



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 Cupta, Prelude Ventures
Ahmad Ganji, San Francisco State Industrial Assessment Center
Dave Hudson, Air District Board of Directors
Janea Scott, California Energy Commission

FRIDAY
MARCH 2, 2018
10:00 A.M.

1ST FLOOR OHLONE ROOM
375 BEALE STREET
SAN FRANCISCO, CA 94105

AGENDA

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

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

Staff/Phone (415) 749-

Clerk of the Boards/5073

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 Council meetings are posted at the Air District, 375 Beale Street, San Francisco, California 94105 at least 72 hours before a meeting.

3. **WELCOME**

J. Broadbent/5052

jbroadbent@baaqmd.gov

The Executive Officer/APCO will address the Steering Committee.

4. **INTRODUCTIONS**

D. Breen/5041

dbreen@baaqmd.gov

The Deputy Air Pollution Control Officer will introduce the Steering Committee members.

5. **OVERVIEW OF AIR DISTRICT AND TECHNOLOGY IMPLEMENTATION OFFICE (TIO)**

R. Chiang/8621
rchiang@baaqmd.gov

The Steering Committee will receive an update on Air District, TIO mission and team, and the Steering Committee's roles and responsibilities.

6. **TECHNOLOGY OPPORTUNITIES AND ASSESSMENT**

R. Chiang/8621
rchiang@baaqmd.gov

The Steering Committee will receive an update on Bay Area industrial facilities and greenhouse gas emissions sources, and technology options for the TIO incentive program, and a technology assessment study.

7. **OVERVIEW OF AIR DISTRICT INCENTIVE PROGRAMS**

R. Chiang/8621
rchiang@baaqmd.gov

The Steering Committee will receive an update on the Stationary Source Incentive Program and Mobile Source Incentive Program.

8. **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)

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

Pursuant to Government Code Section 54954.3, an opportunity is provided for the public to speak on any subject within the Council's purview. Speakers are typically limited to three minutes each.

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

Thursday, June 21, 2018, Bay Area Air Quality Management District Office, 375 Beale Street, San Francisco, California 94105 at 1:00 p.m.

11. **ADJOURNMENT**

The Committee meeting shall be adjourned by the Committee Chair.

CONTACT:

ACTING MANAGER, EXECUTIVE OPERATIONS
375 BEALE STREET, SAN FRANCISCO, CA 94105
vjohnson@baaqmd.gov

(415) 749-4941
FAX: (415) 928-8560
BAAQMD homepage:
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 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.

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 BEALE STREET, SAN FRANCISCO, CALIFORNIA 94105
FOR QUESTIONS PLEASE CALL (415) 749-5016 or (415) 749-4941**

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

FEBRUARY 2018

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Budget & Finance Committee <i>(Meets on the 4th Wednesday of each Month)</i>	Wednesday	28	9:30 a.m.	1st Floor, Yerba Buena Room #109

MARCH 2018

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Technology Implementation Office Steering Committee Meeting <i>(At the Call of the Steering Committee)</i>	Friday	2	10:00 a.m.	1 st Floor Ohlone Room
Board of Directors Regular Meeting <i>(Meets on the 1st & 3rd Wednesday of each Month)</i>	Wednesday	7	9:45 a.m.	1 st Floor Board Room
Board of Directors Climate Protection Committee <i>(Meets on the 3rd Thursday of every other Month)</i>	Thursday	15	9:30 a.m.	1 st Floor Board Room
Board of Directors Executive Committee <i>(Meets on the 3rd Monday of each Month)</i> - CANCELLED	Monday	19	9:30 a.m.	1 st Floor Board Room
Board of Directors Stationary Source Committee <i>(Meets on the 3rd Monday of every other Month)</i>	Monday	19	9:30 a.m.	1 st Floor Board Room
Board of Directors Regular Mtg. <i>(Meets on the 1st & 3rd Wednesday of each Month)</i>	Wednesday	21	9:30 a.m.	1 st Floor Board Room
Board of Directors Mobile Source Committee <i>(Meets on the 4th Thursday of each Month)</i>	Thursday	22	9:30 a.m.	1 st Floor Board Room
Board of Directors Legislative Committee <i>(At the Call of the Chair)</i>	Thursday	22	10:30 a.m.	1 st Floor Board Room
Board of Directors Executive Committee & Advisory Council Joint Mtg. <i>(EC Meets on the 3rd Monday of each Month) and (AC Meets At the Call of the Chair)</i>	Monday	26	9:30 a.m.	1 st Floor Board Room
Board of Directors Budget & Finance Committee <i>(Meets on the 4th Wednesday of each Month)</i>	Wednesday	28	9:30 a.m.	1st Floor, Yerba Buena Room #109

APRIL 2018

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Regular Meeting <i>(Meets on the 1st & 3rd Wednesday of each Month)</i>	Wednesday	4	9:30 a.m.	1 st Floor Board Room
Board of Directors Executive Committee <i>(Meets on the 3rd Monday of each Month)</i>	Monday	16	9:30 a.m.	1 st Floor Board Room
Board of Directors Regular Mtg. <i>(Meets on the 1st & 3rd Wednesday of each Month)</i>	Wednesday	18	9:30 a.m.	1 st Floor Board Room
Board of Directors Budget & Finance Committee <i>(Meets on the 4th Wednesday of each Month)</i>	Wednesday	25	9:30 a.m.	1st Floor, Yerba Buena Room #109
Board of Directors Mobile Source Committee <i>(Meets on the 4th Thursday of each Month)</i>	Thursday	26	9:30 a.m.	1 st Floor Board Room

MAY 2018

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Regular Meeting <i>(Meets on the 1st & 3rd Wednesday of each Month)</i>	Wednesday	2	9:30 a.m.	1 st Floor Board Room
Board of Directors Regular Mtg. <i>(Meets on the 1st & 3rd Wednesday of each Month)</i>	Wednesday	16	9:30 a.m.	1 st Floor Board Room
Board of Directors Climate Protection Committee <i>(Meets on the 3rd Thursday of every other Month)</i>	Thursday	17	9:30 a.m.	1 st Floor Board Room
Board of Directors Executive Committee <i>(Meets on the 3rd Monday of each Month)</i>	Monday	21	9:30 a.m.	1 st Floor Board Room
Board of Directors Stationary Source Committee <i>(Meets on the 3rd Monday of every other Month)</i>	Monday	21	10:30 a.m.	1 st Floor Board Room
Board of Directors Budget & Finance Committee <i>(Meets on the 4th Wednesday of each Month)</i>	Wednesday	23	9:30 a.m.	1st Floor, Yerba Buena Room #109
Board of Directors Mobile Source Committee <i>(Meets on the 4th Thursday of each Month)</i>	Thursday	24	9:30 a.m.	1 st Floor Board Room

HL – 2/23/18 – 12:15 p.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: February 20, 2018

Re: Overview of Air District and Technology Implementation Office (TIO)

RECOMMENDED ACTION

None; receive and file.

DISCUSSION

The Air District established the Technology Implementation Office (TIO), to advance disruptive, cost-effective solutions to reduce greenhouse gas emissions in the Bay Area, that are also replicable in other regions. The TIO will cultivate partnerships and incentives for low carbon intensity practices including deployment of zero emissions vehicles and infrastructure and of technologies that reduce greenhouse gas emissions at stationary sources.

During the first meeting of the Technology Implementation Office Steering Committee, Air District staff will introduce the Air District, TIO mission and staff. Staff will also introduce the Steering Committee Members (Attachment 3A) and Charter (Attachment 3B).

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Deanna Yee, Ranyee Chiang
Reviewed by: Damian Breen

Attachment 5A: Steering Committee Member Biographies
Attachment 5B: Steering Committee Charter



Technology Implementation Office (TIO)

Steering Committee Biographies

Bud Beebe

Professional Mechanical Engineer, Senior Advisor, California Hydrogen Business Council

Mr. Beebe has nearly fifty years' experience in distributed and central power plant design and regulation. Mr. Beebe is recently retired from the Sacramento Municipal Utility District where he worked in emerging technologies including fuel cells, photo-voltaic and solar thermal power. Mr. Beebe was also active in development of national and state renewable energy and greenhouse gas reporting protocols as well as the development of California's suite of AB-32 regulations. Mr. Beebe is a past National Hydrogen Association Board Member, and currently serves as Chair, Green-e Governance Board.

Cindy Chavez (Steering Committee Chairperson)

Air District Board of Directors, Santa Clara County Supervisor

Supervisor Chavez represents close to 400,000 residents in Central, East and South San Jose and helps develop and oversee the safety-net services for our most vulnerable residents including senior citizens and children. Ms. Chavez chairs the Board's Children, Families and Seniors Committee and serves on the Finance and Government Operations Committee. She also serves as Vice-Chair of the [Valley Transportation Authority](#) (VTA) and is a member of the [CalTrain](#) Board of Directors and will play a leadership role in the electrification of Cal Train and Bart coming to downtown San Jose. As an Air District Board Member, Supervisor Chavez serves as the Chair of the Ad Hoc Refinery Oversight Committee and Chair of the Bay Area Regional Collaborative (BARC).

Mark Cupta

Principal, Prelude Ventures

Mr. Cupta partners with and invests in entrepreneurs focused on technology innovations to reduce global climate emissions. Mr. Cupta has also worked in corporate venture capital, with Chevron Technical Ventures, and with the sustainable chemistry start-up, Novomer. At Celanese Corporation, an advanced materials and chemicals company, Mr. Cupta held technical roles in product development and process design, as well as commercial roles in technical marketing and business development. Mark has authored patents and publications in technologies, including microelectronics, engineered polymers, advanced cements, barrier coatings, pharmaceutical delivery systems, and pulp & paper additives.

Ahmad Ganji

Director of San Francisco State University (SFSU) Industrial Assessment Center

Dr. Ganji has directed the Industrial Assessment Center (IAC) since 1992. IAC is a US Department of Energy funded project dedicated to helping manufacturing facilities improve energy efficiency, reduce waste and improve their productivity. In this capacity he has helped more than 400 manufacturers in California, Nevada and Hawaii. Professor Ganji regularly consults with Pacific Gas & Electric Co. on energy efficiency projects. Dr. Ganji is a professor of mechanical engineering at SFSU. He has over 40 publications in the fields of thermal-fluids and energy. He is the co-author of the textbook "Engineering Experimentation," published by Prentice Hall, 2010 (3rd Ed.)

David Hudson

Air District Board of Directors Chairperson, San Ramon City Council Member

Council Member Hudson is currently a 5-term San Ramon City Council Member, and served as Mayor in 2001. He is the current Chair of the Bay Area Air Quality Management District Board of Directors. He has served as both Chair and Vice-Chair on San Ramon's Redevelopment Agency for four terms and the City's Planning Commission for two terms. Mr. Hudson is also on the board of the Contra Costa Transportation Authority and the League of California Cities Policy Committee.

Janea Scott

Commissioner, California Energy Commission

Commissioner Scott is the lead Commissioner on transportation and western regional planning. Ms. Scott serves as the Chair of the Western Interconnection Regional Advisory Body and is on the public policy board of Veloz, a nonprofit founded to advance the electric car movement. She is also a member of the California Fuel Cell Partnership and the U.S. Department of Energy's Hydrogen and Fuel Cell Technical Advisory Committee. Prior to joining the Energy Commission, Ms. Scott worked at the U.S. Department of the Interior Deputy Counselor for Renewable Energy and at Environmental Defense Fund in both the New York and Los Angeles offices as a senior attorney in the climate and air program.



Technology Implementation Office (TIO)

Steering Committee Charter

I. TIO Mission

The Technology Implementation Office (TIO) at the Bay Area Air Quality Management District (Air District) was established to advance the Clean Air Plan vision for a post-carbon Bay Area by 2050. The mission is to catalyze innovation by advancing disruptive, cost-effective solutions to achieve greenhouse gas emissions reductions. TIO will cultivate partnerships and provide financing to incentivize low carbon intensity practices across industries including deployment of zero emissions vehicles and infrastructure, zero emissions energy generation, efficient production and smart/connected technologies.

II. Role of committee

- Facilitate vision and strategy setting for the TIO
- Support execution of the strategy and resolving challenges
- Provide recommendations on technology readiness, business readiness, market and emission reduction impact
- Recommend strategies to maximize effectiveness of TIO budget and financing programs
- Raise profile and visibility of office and identify new partnership opportunities

The TIO is seeking recommendations from individual committee members and recommendations that may arise from the whole committee. Committee recommendations will be vetted and approved by the Air District Board, the body with authority over program expenditures.

III. Membership and operation

7 members representing leaders across multiple areas of expertise, including technology, investment, banking, business, researchers, and local government representatives.

Steering committee members are asked to commit to at least a 2 year term.

Meetings will be held quarterly in San Francisco in the first year of the TIO, and semiannually after the initial strategy phase and launch.

IV. Responsibilities for Committee Members

- Attend all meetings, which will be chaired by the Steering Committee Chairperson. Teleconference options will be made available if needed.
- Provide feedback on strategic priorities for TIO, launch, and implementation of programs.
- Review TIO updates and help prioritize technology and funding opportunities.
- Share relevant updates from partners, which can help the TIO develop a distinct niche and leverage other partners' activities
- Share information through your network and at conferences to increase awareness of the TIO, develop partnership opportunities, and to advocate for more support for TIO programs.

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: February 20, 2018

Re: Technology Opportunities and Assessment

RECOMMENDED ACTION

None; receive and file.

DISCUSSION

The greenhouse gas emissions (GHG) from the Bay Area's non-transportation sources are about 50 million metric tons per year, representing 59% of total emissions. This category includes industrial facilities, energy production, waste management, buildings, and agriculture. Air District staff will provide an overview of the Bay Area's GHG emissions sources across the major industrial sectors. Air District staff will also introduce the technology options that will be evaluated in an upcoming technology assessment study, including technology readiness, costs, technical and market barriers, and emissions reductions. The results of this study will be used to prioritize the technologies supported through the financing and partnerships program of the Technology Implementation Office of the Air District.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Deanna Yee, Ranyee Chiang

Reviewed by: Damian Breen

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: February 20, 2018

Re: Overview of Air District Incentive Programs

RECOMMENDED ACTION

None; receive and file.

DISCUSSION

The goal of the Air District's incentive programs is to fit within the existing landscape of grant and loan programs and provide incentives for increased implementation of greenhouse gas-related technologies. Air District staff will provide an overview of current programs and stakeholder feedback on where the Air District programs can provide the most value. Air District staff will also provide an update on the financing program that is being discussed as a partnership with California state's green bank, the IBank.

BUDGET CONSIDERATION/FINANCIAL IMPACT

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Deanna Yee, Ranyee Chiang
Reviewed by: Damian Breen