



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

TECHNOLOGY IMPLEMENTATION OFFICE (TIO)  
STEERING COMMITTEE

COMMITTEE MEMBERS

Bud Beebe, Sacramento Municipal Utility District (Retired)  
Cindy Chavez, Air District Board of Directors (Committee Chair)  
Mark Gupta, Prelude Ventures  
Ahmad Ganji, San Francisco State Industrial Assessment Center  
Dave Hudson, Air District Board of Directors  
Janea Scott, California Energy Commission

**MONDAY  
OCTOBER 22, 2018  
9:30 A.M.**

**1<sup>ST</sup> FLOOR BOARD ROOM  
375 BEALE STREET  
SAN FRANCISCO, CA 94105**

**AGENDA**

**1. CALL TO ORDER - ROLL CALL  
PLEDGE OF ALLEGIANCE**

*The Committee Chair shall call the meeting to order and the Clerk of the Boards shall take roll of the Committee members. The Committee Chair shall lead the Pledge of Allegiance.*

**Staff/Phone (415) 749-**

**2. PUBLIC COMMENT ON AGENDA MATTERS**

*Pursuant to Government Code Section 54954.3, the public has the opportunity to speak on any agenda item. All agendas for Committee meetings are posted at the Air District, 375 Beale Street, San Francisco, California 94105 at least 72 hours before a meeting.*

*This meeting will be webcast. To see the webcast, please visit [www.baaqmd.gov/bodagendas](http://www.baaqmd.gov/bodagendas) at the time of the meeting. Closed captioning may contain errors and omissions, and are not certified for their content or form.*

**3. APPROVAL OF THE MINUTES OF JUNE 21, 2018**

**Clerk of the Boards/5073**

*The Committee will consider approving the draft minutes of the Technology Implementation Office Steering Committee meeting of June 21, 2018.*

4. **TECHNOLOGY IMPLEMENTATION OFFICE (TIO) STEERING COMMITTEE COMPOSITION**

R. Chiang/8621

[rchiang@baaqmd.gov](mailto:rchiang@baaqmd.gov)

*The Committee will discuss the composition of the TIO Steering Committee and consider recommending additional members who may complement and enhance Committee's expertise.*

5. **TECHNOLOGY ASSESSMENT AND OUTREACH**

D. Tang/8726

[dtang@baaqmd.gov](mailto:dtang@baaqmd.gov)

*The Steering Committee will receive an update on the final report for the assessment of technologies for their emissions reduction potential, technological, economic, and policy opportunities and barriers. The Steering Committee will also receive an update on efforts to share the results of the technology assessment with stationary facilities, technology developers, and financing partners.*

6. **LOAN PROGRAM AGREEMENT**

D. Tang/8726

[dtang@baaqmd.gov](mailto:dtang@baaqmd.gov)

*The Steering Committee will receive an update on the agreement to offer loans for public sector facilities and loan guarantees for private sector facilities.*

7. **ELECTRIC VEHICLE INFRASTRUCTURE AND FLEET INCENTIVE PROGRAMS**

M. Tang/4905

[mtang@baaqmd.gov](mailto:mtang@baaqmd.gov)

*The Steering Committee will receive an update on the grant incentive programs to accelerate electric vehicle infrastructure and fleets in the Bay Area.*

8. **PUBLIC COMMENT ON NON-AGENDA MATTERS**

*(Public Comment on Non-Agenda Items Pursuant to Government Code § 54954.3) Members of the public are afforded the opportunity to speak on any agenda item. All agendas for regular meetings are posted at District headquarters, 375 Beale Street, San Francisco, CA, 94105 at least 72 hours in advance of a regular meeting. At the beginning of the regular meeting agenda, an opportunity is also provided for the public to speak on any subject within the Committee's subject matter jurisdiction. Speakers will be limited to up to two (2) minutes each.*

9. **COMMITTEE MEMBER COMMENTS**

*Any member of the Steering 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, 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 take action to direct staff to place a matter of business on a future agenda. (Gov't Code § 54954.2)*

10. **TIME AND PLACE OF NEXT MEETING**

*At the Call of the Chair.*

11. **ADJOURNMENT**

*The Committee meeting shall be adjourned by the Committee Chair.*

**CONTACT:**

**MANAGER, EXECUTIVE OPERATIONS**  
**375 BEALE STREET, SAN FRANCISCO, CA 94105**  
[vjohnson@baaqmd.gov](mailto:vjohnson@baaqmd.gov)

**(415) 749-4941**  
**FAX: (415) 928-8560**  
**BAAQMD homepage:**  
[www.baaqmd.gov](http://www.baaqmd.gov)

- To submit written comments on an agenda item in advance of the meeting. Please note that all correspondence must be addressed to the “Members of the Technology Implementation Office Steering Committee” and received at least 24 hours prior, excluding weekends and holidays, in order to be presented at that Committee meeting. Any correspondence received after that time will be presented to the Committee at the following meeting.
- To request, in advance of the meeting, to be placed on the list to testify on an agenda item.
- Any writing relating to an open session item on this Agenda that is distributed to all, or a majority of all, members of the body to which this Agenda relates shall be made available at the District’s offices at 375 Beale Street, Suite 600, San Francisco, CA 94105, at the time such writing is made available to all, or a majority of all, members of that body.

**Accessibility and Non-Discrimination Policy**

The Bay Area Air Quality Management District (Air District) does not discriminate on the basis of race, national origin, ethnic group identification, ancestry, religion, age, sex, sexual orientation, gender identity, gender expression, color, genetic information, medical condition, or mental or physical disability, or any other attribute or belief protected by law.

It is the Air District’s policy to provide fair and equal access to the benefits of a program or activity administered by Air District. The Air District will not tolerate discrimination against any person(s) seeking to participate in, or receive the benefits of, any program or activity offered or conducted by the Air District. Members of the public who believe they or others were unlawfully denied full and equal access to an Air District program or activity may file a discrimination complaint under this policy. This non-discrimination policy also applies to other people or entities affiliated with Air District, including contractors or grantees that the Air District utilizes to provide benefits and services to members of the public.

Auxiliary aids and services including, for example, qualified interpreters and/or listening devices, to individuals who are deaf or hard of hearing, and to other individuals as necessary to ensure effective communication or an equal opportunity to participate fully in the benefits, activities, programs and services will be provided by the Air District in a timely manner and in such a way as to protect the privacy and independence of the individual. Please contact the Non-Discrimination Coordinator identified below at least three days in advance of a meeting so that arrangements can be made accordingly.

If you believe discrimination has occurred with respect to an Air District program or activity, you may contact the Non-Discrimination Coordinator identified below or visit our website at [www.baaqmd.gov/accessibility](http://www.baaqmd.gov/accessibility) to learn how and where to file a complaint of discrimination.

Questions regarding this Policy should be directed to the Air District’s Non-Discrimination Coordinator, Rex Sanders, at (415) 749-4951 or by email at [rsanders@baaqmd.gov](mailto:rsanders@baaqmd.gov).

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**  
**375 BEALE STREET, SAN FRANCISCO, CALIFORNIA 94105**  
**FOR QUESTIONS PLEASE CALL (415) 749-4941**

**EXECUTIVE OFFICE:**  
**MONTHLY CALENDAR OF AIR DISTRICT MEETINGS**

**OCTOBER 2018**

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
<b>Board of Directors Regular Meeting</b> <i>(Meets on the 1<sup>st</sup> &amp; 3<sup>rd</sup> Wednesday of each Month)</i>	Wednesday	17	9:30 a.m.	1 <sup>st</sup> Floor Board Room
<b>Board of Directors Public Engagement Committee</b> <i>(At the Call of the Chair)</i>	Friday	19	9:30 a.m.	1 <sup>st</sup> Floor Board Room
<b>Board of Directors TIO Steering Committee</b> <i>(At the Call of the Chair)</i>	Monday	22	9:30 a.m.	1 <sup>st</sup> Floor Board Room
<b>Board of Directors Budget &amp; Finance Committee</b> <i>(Meets on the 4<sup>th</sup> Wednesday of each Month)</i> - CANCELLED	Wednesday	24	9:30 a.m.	1 <sup>st</sup> Floor, Yerba Buena Room #109
<b>Board of Directors Mobile Source Committee</b> <i>(Meets on the 4<sup>th</sup> Thursday of each Month)</i>	Thursday	25	9:30 a.m.	1 <sup>st</sup> Floor Board Room
<b>Advisory Council Mtg.</b> <i>(At the Call of the Chair)</i>	Monday	29	10:00 a.m.	1 <sup>st</sup> Floor Board Room

**NOVEMBER 2018**

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
<b>Board of Directors Executive Committee</b> <i>(At the Call of the Chair)</i>	Friday	2	9:30 a.m.	1 <sup>st</sup> Floor Board Room
<b>Board of Directors Nominating Committee</b> <i>(At the Call of the Chair)</i> - CANCELLED AND RESCHEDULED TO MONDAY, NOVEMBER 19, 2018	Wednesday	7	9:00 a.m.	1 <sup>st</sup> Floor Board Room
<b>Board of Directors Regular Meeting</b> <i>(Meets on the 1<sup>st</sup> &amp; 3<sup>rd</sup> Wednesday of each Month)</i> - CANCELLED AND RESCHEDULED TO MONDAY, NOVEMBER 19, 2018	Wednesday	7	9:30 a.m.	1 <sup>st</sup> Floor Board Room
<b>Board of Directors Climate Protection Committee</b> <i>(Meets on the 3<sup>rd</sup> Thursday of every other Month)</i> - CANCELLED	Thursday	15	9:30 a.m.	1 <sup>st</sup> Floor Board Room
<b>Board of Directors Stationary Source Committee</b> <i>(Meets on the 3<sup>rd</sup> Monday of every other Month)</i> - CANCELLED	Monday	19	9:30 a.m.	1 <sup>st</sup> Floor Board Room
<b>Board of Directors Nominating Committee</b> <i>(At the Call of the Chair)</i>	Monday	19	9:00 a.m.	1 <sup>st</sup> Floor Board Room
<b>Board of Directors Special Meeting</b> <i>(Meets on the 1<sup>st</sup> &amp; 3<sup>rd</sup> Wednesday of each Month)</i>	Monday	19	9:30 a.m.	1 <sup>st</sup> Floor Board Room

## NOVEMBER 2018

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
<b>Board of Directors Regular Meeting</b> <i>(Meets on the 1<sup>st</sup> &amp; 3<sup>rd</sup> Wednesday of each Month)</i> - CANCELLED	Wednesday	21	9:30 a.m.	1 <sup>st</sup> Floor Board Room
<b>Board of Directors Mobile Source Committee</b> <i>(Meets on the 4<sup>th</sup> Thursday of each Month)</i> - CANCELLED	Thursday	22	9:30 a.m.	1 <sup>st</sup> Floor Board Room
<b>Board of Directors Budget &amp; Finance Committee</b> <i>(Meets on the 4<sup>th</sup> Wednesday of each Month)</i>	Wednesday	28	9:30 a.m.	1 <sup>st</sup> Floor, Yerba Buena Room #109

## DECEMBER 2018

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
<b>Board of Directors Regular Meeting</b> <i>(Meets on the 1<sup>st</sup> &amp; 3<sup>rd</sup> Wednesday of each Month)</i>	Wednesday	5	9:30 a.m.	1 <sup>st</sup> Floor Board Room
<b>Board of Directors Regular Meeting</b> <i>(Meets on the 1<sup>st</sup> &amp; 3<sup>rd</sup> Wednesday of each Month)</i>	Wednesday	19	9:30 a.m.	1 <sup>st</sup> Floor Board Room
<b>Board of Directors Budget &amp; Finance Committee</b> <i>(Meets on the 4<sup>th</sup> Wednesday of each Month)</i>	Wednesday	26	9:30 a.m.	1 <sup>st</sup> Floor, Yerba Buena Room #109
<b>Board of Directors Mobile Source Committee</b> <i>(Meets on the 4<sup>th</sup> Thursday of each Month)</i>	Thursday	27	9:30 a.m.	1 <sup>st</sup> Floor Board Room

HL – 10/5/18 – 8:15 a.m.

G/Board/Executive Office/Moncal

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

Memorandum

To: Chairperson Cindy Chavez and Members  
of the Technology Implementation Office Steering Committee

From: Jack P. Broadbent  
Executive Officer/APCO

Date: October 10, 2018

Re: Approval of the Minutes of June 21, 2018

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RECOMMENDED ACTION

Approve the attached draft minutes of the Technology Implementation Office Steering Committee (Committee) meeting of June 21, 2018.

DISCUSSION

Attached for your review and approval are the draft minutes of the Technology Implementation Office Steering Committee meeting of June 21, 2018.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Marcy Hiratzka  
Reviewed by: Vanessa Johnson

Attachment 3A: Draft Minutes of the Committee Meeting of June 21, 2018

## AGENDA: 3A – ATTACHMENT

Draft Minutes – Technology Implementation Office Steering Committee Meeting of June 21, 2018

Bay Area Air Quality Management District  
375 Beale Street, Suite 600, San Francisco, California 94105  
(415) 749-5073

### DRAFT MINUTES

Summary of Board of Directors  
Technology Implementation Office Steering Committee Meeting  
Thursday, June 21, 2018

#### 1. CALL TO ORDER – ROLL CALL

Technology Implementation Office (TIO) Steering Committee (Committee) Chairperson Cindy Chavez called the meeting to order at 1:02 p.m.

Present: Committee Chairperson, Cindy Chavez; Board of Directors (Board) Chairperson, David Hudson; and Members Bud Beebe, Mark Cupta, Ahmad Ganji, and Janea Scott.

Absent: None.

Also Present: None.

#### 2. PUBLIC COMMENT ON AGENDA MATTERS

No requests received.

#### 3. APPROVAL OF THE MINUTES OF MARCH 2, 2018

##### Public Comments

No requests received.

##### Committee Comments

None.

##### Committee Action

Board Chair Hudson made a motion, seconded by Mr. Beebe, to approve the Minutes of March 2, 2018; and the motion carried by the following vote of the Committee:

AYES: Beebe, Chavez, Cupta, Ganji, Hudson, and Scott.  
NOES: None.  
ABSTAIN: None.  
ABSENT: None.



#### **4. CLEAN CARS FOR ALL: NEW INCENTIVES PROGRAM FOR LOW-INCOME CONSUMERS**

Dr. Ranyee Chiang, Technology Implementation Officer, introduced Tin Le, Staff Specialist, who gave the staff presentation *Clean Cars For All: New Incentives Program for Low-Income Consumers*, including: outline; expanding electric vehicle (EV) adoption in the Bay Area; achieving equitable access to clean transportation and technology; Enhanced Fleet Modernization Program Plus-Up, also known as Clean Cars for All; replacement options and funding levels; consumer outreach and support; case manager Request for Proposals; scoring of proposals and panel recommendation; and next steps.

##### Public Comments

No requests received.

##### Committee Comments

The Committee and staff discussed how the Air District (District) anticipates that the implementation process will be streamlined for applicants that are selected for electric vehicle supply equipment and what the District can do to avoid duplicating efforts regarding the placement of charging infrastructure; the District's involvement with the Bay Area EV Coordinating Council; the suggestion that electric charging discounts be made available at public charging stations to those who own EVs but who live in multi-family housing that lacks EV charging infrastructure; funding sources for this program; the proposed scope of work of the case managers; the anticipated commercialization of fuel cell vehicles; the suggestion that the District monitors the progression of the program past Year 2 to ensure that the program evolves in a direction and at a pace that is not driven by the manufacturers; the concern that hybrid vehicles with low gas mileage may not be conducive to the program; the fact that this program applies to both new and used purchased EVs, and both multi-family and single-family dwellings; the languages in which this program will be advertised; praise of District staff for aligning this program with the District's 2017 Clean Air Plan's objective of expanding EV adoption in the Bay Area (90% EVs by 2050); the suggestion that local social services agencies be included in program outreach, and a volunteer pilot program with the Santa Clara County Social Services Agency; the suggestion of offering priority outreach to counties that will financially contribute to the program; the suggesting of the District procuring a community banking partner that would write the program into their insurance policy; the need to diversify the types of eligible vehicles for the this program to maximize the number of low-income applicants; and the hope that electric bicycle and motorcycle sharing becomes as popular as bicycle sharing.

##### Committee Action

None; receive and file.

#### **5. MISSION AND CUSTOMER DISCOVERY**

Damian Breen, Deputy Air Pollution Control Officer of Technology, introduced Dr. Chiang, who gave the staff presentation *Mission and Customer Delivery*, including: TIO mission statement; benefits to partners with (District) TIO; customer discovery; outreach to stationary facilities;

facilities’ needs and wants; interviews with financing partners; financing landscape; take risk where we add value; and Global Climate Action Summit affiliate event.

Public Comments

No requests received.

Committee Comments

The Committee and staff discussed the suggestion that the District invites the press to help promote the development of partnerships between technology developers and customers and grants for low-carbon technologies; and the appreciation for the inclusion of comments from Committee members made at the Committee’s first meeting in today’s presentations.

Committee Action

None; receive and file.

**6. PROPOSED LOAN RELATIONSHIP**

Mr. Breen re-introduced Dr. Chiang, who gave the staff presentation *Proposed Loan Relationship and Terms*, including: Stationary Loan Program: proposed financing relationship with California Infrastructure and Economic Development Bank (IBank); key terms of proposed loan program; and proposed project selection process.

Public Comments

No requests received.

Committee Comments

The Committee and staff discussed how the District would be operating as a lender for the first time through this program; the placement of EV charging stations along freeways, and security that EV drivers need while in transit; financing structure options that the District is exploring as a potential lender; the offering of lessons learned from a first-time lender using public funds; the lack of authority the District would have over which project applications are selected; the need to educate the IBank about how much different technologies should cost and which technologies are the most dependable and desirable; what criteria is involved in the District’s technical evaluation of project applications; whether trading carbon credits as a commodity is applicable to this program; the feasibility of profit-sharing and procurement of a private sector investment partner; the request to consider the expansion of the IBank as potential legislation; the request for specific information to be presented to the Board, including: a grid indicating the District’s roles relative to engineering, technical assessments, and program outreach, and an outline of the potential risk that the District faces as a lender; anticipated sources of financial friction within the proposed deal structure, and ways to effectively use the allocated funds that deviate from the proposed program; and lessons learned from previous IBank partners.

Committee Action

None; receive and file.

**7. UPDATE ON TECHNOLOGY ASSESSMENT RESULTS**

Dr. Chiang gave the staff presentation *Update on Technology Assessment Results*, including: technology assessment: what are the key technologies and facilities to incentive; technology assessment goal; 203 technologies assessed; key comparison variables; preliminary technologies of interest; and next steps.

Public Comments

No requests received.

Committee Comments

The Committee and staff discussed the efficiency of alternatives to gas turbines; the suggestion that the District and California Energy Commission collaborate research and technology assessment findings; the District’s selection process of technologies to assess; the suggestion that the District takes into account upstream emission reductions as key comparison variables, and not solely emission reductions associated with facilities; the suggestion that the District avoids programs that incrementally reduce emissions from existing technologies that prolong those technologies; and the suggestion that District staff include water-conserving technology, as this type of technology corresponds to energy and greenhouse gas reduction.

Committee Action

None; receive and file.

**8. PUBLIC COMMENT ON NON-AGENDA MATTERS**

No requests received.

**9. COMMITTEE MEMBER COMMENTS**

Mr. Beebe remarked that the Committee is off to a promising start.

**10. TIME AND PLACE OF NEXT MEETING**

Monday, October 22, 2018, Bay Area Air Quality Management District Office, 375 Beale Street, San Francisco, California 94105 at 9:30 a.m.

**11. ADJOURNMENT**

The meeting adjourned at 2:51 p.m.

Marcy Hiratzka  
Clerk of the Boards

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

## Memorandum

To: Chairperson Cindy Chavez and Members  
of the Technology Implementation Office Steering Committee

From: Jack P. Broadbent  
Executive Officer/APCO

Date: October 10, 2018

Re: Technology Implementation Office (TIO) Steering Committee Composition

**RECOMMENDED ACTION**

None; receive and file.

**BACKGROUND**

The Technology Implementation Office's (TIO) mission is to accelerate climate action by cultivating partnerships between technology developers and customers and offering grants and loans for low-carbon technologies for the industrial and transportation sectors.

**DISCUSSION**

The TIO Steering Committee was established to advise Air District staff on programmatic strategy, technologies, business and market impacts, and new partnership opportunities. Recognizing that the mission and programs of the TIO have been refined since the Office was launched, the Steering Committee may benefit from additional members and expertise. For example, additional expertise in the areas of loan programs, climate finance, and community engagement could help advise staff on expanding incentive programs and identifying new public and private sector financing partners. Staff are proposing to add up to three new members to the TIO Steering Committee, following the same process used to identify the initial Steering Committee members.

Attachment 1 lists candidates for the Steering Committee and their areas of expertise. Staff is seeking input on these candidates as well as other suggested candidates. The next steps would be for staff to reach out to prioritized candidates on the list until we identify three candidates who accept the invitation, or the priority list is exhausted. For candidates who are interested in providing input on the TIO programs but are concerned about the time commitment, we will offer the option for them to be informal advisors or non-voting members of the Steering Committee.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Lucian Go and Karissa White  
Reviewed by: Ranyee Chiang

Attachment 1: Steering Committee Candidates

## **Agenda 4 - Attachment 1 Steering Committee Candidates**

### **Orson Aguilar, President, Greenlining Institute**

Orson Aguilar is the President of the Greenlining Institute. He is a board member at the California Women's Foundation and sits on Bank of America's Community Advisory Committee. He is also a past member of important local boards and committees, including the Mission Economic Development Agency and the City of Oakland's Budget Advisory Committee. Orson received a BA from the University of California at Santa Cruz and an MPA from The University of Texas at Austin. Orson is a product of Greenlining's leadership academy. He was also a Public Policy and International Affairs Fellow and Congressional Hispanic Caucus Institute Fellow.

### **Catha Groot, Principal, Radicle Impact**

Catha Groot is Principal at Radicle Impact, and has more than 10 years of investment experience. Prior to her current position, she was Business Development and Strategy Director at Personal Capital, held Analyst positions at Rockefeller Group Investment Management and UBS Investment Bank. She also co-founded Farm to Cup. She sits on the boards of Aclima, LendStreet Financial, and Local Bushel. She holds a bachelor's degree from Princeton University and an MBA from the Stanford Graduate School of Business.

### **Michael Montgomery, Assistant Director, Water Division, EPA Region 9**

Michael Montgomery is Assistant Director of the Water Division at the Environmental Protection Agency (EPA) Region 9, where he directs Federal programs for drinking water protection and safety, water infrastructure funding, and tribal surface water throughout the Southwest Region. Previously, he served as Assistant Director for Superfund, managing 55 hazardous waste sites on private and federal land. He is a graduate of the Federal Senior Executive Service Development Program as a part of which he spent 5 months at the Bay Area Quality Management District providing input on the initial design of a financial incentive for reducing greenhouse gasses at the Air District's regulated facilities. He holds a bachelor's degree from the University of Redlands.

### **Erin Kilmer Neel, Interim Executive Director, Chief Impact Officer and Deputy Director, Beneficial State Foundation**

Erin Kilmer Neel is Deputy Director and Chief Impact Officer and Interim Executive Director at Beneficial State Foundation. Erin is also Executive Director of the Sustainable Business Alliance of the East Bay. Previously, she was Program Officer at the Beneficial State Foundation (when it was One PacificCoast Foundation). Erin co-founded Oakland Grown and the Oakland Indie Awards, is a BALLE Local Economy Fellow, and serves on the board of directors of the American Independent Business Alliance (AMIBA). Erin has a Master of City Planning from MIT and a Master of Education in Educational Media and Computing from Arizona State University.

**Marilyn Waite, Climate Finance Program Officer, Hewlett Foundation**

Marilyn Waite is a Program Officer in Environment at the William and Flora Hewlett Foundation, where she manages the foundation's grantmaking on climate and clean energy finance. She previously led the clean energy practice at Village Capital, worked as a senior research fellow at Project Drawdown, and led several operational and research and development projects at AREVA in France. Marilyn is also the author of Sustainability at Work. She holds a bachelor's degree in civil and environmental engineering from Princeton University and a master's degree in engineering for sustainable development from the University of Cambridge.

**Renee Webster-Hawkins, Executive Director, California Pollution Control Financing Authority**

Renee Webster-Hawkins is the Executive Director of the California Pollution Control Financing Authority. Most recently, she was interim executive director, chief counsel, and acting chief deputy director at First 5 California. Previously, she served as assistant chief counsel and staff attorney at the California Energy Commission, chief deputy director and chief counsel for the California Department of Community Services and Development, attorney for the Resources Law Group, staff counsel for the Department of Fish and Game, and attorney for the law firm of Remy, Thomas and Moose. Webster-Hawkins received a bachelor's degree in history from the University of California, Davis and a law degree from Stanford University.

**Jetta Wong, Senior Advisor, Los Angeles Clean Tech Incubator**

Jetta Wong is Senior Advisor at the Los Angeles Clean Tech Incubator. Previously, Jetta established and directed the Office of Technology Transitions for the United States Department of Energy and co-chaired the White House's National Science and Technology Council's Lab-to-Market initiative. She also worked in the Department of Energy's Office of Energy Efficiency and Renewable Energy, the United States House of Representatives' Committee on Science, Space, and Technology, the Union of Concerned Scientists, and the Environmental and Energy Study Institute. Jetta holds a MPS in Legislative Affairs from George Washington University and B.S. in Natural Resources and the Environment from the University of Michigan.

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

## Memorandum

To: Chairperson Cindy Chavez and Members  
of the Technology Implementation Office Steering Committee

From: Jack P. Broadbent  
Executive Officer/APCO

Date: October 11, 2018

Re: Technology Assessment and Outreach

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**RECOMMENDED ACTION**

None; receive and file.

**BACKGROUND**

The Technology Implementation Office (TIO) has worked with other Bay Area Air Quality Management District (Air District) Divisions and engaged a consultant to evaluate technology options for reducing greenhouse gas emissions. The evaluation criteria include technology readiness, costs, technical and market barriers, and potential for emissions reductions.

**DISCUSSION**

The completed technology assessment covered 188 technologies that reduce greenhouse gases. Information on these technologies has been organized in a MS Excel matrix that the Air District will use to prioritize the technologies supported through the financing and partnerships program.

Attachment 1 summarizes the key results of the technology assessment. For each of the highlighted technologies, the TIO worked with other appropriate Air District staff to determine the best recommended course of action for the Air District. Strategies available to the Air District include (1) regulate: develop rules to require the adoption of the technology; (2) incentivize: encourage technology implementation through grants and loans; and (3) educate: conduct outreach on promising technologies to relevant stakeholders. Air District staff has shared this study and gathered input from multiple external stakeholders and the Air District Board of Directors.

Staff will also present the outreach strategy and timeline for sharing the relevant information in the technology assessment in a targeted way with stationary facilities, technology developers, and financing partners. Air District staff is interested in input from the Steering Committee on these technology assessment results and how we share results and recommendations with relevant partners. Moving forward, the Air District will continue to seek input from the Steering Committee about relevant technologies and partners, including to update and maintain the technology assessment.



BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Derrick Tang  
Reviewed by: Ranyee Chiang

Attachment 1: Summary of Technology Assessment Results

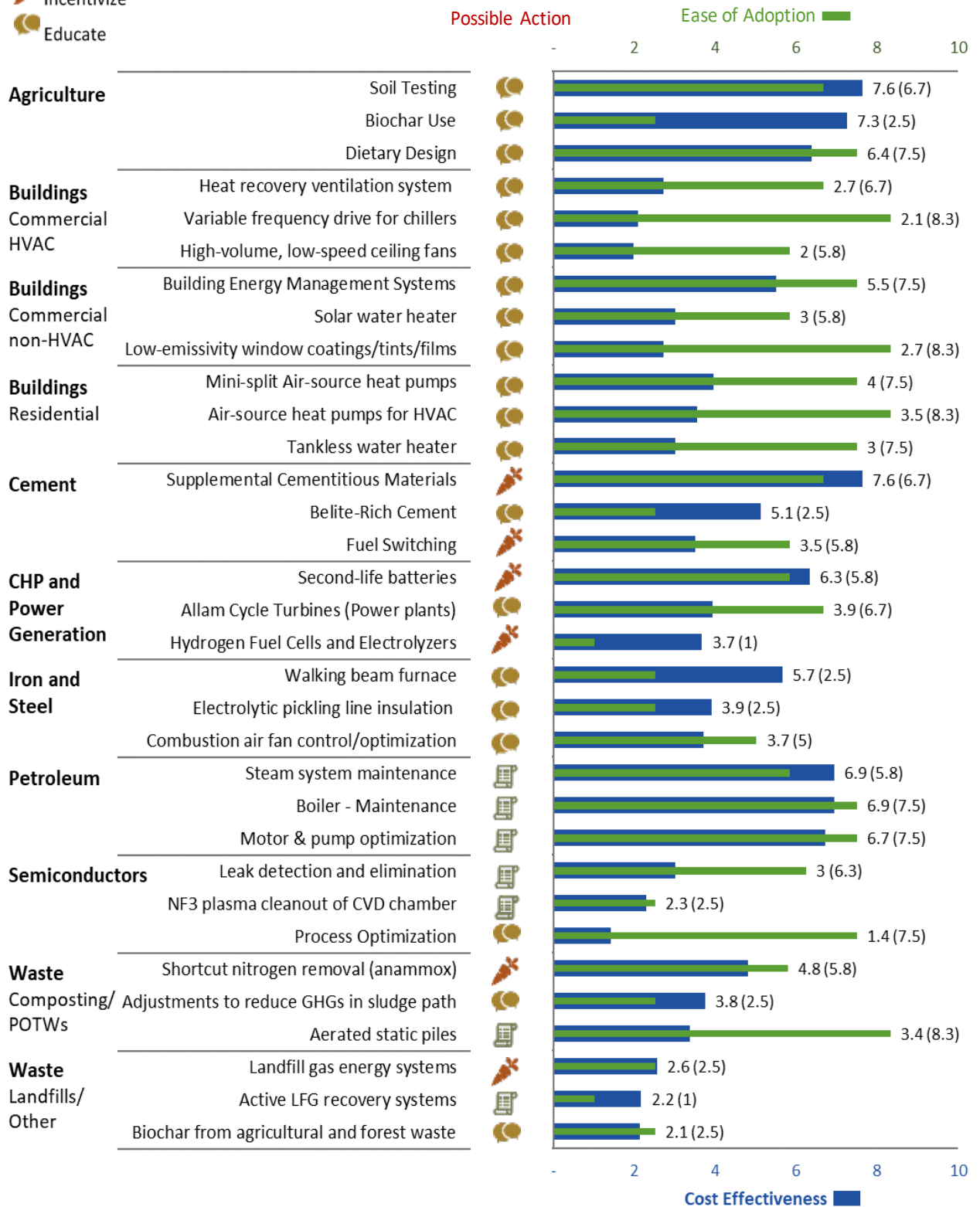
## **Agenda 5 - Attachment 1**

### **Summary of Technology Assessment Results**

The figure on page 2 lists the top three mitigation measures for each industrial sector. For each measure, the green bar shows its Ease of Adoption score based on technical, economic, and policy barriers. The blue bar shows the Cost Effectiveness score, which measures emissions reduction potential and economic viability. The Possible Action icon represents the recommended action to accelerate adoption of this technology and reduce Greenhouse Gases (GHGs) in this sector. The full technology assessment report has more detail on the scoring system and methodology.

## Cost Effectiveness and Ease of Adoption of Top Mitigation Measures by Sector

-  Regulate
-  Incentivize
-  Educate



**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

## Memorandum

To: Chairperson Cindy Chavez and Members  
of the Technology Implementation Office Steering Committee

From: Jack P. Broadbent  
Executive Officer/APCO

Date: October 11, 2018

Re: Loan Program Agreement

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**RECOMMENDED ACTION**

None; receive and file.

**BACKGROUND**

The Bay Area Air Quality Management District (Air District) and the California Infrastructure and Economic Development Bank (IBank) are developing an agreement to offer loans for public sector facilities and loan guarantees for private sector facilities. The Air District Board has authorized the Air Pollution Control Officer to execute the agreement with IBank. Once executed, the Air District-IBank collaboration will create a revolving loan fund so that as project implementers pay back their loans, funding can be reinvested in additional greenhouse gas technology projects.

**DISCUSSION**

This collaboration will allow Air District staff to provide matchmaking and technical evaluations that expand the IBank's customer base and support implementation of eligible greenhouse gas reduction technologies. Municipalities and public universities, schools, and hospitals are eligible for direct loans between \$500,000 and \$30,000,000. The Air District will contribute up to 25% of the loan amount at 0% interest, and cover fees for the first borrowers. Small businesses are eligible for loan guarantees of up to 90% of the loan amount; in these projects, IBank covers 80% of the loan and the Air District covers 10%. This initial loan program will have \$4 million available from the Air District for loans and loan guarantees.

The loan program will be available to Bay Area facilities and focus on specific technology categories based on the results of a technology assessment. For direct loans, Air District funds will be drawn down on a project-by-project basis. The Air District portion of losses in loans and loan guarantees are borne by the Air District. Air District liability cannot exceed the Air District's portion of loans and loan guarantees. The Air District may terminate the program and remaining unallocated funds are not committed. Funds lent by the Air District are to be repaid within 5 years.

For projects that meet eligibility requirements, Air District staff will perform an engineering evaluation of the potential loan project. IBank then performs financial underwriting of the loan. Because the loan funds revolve, initial projects under this program will be evaluated as pilots to inform future loan projects and expand collaborations with IBank and other financing institutions.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None. Funds for the loan program were approved by the Air District Board as part of the Fiscal Year Ending 2019 budget.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Derrick Tang  
Reviewed by: Ranyee Chiang

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

## Memorandum

To: Chairperson Cindy Chavez and Members  
of the Technology Implementation Office Steering Committee

From: Jack P. Broadbent  
Executive Officer/APCO

Date: October 11, 2018

Re: Electric Vehicle Infrastructure and Fleet Incentive Programs

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**RECOMMENDED ACTION**

None; receive and file.

**BACKGROUND**

In 1991, the California State Legislature authorized the Bay Area Air Quality Management District (Air District) to impose a \$4 surcharge on motor vehicles registered within the nine-county Bay Area to fund projects that reduce on-road motor vehicle emissions. This fund, the Transportation Fund for Clean Air (TFCA), supports projects that include ridesharing, clean air vehicles and infrastructure, bicycle infrastructure, and the Spare the Air Program to encourage residents to take action to improve air quality.

Each year, the Air District's Board of Directors (Board) allocates funding and adopts policies and evaluation criteria that govern the expenditure of TFCA funding. On May 2, 2018, the Board authorized funding allocations for Fiscal Year Ending (FYE) 2019, cost-effectiveness limits for Air District-sponsored FYE 2019 programs, and authorized the Executive Officer/Air Pollution Control Officer (APCO) to execute Grant Agreements and amendments for TFCA-revenue funded projects with individual grant award amounts up to \$100,000. On June 6, 2018, the Board adopted policies and evaluation criteria for the FYE 2019 TFCA Regional Fund program.

This report provides a summary of two TFCA-sponsored programs, Charge! and Clean Fleets, which are administered by the Technology Implementation Office. The goal of these programs is to reduce air pollution from transportation and also accelerate the adoption of Electric Vehicles (EVs) in the Bay Area by supporting infrastructure and vehicle fleets.

**DISCUSSION****Charge! Program:**

Projections of EV charging station in the Bay Area indicate a severe gap in needed EV charging stations to support EV adoption goals. The Air District created the Charge! Program in 2016 to rapidly expand and support the installation of electric vehicle (EV) charging stations in the Bay Area. The most recent round of the Charge! Program was open from July 1, 2017 to March 9, 2018. Over \$6.5 million in TFCA funding was awarded which supported the installation of over 2,000 electric vehicle (EV) charging stations in the Bay Area at locations that include workplaces,

destinations such as parks, multi-dwelling units (MDU), transit parking and transportation corridors. The proposed EV charging stations will reduce over 9,400 tons of CO2 per year.

On May 2, 2018, the Board authorized increased cost-effectiveness limits for EV charging station projects at MDU facilities. Staff have incorporated the new cost-effectiveness funding options for MDU into the Program Guidance and will reopen the FYE 2019 Charge! Program on October 25, 2018. Applicants will be eligible for approximately \$3,000 per Level 2 charger and \$18,000 per DC Fast Charger. Additional plus-up funding options are available for projects that include solar generation, multi-port chargers, DC Fast chargers that are accessible 24/7 and installed along major transportation corridors and for projects located in MDU facilities. Up to \$5 million in TFCA funding is available for FYE 2019.

Staff are conducting targeted outreach activities which include webinars, ride-and-drive events, sponsoring events and working with association groups. When the Clean Cars For All Program is launched in December 2018, outreach will be coordinated between the two programs to support expansion of EV infrastructure and adoption to across the entire Bay Area and all income groups.

### **Clean Fleets Program:**

The Clean Fleets Program opened on August 15, 2018. The Clean Fleets Program provides funding to purchase or lease new light-duty zero-emission vehicles including motorcycles, passenger cars, pick-up trucks, and small vans and shuttles. Eligible vehicles include battery electric vehicles or fuel cell vehicles. Eligible projects must include a minimum of 10 vehicle purchases and are eligible for \$1,000 per vehicle in grant funding. Up to \$5 million in TFCA funding is available for FYE 2019.

Staff will continue to outreach to fleet operators, such as police departments and county/city fleet services. Staff will also continue to meet with transportation network companies (TNC) and affiliated organizations such as ride-hail, car-share and rental car companies to transition these fleets towards zero-emissions, which also allow opportunities for members of the public to see and drive EVs.

### **BUDGET CONSIDERATION/FINANCIAL IMPACT**

None. Funding for both Charge! and Clean Fleets has been allocated, and future projects (greater than \$100,000) will be brought to the Board of Directors for consideration.

Respectfully submitted,

Jack P. Broadbent  
Executive Officer/APCO

Prepared by: Mark Tang  
Reviewed by: Ranyee Chiang