8,520	7,038
Lifetime Engaged Users	462	511	289

TWITTER	Oct-16	Nov-16	Dec-16
Tweets for the month	153	57	52
Tweet Impressions	73,900	37,200	31,600
Profile visits	1,836	1,155	1,015
Mentions	288	212	307
New Followers	72	61	83
Total Followers	3,028	3,183	3,266

E-blast – National Hydrogen Day is Coming!	
Sent Oct 4, 2016	
Contacts:	11,643
Opened:	11.9% - 1,384 contacts
Bounced:	3.2% - 369 contacts
No Info:	84.9% - 9,890 contacts
Clicked:	1% - 133 contacts
Unsubscribed:	13

E-blast – 2016 ZEV Action Plan from the State of California	
Sent Oct 12, 2016	
Contacts:	11,573
Opened:	13.3% - 1,543 contacts
Bounced:	2.8% - 326 contacts
No Info:	83.9% - 9,704 contacts
Clicked:	2% - 267 contacts
Unsubscribed:	10

E-blast – Campbell H2 station ribbon cutting - Friday, October 21	
Sent Oct 19, 2016	
Contacts:	355
Opened:	32.7% - 116 contacts
Bounced:	1.4% - 5 contacts
No Info:	65.9% - 234 contacts
Clicked:	1% - 3 contacts
Unsubscribed:	0

E-blast – Medium & Heavy-Duty Fuel Cell Electric Truck Action Plan, November 8	
Sent Oct 21, 2016	
Contacts:	11,566
Opened:	13% - 1,505 contacts
Bounced:	2.8% - 328 contacts
No Info:	84.2% - 9,733 contacts
Clicked:	2% - 222 contacts
Unsubscribed:	24

E-blast – Webinar Q&A: Medium & Heavy-Duty Fuel Cell Electric Truck

E-blast – CaFCP Members Only Newsletter, November 2016	
Sent Nov 7, 2016	
Contacts:	384
Opened:	19.5% - 75 contacts
Bounced:	0.8% - 3 contacts
No Info:	79.7% - 306 contacts
Clicked:	1% - 3 contacts
Unsubscribed:	0

Action Plan 11/8	
Sent Nov 10, 2016	
Contacts:	200
Opened:	46.0% - 92 contacts
Bounced:	1.0% - 2 contacts
No Info:	53.0% - 106 contacts
Clicked:	18% - 36 contacts
Unsubscribed:	0

E-blast – Hydrogen Stations Webinar, December 15: Update on Network Development Status in California	
Sent Dec 5, 2016	
Contacts:	11,434
Opened:	11.3% - 1,291 contacts
Bounced:	3.3% - 372 contacts
No Info:	85.5% - 9,771 contacts
Clicked:	2% - 187 contacts
Unsubscribed:	10

E-blast – CaFCP Members Only Newsletter, December 2016	
Sent Dec 6, 2016	
Contacts:	381
Opened:	23.9% - 91 contacts
Bounced:	0.5% - 2 contacts
No Info:	75.6% - 288 contacts
Clicked:	6% - 24 contacts
Unsubscribed:	1

E-blast – December 15 Hydrogen Stations Update Webinar Questions and Answers	
Sent Dec 19, 2016	
Contacts:	350
Opened:	54.6% - 191 contacts
Bounced:	2.3% - 8 contacts
No Info:	43.1% - 151 contacts
Clicked:	19% - 67 contacts
Unsubscribed:	0

CaFCP Quarterly Update

January – March 2017

Background

The California Fuel Cell Partnership is a unique collaborative of auto manufacturers, energy companies, fuel cell technology companies and government agencies, including SCAQMD.

CaFCP members, individually or in groups, will focus on meeting these goals to achieve market launch:

- Prepare for larger-scale manufacturing, which encompasses cost reduction, supply chain and production.
- Work on the customer channel, including identifying and training dealers and service technicians.
- Reduce costs of station equipment, increase supply of renewable hydrogen at lower cost, and develop new retail station approaches.
- Support cost reduction through incentives and targeted RD&D projects
- Continue research, development and demonstration of advanced concepts in renewable and other low-carbon hydrogen.
- Provide education and outreach to the public and community stakeholders on the role of FCVs and hydrogen in the evolution to electric drive.

CaFCP and members' activities fall within three main strategic directions:

1. Support hydrogen station and vehicle deployment to enable commercial market launch
2. Show feasibility and a clear value proposition to consumers, businesses and communities
3. Focus existing resources, engage new groups and pursue innovative concepts to overcome early market challenges

To successfully implement the vision, CaFCP activities must focus on technical, communications and business operations/strategies that require convening, collaborating and communicating.

2017 Program Plan
Q1 accomplishments



1. Develop Infrastructure	
<i>Develop the necessary infrastructure and processes to support early commercial launch and expanded vehicle rollout.</i>	
Support the construction and commissioning of current California hydrogen stations by participating in codes, standards and regulation processes; facilitating station commissioning processes; and supporting station openings.	<ul style="list-style-type: none"> • SAE J2601 re-opened and a new document, SAE J2601/4 started for ambient temperature, fixed orifice fueling. • CSA HGV 4.3 opened to harmonize with J2601-2016. • J Hamilton is the new chair of the ASTM D03.14 subcommittee for Hydrogen and Fuel Cells. Three documents at ballot (1 new work item and 2 revisions); Interlaboratory Study for ASTM D7941_D7941M - Test Method for Hydrogen Purity Analysis Using a Continuous Wave Cavity Ring-Down Spectroscopy Analyzer • SAE J2719/1 Application Guideline for Use of Hydrogen Quality Specification in committee- comments being addressed. • Members and SAE committees increasingly identify the need for developing SAE J2601/2 “HD gaseous hydrogen fueling protocol” (TIR) to the level of full standard and include 70MPa fueling. • Participated in Jan 30 CEC Workshop on Implementation Strategies for Production of Renewable H2 in CA and shared about LCFS context and options for expanded inclusion of RH2. • Served as reviewer of DOE H2 infra related projects in US DRIVE Hydrogen Delivery Tech Team and Codes and Standards Tech Team meetings.
Prepare for future funding through outreach and education with fueling retailers and hydrogen industry.	<ul style="list-style-type: none"> • CAFCP had a booth exhibit at the WPMA conference in February. Staff held discussions with fuel retailers located both in California and neighboring states about the status of the hydrogen fueling network development in California and the growing number of FCEVs on the road. • Staff held numerous educational discussions with companies already involved in the industry and those interested in moving into the hydrogen FCEV market (e.g. NICE, WireTough, H2SG Energy, etc.). • Staff held educational discussions with companies interested in potentially investing in the hydrogen infrastructure market (RE2H2 Energy Development and others) and energy industry analysts (Bloomberg)
Work with stakeholders to identify potential future station locations.	<ul style="list-style-type: none"> • Keith and other staff continue to talk with Caltrans about their needs for hydrogen station locations to support their 20 Toyota Mirai. Staff is encouraging Caltrans staff to present to the CaFCP membership at the June 2017 Working Group meeting.



	<ul style="list-style-type: none"> Through meetings and conversations with fuel retailers, staff have referred interested companies to hydrogen station developers to further evaluate potential new locations for hydrogen refueling stations.
Develop Road Map 2.0 with strategies for a sustainable network in California.	<ul style="list-style-type: none"> Ongoing discussions about draft at in-person member meetings and through direct member feedback.
2. Share and Synchronize Experience	
<i>Provide forums and opportunities for members to advance group collaboration and progress within CaFCP and among stakeholders.</i>	
Build and expand trust among members through open communication and forums.	<ul style="list-style-type: none"> Organized and completed the March 15-16 in-person CaFCP Working Group meeting Conducted sub-group meetings (OEM and Station Developer/Operator Groups) to address issues related to SOSS, station implementation, dispenser integration, station availability/reliability, data collection and the implementation of the temporary fueler.
Communicate with stakeholders nationally and internationally to share learnings and amplify market launch efforts.	<ul style="list-style-type: none"> Staff coordinated CAFCP member participation in a visit by Norwegian representatives of Akershus County. Staff held meetings with industry representatives from Canada to provide feedback on the Canadian effort to establish an organization similar to the California Fuel Cell Partnership. Staff conducted its quarterly Hydrogen Station Network Development Update webinar in March. Attendees included industry and government officials from the US, Europe, Latin America and Asia.
4. Expand Markets	
<i>Maintain CaFCP to be more inclusive and capable of meeting the expanding commercial market needs and opportunities, broadening the member base, and being the voice of all stakeholder participants. Support the rollout of FCEBs in revenue service and MD/HD FCETs in freight movement operations in California.</i>	
Maintain strong organization through new structure and expand membership.	<ul style="list-style-type: none"> Reaching out to recommended new members and staff continue to identify potential members. Prepared new member recommendations for Executive Board meeting in April.
Support deployment of fuel cell bus Centers of Excellence and the Bus Team.	<ul style="list-style-type: none"> Staff continue to participate in background meetings with Sierra Club ZEB coalition. Provided support to SunLine Center of Excellence implementation where necessary. Participated in CARB workgroups that provide input in development process of Innovative Clean Transit regulation.
Publish and implement the Medium- and Heavy-	<ul style="list-style-type: none"> Met with Truck and Engine Manufacturers Association in Chicago to share key points of FCET Action Plan.


Duty Action Plan document.	<ul style="list-style-type: none">Planned Q2 workshop with DOE to discuss updates on published MD/HD FCET Action Plan and FCET technical targets.
Facilitate support for needed MHD fueling infrastructure and support SAE J2601-2 to level of a standard	<ul style="list-style-type: none">Supported CTE and SCAQMD in assessment of temporary fueling solution for six DOE/SCAQMD/CEC funded drayage/short haul fuel cell trucks for Port of Long Beach/LA.Discussed need for update SAE J2601-2 document with SAE Fueling Interface Committee lead and need for update of J2600 (related fueling interface standard).
Support activities outside of California, as directed by members	<ul style="list-style-type: none">On March 22, participated in workshop titled “Learning from California: Alternative Fuels, Vehicles, and Infrastructure” organized by Oregon DOT, Caltrans & FHWA, with state DOT participants from 10 different states.

3. Reach Target Audiences

Communicate, educate, inform and promote H2 & FCEVs benefits and opportunities to key outside stakeholders and general public for increased and continued support. Become readily recognized as the face of the industry for trustworthy information and assist.

Activity	Description	Picture
Signal Hill Sustainability Committee, Signal Hill, Feb. 2	Speaker: Keith	No picture available.
SAE 2017 Hybrid and Electric Vehicle Tech Symposium, San Diego, Feb. 7-9	Speaker: Bill	No picture available.
Akershus Delegation Tour of bay area hydrogen stations and stationary, Feb. 15	Network: Keith	
WPMA Conference and Expo, Las Vegas, Feb.	Exhibitor: Joe and Juan	

Fuel cell vehicles presentation, Santa Barbara, Feb. 22	Presentation: Keith	
Clean, Low Carbon Fuels Summit, Sacramento, Feb. 28	Network: Bill	No picture available.
Harvey Mudd College Event, SoCal, Feb. 28	Static display: Keith	No picture available.
ER Training – Linde/San Ramon Fire, San Ramon, March. 6-10		

Environmental Justice & Corporate America's Responsibility to Protecting the Communities They Serve, Inglewood, March 16	Network: Keith	
Hydrogen Station Network Development in California Webinar, Sacramento, March 22	Presenter: Joe and Ben	Registered: 302 Attended: 168
South African Delegates, CaFCP HQ, March 27	Meeting: Chris	Attended: 4 delegates

Legislative, NGO & Policy

Conduct one-on-one meetings with California state and federal elected officials and their staff in district and capitol offices. Conduct one-on-one meetings with influential NGOs at the local, state and national levels. Emphasize California's commitment to hydrogen and provide information about progress and plans. Provide education and information to policy makers.

The contacts listed here do not include elected officials and staff reached through mass emails or basic email communications with staff.

2017 Q1 Statistics – Meetings and encounters

Elected officials: **1**

Legislative staff: **12**

NGOs: **1**

Event name	Meeting Date	Meeting with
Meeting	1/24/2017	Will Barrett, American Lung Association
District Office	2/7/2017	Marisol Barajas, office of Assembly Member O'Connell (D-Long Beach)
District Office	2/14/2017	Reina Lopez, office of Assembly Member Bonta (D-Oakland) and Tasha Henneman, office of State Senator Nancy Skinner
District Office	2/22/2017	Allegra Roth, office of Assembly Member Monique Limon (D-Santa Barbara)
District Office		Brad Hudson, office of State Senator Hannah-Beth Jackson (D-Santa Barbara)
Conversation	2/27/2017	State Senator Tony Mendoza (D-Cerritos)
Capitol office	3/20/2017	Kellie Smith, Chief Consultant, Assembly Utilities and Energy
Capitol office	3/21/2017	Alex Soto, office of Assembly Member Marc Berman (D-Palo Alto)
Capitol office	3/21/2017	Priscilla Quiroz, office of State Senator Nancy Skinner (D-Oakland)
Capitol office	3/21/2017	Paco Torres, legislative director for Assembly Member Sabrina Cervantes (D-Corona)
Capitol office	3/22/2017	Don Wilcox, chief of staff, State Senator Josh Newman (D-Brea)
Capitol office	3/22/2017	Anthony Molina, legislative director, State Senator Anthony Portantino (D-La Canada Flintridge)
Capitol office	3/23/2017	Marla Cowan, legislative director, Assembly Member Juan Arambula (D-Central Valley)

Website and Social Media

We provide outreach and education through events, materials, video, web and social media that increase awareness in the general public, build support in early market communities and support other projects' specific goals. Our online strategy is to deliver real-world information about FCEVs and hydrogen stations to early adopter audiences. We use email, blogs, Twitter, YouTube and Facebook to share messages about FCEV commercialization and technology with different audience types.

www.cafcp.org	Jan-17	Feb-17	Mar-17
Number of visits	10,592	19,274	22,941
Average time users spent on site	2:06	1:49	1:50
Most visited pages	Station map Home page Stations Cars Buses & Trucks	Station map Home page Stations Cars Buses & Trucks	Station map Home page Stations Cars Buses & Trucks
Most searched keywords on Google to land on CaFCP website	california fuel cell partnership truck hydrogen fueling stations hydrogen stations website buttons sharebutton.to	truck california fuel cell partnership hydrogen fueling stations www.m.cafcp.org hydrogen fuel stations	truck california fuel cell partnership hydrogen fueling stations trucks www.cafcp
Most referred websites	google.com automobiles.honda.com bing yahoo t.co (Twitter)	google.com automobiles.honda.com yahoo bing blog.caranddriver.com	google.com automobiles.honda.com bing yahoo t.co (Twitter)

FACEBOOK	Jan-17	Feb-17	Mar-17
New likes	24	29	33
Lifetime likes	2,849	2,870	2,889
Lifetime Post Total Reach	14,016	13,216	13,421

Lifetime Engaged Users	695	605	626
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TWITTER	Jan-17	Feb-17	Mar-17
Tweets for the month	13	14	22
Tweet Impressions	10,600	16,900	20,100
Profile visits	901	1,232	1,261
Mentions	323	356	254
New Followers	50	64	68
Total Followers	3,299	3,299	3,299

E-blast – CEC and ARB Release Joint Staff Report	
Sent January 24, 2017	
Contacts:	11,278
Opened:	13.0% - 1,462 contacts
Bounced:	3.0% - 343 contacts
No Info:	84.0% - 9,473 contacts
Clicked:	2% - 193 contacts
Unsubscribed:	13

E-blast – CaFCP Annual Report to Members 2016	
Sent January 26, 2017	
Contacts:	380
Opened:	22.9% - 87 contacts
Bounced:	0.5% - 2 contacts
No Info:	76.6% - 291 contacts
Clicked:	8% - 32 contacts
Unsubscribed:	0

E-blast – CEC Announces Proposed Hydrogen Station Awards	
Sent February 17, 2017	
Contacts:	812
Opened:	18.3% - 149 contacts
Bounced:	12.6% - 102 contacts
No Info:	69.1% - 561 contacts
Clicked:	5% - 43 contacts
Unsubscribed:	0

E-blast – Hydrogen Stations Webinar, March 22: Update on Network Development Status in California	
Sent February 28, 2017	
Contacts:	11,205
Opened:	13.8% - 1,544 contacts
Bounced:	2.8% - 311 contacts
No Info:	83.4% - 9,350 contacts
Clicked:	2% - 229 contacts
Unsubscribed:	18

E-blast – California Proposes 16 Additional Hydrogen Stations	
Sent March 13, 2017	
Contacts:	11,175
Opened:	14.2% - 1,590 contacts

E-blast – Fuel cell buses clear the air in California, every day	
Sent March 6, 2017	
Contacts:	11,184
Opened:	13.0% - 1,458 contacts
Bounced:	2.6% - 294 contacts
No Info:	84.3% - 9,432 contacts
Clicked:	1% - 123 contacts
Unsubscribed:	12

Bounced:	2.6% - 293 contacts
No Info:	83.1% - 9,292 contacts
Clicked:	3% - 364 contacts
Unsubscribed:	9

E-blast – March 22 Hydrogen Stations Update Webinar Questions & Answers	
Sent March 28, 2017	
Contacts:	302
Opened:	52.3% - 158 contacts
Bounced:	1.0% - 3 contacts
No Info:	46.7% - 141 contacts
Clicked:	25% - 77 contacts
Unsubscribed:	0

Agenda Item #7

Lisa Mirisola

California Fuel Cell Partnership
Executive Board Meeting Agenda and
Quarterly Updates

CaFCP Goals For 2017

- Support the construction and commissioning of hydrogen stations
- Share and synchronize experience
- Reach target markets and communities to educate and promote hydrogen & FCEVs
- Implement CaFCP restructuring to be more inclusive and capable of meeting expanding commercial market

April 2017 Meeting Highlights

Accelerating Commercialization in California



Riverside

- Dr. Parker assumed Chair of Executive Board for 2017
- Dr. Parker provided opening remarks
- Develop vision for 100 stations and beyond
- Opportunities for renewable hydrogen
- Perspectives on commercialization



South
Pasadena

CaFCP Executive Board Business Meeting Actions

- 2016 CaFCP program review
- New members:
Approved Air Liquide as executive board member,
invite Ivys Energy Solutions and Kobelco as new
associate members
- 2018 CaFCP Executive Board meeting dates:
 - April 20-21 in Southern California
 - October 16-17 in Sacramento

CaFCP Executive Board Business Meeting New Assignments

- Integrate Executive Board feedback into vision process:
 - Add highlights to successful “Victory Circle”
 - Describe options and strategies to transition from government push to market pull
 - Address issues to engage utilities, increase dedicated production/renewables
- Develop strategies to track and report worldwide hydrogen station and vehicle deployments, e.g. “Dashboard”

Recent Event Highlights



League of California Cities
Conference and Expo,
October 5-6, 2016,
Long Beach, CA



Emergency Responder
Training – Linde/San
Ramon Fire,
March 6-10, 2017
San Ramon, CA



Environmental Justice & Corporate
America's Responsibility to Protect
the Communities They Serve,
March 16, 2017
Inglewood, CA