BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

ADVISORY COUNCIL
REGULAR MEETING

MONDAY
FEBRUARY 6, 2017
10:00 A.M.

1ST FLOOR BOARD 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-

2. **APPROVAL OF THE MINUTES OF OCTOBER 3, 2016** **Clerk of the Boards/5073**

   The Advisory Council will consider approving the draft minutes of the Advisory Council Regular Meeting of October 3, 2016.

3. **WELCOME** **J. Broadbent/5052**
   jbroadbent@baaqmd.gov

   The Executive Officer/APCO will address the Council.

4. **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.

   *This meeting will be webcast. To see the webcast, please visit **http://www.baaqmd.gov/about-the-air-district/advisory-council/agendasreports** at the time of the meeting.*

OTHER BUSINESS

5. **ADVISORY COUNCIL DELIBERATION ON THE KEY QUESTION**

J. McKay/4629
jmckay@baaqmd.gov

The Council will consider finalizing its opinion on the first key question.

6. **PRESENTATION ON REGULATION 13, RULE 1: REFINERY CARBON INTENSITY CAP**

J. McKay/4629
jmckay@baaqmd.gov

Regulation 13, Rule 1 would be the first step in the Air District's strategy to reduce combustion emissions across the region.

7. **ADVISORY COUNCIL DELIBERATION ON THE DRAFT 2017 CLEAN AIR PLAN/REGIONAL CLIMATE PROTECTION STRATEGY**

J. McKay/4629
jmckay@baaqmd.gov

The Council's input is requested on the Draft Clean Air Plan (CAP) with particular emphasis on the Executive Summary and First Chapter.

8. **CHAIRPERSON'S REPORT**

The Chairperson will provide the Advisory Council with a report of recent and upcoming activities.

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. **COUNCIL MEMBER COMMENTS / OTHER BUSINESS**

Council members may make a brief announcement, provide a reference to staff about factual information or ask questions about subsequent meetings.

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

At the call of the Chair.

12. **ADJOURNMENT**

The Council meeting shall be adjourned by the Chair.

CONTACT:
MANAGER, EXECUTIVE OPERATIONS **(415) 749-5016**
375 BEALE STREET, SAN FRANCISCO, CA 94105 **FAX: (415) 928-8560**
mmartinez@baaqmd.gov **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 "Advisory Council" and received at least 24 hours prior, excluding weekends and holidays, in order to be presented at that Council meeting. Any correspondence received after that time will be presented to the Council 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 2017

TYPE OF MEETING	DAY	DATE	TIME	ROOM
Advisory Council Meeting *(At the Call of the Chair)*	**Monday**	**6**	**10:00 a.m.**	**1st Floor Board Room**
Board of Directors Regular Meeting *(Meets on the 1st & 3rd Wednesday of each Month)* - **CANCELLED**	**Wednesday**	**15**	**9:45 a.m.**	**1st Floor Board Room**
Board of Directors Stationary Source Committee *(Meets on the 3rd Monday of each Month)* - **CANCELLED**	**Monday**	**20**	**10:30 a.m.**	**1st Floor Board Room**
Board of Directors Budget & Finance Committee *(Meets on the 4th Wednesday of each Month)*	**Wednesday**	**22**	**9:30 a.m.**	**1st Floor, Yerba Buena Room #109**
Board of Directors Executive Committee *(Meets on the 3rd Monday of each Month)*	**Wednesday**	**22**	**10:30 a.m.**	**1st Floor, Yerba Buena Room #109**
Board of Directors Mobile Source Committee *(Meets on the 4th Thursday of each Month)*	**Thursday**	**23**	**9:30 a.m.**	**1st Floor Board Room**

MARCH 2017

TYPE OF MEETING	DAY	DATE	TIME	ROOM
Board of Directors Regular Meeting *(Meets on the 1st & 3rd Wednesday of each Month)*	**Wednesday**	**1**	**9:45 a.m.**	**1st Floor Board Room**
Board of Directors Regular Meeting *(Meets on the 1st & 3rd Wednesday of each Month)*	**Wednesday**	**15**	**9:45 a.m.**	**1st Floor Board Room**
Board of Directors Climate Protection Committee *(Meets on the 3rd Thursday of every other Month)*	**Thursday**	**16**	**9:30 a.m.**	**1st Floor Board Room**
Board of Directors Executive Committee *(Meets on the 3rd Monday of each Month)*	**Monday**	**20**	**9:30 a.m.**	**1st Floor Board Room**
Board of Directors Stationary Source Committee *(Meets on the 3rd Monday of each Month)*	**Monday**	**20**	**10:30 a.m.**	**1st Floor Board Room**
Board of Directors Budget & Finance Committee *(Meets on the 4th Wednesday of each Month)*	**Wednesday**	**22**	**9:30 a.m.**	**1st Floor, Yerba Buena Room #109**
Board of Directors Mobile Source Committee *(Meets on the 4th Thursday of each Month)*	**Thursday**	**23**	**9:30 a.m.**	**1st Floor Board Room**

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Stan Hayes and Members of the Advisory Council

From: Jack P. Broadbent
Executive Officer/APCO

Date: January 23, 2017

Re: Approval of the Minutes of October 3, 2016

RECOMMENDED ACTION

Approve the attached draft minutes of the Advisory Council meeting of October 3, 2016.

DISCUSSION

Attached for your review and approval are the draft minutes of the Council meeting of October 3, 2016.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Marcy Hiratzka
Reviewed by: Maricela Martinez

Attachment 3A: Draft Minutes of the Advisory Council Meeting of October 3, 2016

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

DRAFT MINUTES

Advisory Council Regular Meeting
Monday, October 3, 2016

Note: An audio recording of the meeting is available on the website of the Bay Area Air Quality Management District at http://www.baaqmd.gov/about-the-air-district/advisory-council/agendasreports

1. CALL TO ORDER

Advisory Council (Council) Member Stan Hayes called the meeting to order at 10:05 a.m.

Roll Call:

Present: Council Chair Hayes and Members: Professor Borenstein, Ms. Doduc, Dr. Harley, Dr. Lipman, and Dr. Long.

Absent: Council Vice Chair Kleinman.

Also Present: Cupertino Councilman Rod Sinks, Board of Directors (Board) Liaison.

2. APPROVAL OF THE MINUTES OF JULY 19, 2016

Public Comments:

No requests received.

Council Comments:

Chair Hayes requested that the Clerk amend the language of the second paragraph of Item 9 of the draft Advisory Council minutes of July 19, 2016. He submitted his corrections in writing, which the Clerk agreed to incorporate after the meeting.

Council Action:

Member Long made a motion, seconded by Member Borenstein, to approve the Advisory Council minutes of July 19, 2016 as amended; and the motion carried by the following vote of the Council:

AYES:	Borenstein, Harley, Hayes, Lipman, and Long.
NOES:	None.
ABSTAIN:	Doduc.
ABSENT:	Kleinman.

3. WELCOME

Chair Hayes reviewed the items of the agenda and explained the history of the key question for deliberation, which is, "What is the efficacy of imposing greenhouse gas (GHG) caps on Bay Area refineries?" Dr. Jeffrey McKay, Deputy Air Pollution Control Officer, thanked the Council for all of its previous deliberations on the key question, which was to be continued at this meeting. Jack Broadbent, Executive Officer/Air Pollution Control Officer, thanked the Council for its time and input, adding that the Air District's Board of Directors values the opinions of the Council to help drive policy. When asked to comment on behalf of the Board of Directors, Ex-Officio Advisory Council Member, Director Rod Sinks, said that the Board has had much discussion on the topic of leakage (the implications of shifting generation to plants outside the territory in which a cap is being enforced) and is also considering certain regulation for all industries, not just refineries.

4. PUBLIC COMMENT ON AGENDA MATTERS

Don Cuffel, Valero, urged the Council to be mindful of the correlation between California Air Resources Board (ARB) regulations regarding reformulating fuel and the increase of GHG caps and leakage. Mr. Cuffel also stated that Title V permits already contain operating and emission caps, and said that he feels that those who want additional caps at historical levels are trying to put the refineries out of business.

5. COUNCIL DELIBERATION ON THE KEY QUESTION

Dr. McKay produced a draft summary of the Council's prior deliberations entitled "Bay Area Quality Management District Advisory Council Efficacy of Greenhouse Gas Caps on Bay Area Refineries." This document contained the following sections: Key Question Before the Council; Summary; Discussion; Guiding Principles; and Conclusions. Chair Hayes asked the Council to deliberate on the document as a whole before deliberating and wordsmithing each individual section.

<u>Council Comments on the Document in General:</u>

The Council and staff discussed the clean and ever-improving development of this document, over time; the feasibility of revising the key question to consider ambient air pollutants and lack of action to improve the air quality of low-income communities, rather than focusing on reducing GHG emissions; the need to add recommendations, such as looking for large-scale fugitive emissions, and solidify the draft recommendations in this document; background on the Air District's development of the single Environmental Impact Report (EIR) that will consider two proposals – a staff proposal (Rule 11-18) and a community proposal (Rule 12-16); the difference between toxics and ambient air pollutants, relative to localized versus regional impacts; the number and types of District monitoring stations in the Bay Area, whether or not the public has access to the data, and whether or not the District can afford additional monitors; the District's

request that the Office of Environmental Health Hazard Assessment (OEHHA) incorporate the non-cancer adverse health effects of particulate matter (PM) into the health risk assessment (HRA) process, relative to proposed Rule 11-18; whether or not OEHHA is the only authority on which to base policy; the suggestion of having a formal presentation on Draft Rule 11-18 at the next Advisory Council meeting; and the fact that the community proposal (Draft Rule 12-16) may not have been thoroughly addressed by the Council.

Council Comments on "Summary" Section:

The Council and staff discussed how the language of the Key Question bullet is precise, but the language of the other three bullets within the Summary is vague; the assumption that people will only read the Summary section of the document, which may require that the Summary become more detailed; whether or not to combine the language from the Conclusion section with the Summary language; the feasibility of creating a preamble to precede the Summary, and whether or not the preamble should include a multi-pollutant context that addresses the co-benefits of a cross-media of environmental concerns; possible language in the preamble to explain the Council's opinion that caps are not appropriate that the District is looking at evaluating measures that *would* be effective in reducing global greenhouse gas emissions, minimizing leakage risk, and complementing and reinforcing GHG reduction measures adopted by the state; why it is not considered "premature" to reference this information in a document, as the hope is that the Board of Directors will use this information gathered by the Council; whether or not the word "encourage" should be replaced with "require" in the Policy Recommendation (second) bullet; whether or not to address global leakage in the second bullet; the prospect of including the language of the public's concerns within this bullet; the possibility of refocusing this bullet to urge the District to work with state agencies in complementary ways to reduce GHG; not deviating from the discussion of refineries; that the public needs to be assured that the Council is not using leakage as an excuse for inaction; referencing Draft Rule 11-18 in language of the "Related Policy Recommendation" (third) bullet; whether or not to exclude GHG reduction language from this bullet and focus solely on toxics; and combining the language of the bullets, which could eliminate the need for the fourth bullet.

Council Comments on "Discussion" Section:

The Council and staff discussed the need to address toxics more directly in the Discussion section of the document; the need for language on Draft Rules 11-18 and 12-16 in this section; moving the bold paragraph, describing how the District can influence Bay Area GHG emissions in other ways, to either the Summary or Conclusion section of the document; whether or not methane is technically considered "high global warming potential"; and the need to encourage lower carbon generation and decarbonized energy prior to the promotion of carbon capture and sequestration in the second to the last paragraph of this section.

Council Comments on "Guiding Principles" Section:

The Council and staff discussed renaming and moving the Guiding Principles section (to follow the Summary); the formatting typo in section 2, iii of this section; and whether or not to combine section 3 with section 2 or move section to the Conclusion section.

Council Comments on "Conclusions" Section:

The Council and staff discussed how the Key Question language in the Conclusion section of the document should match the Key Question language of the Summary section, verbatim; and the fact that the Council is endorsing an approach that supports Draft Rule 11-18.

Chair Hayes announced that revisions of this draft document will be considered at next Advisory Council meeting. District Counsel emphasized that this draft may be circulated for review, but that discussion of it would require a public meeting to be held.

The Council recessed at 12:10 p.m. and resumed at 1:05 a.m.

6. AIR DISTRICT CLEAN AIR PLAN: AREAS FOR FUTURE FOCUS

Dr. McKay introduced this item, explaining the origin, purpose, and evolution of the Clean Air Plan. He emphasized that the District has gradually included measures in previous plans directed not only at ozone precursors but also toxics, particulate matter, and greenhouse gas, and that the 2010 plan was the first one to explicitly attack these four issues as part of an integrated multipollutant strategy. Dr. McKay said that the District is being challenged to look at goals out to 2050, particularly for greenhouse gas emissions, and this will require the creation of new and ambitious programs. He concluded by stating that the District is therefore incorporating into the Plan a "Future Focus" section in order to increment ozone, greenhouse gases, and toxics in the near term, and identify new areas for focus or new strategies that can have significant impact towards those 2050 goals or towards impact beyond the Bay Area.

Dr. McKay introduced Henry Hilken, Director of Planning and Climate Protection, who gave the staff presentation *Air District Clean Air Plan: Areas for Future Focus*, including: Clean Air Plan/Regional Climate Protection Strategy; multi-pollutant, multi-sector control strategy; Bay Area in 2050; examples of a vision 2050; and potential areas of future focus.

At this time, the Clerk was prompted by Chair Hayes project on the screen a list of proposed topics of future focus for the Plan that were presented at the July 19, 2016 Advisory Council meeting, in order to invite Council to provide thoughts on the opportunity or lack thereof in these items, or suggest other items.

Public Comments:

No requests received.

Council Comments:

The Council discussed how the task of achieving the 2050 GHG reduction target will be daunting, and figuring out ways to achieve those reductions will require changing human behavior; and how the Air District's primary goal is to create a healthy breathing environment for every Bay Area resident while protecting and improving public health, air quality, and the global climate. Comments made regarding specific potential areas of future focus, which may be appropriate for future rules, program, and research, include the following:

Emerging Technologies, E.G., Autonomous Vehicles, Energy Storage

The Council discussed the need to remember technology-spillover value, not just local value; the benefits of extending GHG-reduction technology to other regions, and trying new methods that have a real potential for affecting the rest of the world; and the need to find creative ways to eliminate diesel backup generators.

Evolving Understanding of Health Effects of Air Pollution, E.G., Ultrafine PM

The Council discussed Vice Chair Kleinman's leading research on the health effects of ultrafine PM and black carbon, and how it is important to understand what the risk-drivers are.

Effective & Equitable Pricing Strategies and Appropriate Role for Air District

The Council discussed engaging in congestion pricing strategies and how to induce behavior into aligning with new technology.

Appropriate Role for The Air District to Advance Decarbonization Strategies, Particularly in Energy and Transportation Sectors (Achieving Significant Reductions in Vehicle Miles Travelled)

The Council and staff discussed the need for regional interagency cooperation in order to align intertwining environmental and mobility crises in the Bay Area and rally political support to address these issues; infrastructure challenges; efforts of the Goods Movement; the importance of basing analysis on technology that is feasible in the near term when wanting to decarbonize energy systems; how renewable energy and energy efficiency are not the mission of the District; how simply electrifying transportation is not the sole solution to transportation issues; which consultants are best-positioned to provide system-modeling expertise; the carbon-free efforts of Silicon Valley Clean Energy and Peninsula Clean Energy (community choice aggregation agencies in Santa Clara and San Mateo Counties), and the need to be honest about potential leakage that may occur; the idea of using time or financial incentives to modify human behavior; long-term concepts derived from the Department of Transportation's Smart City Challenge that may pertain to the District's future efforts in emission reduction within the transportation sector; the District's hope that its electric-vehicle infrastructure efforts help accelerate adoption percentages in areas outside of the Bay Area; how oil use trends could affect the District's attempts to increase electrification in vehicles; the World Business Council for Sustainable Development's *Vision 2050 Report*; and the District's role in influencing change.

How Use Consumption-Based GHG Inventory to Inform, Support Programs

The Council discussed the need to remember that changing behavior regarding energy consumption and leakage in developing countries, not just in highly-developed counties, is essential to making real progress; the feasibility of incentivizing the offsetting of GHG emissions; and the District's most effective use of its long-term development of model greenhouse gas regulatory policies, cutting-edge regulation of greenhouse gases, and climate protection with a consumption-based inventory.

Carbon Capture and Storage, And Appropriate Role for The Air District

The Council discussed how carbon capture and storage and imposing carbon taxes do not fit with the District's mission statement.

Other

The Council discussed the State Water Resources Control Board's (SWRCB) focus on connections between water, climate change, GHG, energy, and transportation, such as sea level rise, storm water capture, and reuse, and the suggestion that the SWRCB meet with the District to collaborate efforts on these ideas.

At this point, Chair Hayes suggested that staff put all the discussed methods of reducing GHG emissions onto a matrix so that each strategy may be rated according to leakage risk and other criteria and metrics that can measure their surmised effectiveness. Chair Hayes said that he hoped that sorting activity would be able to better clarify the District's priorities.

Council Action:

None; receive and file.

OTHER BUSINESS

7. PUBLIC COMMENT ON NON-AGENDA MATTERS

None.

8. COUNCIL MEMBER COMMENTS / OTHER BUSINESS

None.

9. TIME AND PLACE OF NEXT MEETING

Chair Hayes directed staff to poll the Council for meeting dates in January 2017.

10. ADJOURNMENT

The meeting adjourned at 2:35 p.m.

Marcy Hiratzka
Clerk of the Boards

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Stan Hayes and Members of the Advisory Council

From: Jack P. Broadbent
Executive Officer/APCO

Date: January 24, 2017

Re: Advisory Council Deliberation on the Key Question

RECOMMENDED ACTION

None; receive and file.

DISCUSSION

The Council will continue its discussion on the first key question regarding the efficacy of Greenhouse Gas (GHG) caps for local refineries, considering information provided to date. The Council will review a summary of their prior deliberations and opinions. The Council will consider finalizing its opinion on the question.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Jeff McKay

Attachment 5A: Draft Bay Area Air Quality Management District Advisory Council Efficacy of Greenhouse Gas Caps on Bay Area Refineries

BAY AREA AIR QUALITY MANAGEMENT DISTRICT ADVISORY COUNCIL
EFFICACY OF GREENHOUSE GAS CAPS ON BAY AREA REFINERIES

KEY QUESTION BEFORE THE COUNCIL

Air District staff asked the Advisory Council to consider the following question:

"What is the efficacy of imposing greenhouse gas caps on Bay Area refineries?"

PREAMBLE

While the key question focuses on refinery greenhouse gas (GHG) emissions and global climate change, the Council recognizes that there are also community concerns about the effects of refinery toxics and criteria pollutant emissions on health risk, particularly near refineries. We view both climate and health risk considerations as crucially important, and the Council's opinions are meant to address both.

With respect to climate, we conclude that refinery GHG caps are unlikely to be effective in mitigating global climate change. That conclusion, however, is not an endorsement of inaction. The Council strongly supports coordinated climate protection efforts by the Air District, CARB, USEPA, and others, and the Council views as urgent further efforts by all to take effective steps toward climate protection.

With respect to health risk, we conclude that toxics and criteria pollutant health risk are most effectively addressed directly, through established health-based programs and measures such as draft rule 11-18, rather than indirectly as co-benefits of GHG reduction policies.

CONCLUSIONS

Based on the material that it has considered, its deliberations, and its collective expertise and experience, the Council has reached the following conclusions:

- Conclusion on Key Question: The Council concludes that facility-level caps on Bay Area refinery GHG emissions are unlikely to be effective in mitigating global climate change. GHG reduction policies are effective in providing climate protection only if total global GHG emissions are reduced, and if leakage occurs (that is, GHG emissions are shifted outside of the Bay Area to other locations instead of being reduced), which is likely with refinery GHG caps, such caps would not provide such protection.
- Policy Recommendation: The Council recommends that the Air District identify, systematically evaluate, prioritize, and adopt Bay Area GHG reduction policies and measures, including ones directed at refineries as appropriate, that are effective in reducing total global GHG emissions, minimize leakage risk, and complement and reinforce GHG reduction measures adopted by CARB (e.g., GHG cap-and-trade and methane reduction programs), USEPA, and others.
- Policy Recommendation: The Council recommends that the Air District address community concerns about toxics and criteria pollutants directly, through established programs, rather than indirectly as co-benefits of GHG reduction policies. The approach embodied in proposed rule 11-18 is consistent with this recommendation.

GUIDING PRINCIPLES

The Council has developed the following guiding principles that it regards as useful when evaluating the efficacy of Refinery GHG caps:

1. Clear goals: The Air District should state its goals clearly. If the goal of a proposed GHG reduction measure, such as a Refinery GHG cap, is climate protection, then that goal should be explicitly stated. If toxics reduction is the goal, that should be stated. If, instead, the goal is to limit or reduce the amount or nature of crude throughput at Bay Area refineries, that is a different goal, and should be clearly stated.

2. Systematic evaluation of policies to ensure that they support the goals: The Air District should align its policies, including refinery-related GHG measures, with its goals and ground them in plausible and workable pathways specific to those goals, and careful of unintended consequences.

3. Evaluation and prioritization of GHG reduction options: The Air District should systematically evaluate and prioritize the effectiveness of Bay Area GHG reduction options. Criteria should include the following:

    i) Total global GHG emissions must actually be reduced. To ensure effective climate protection benefits, the Air District should adopt policies that truly reduce total global GHG emissions, and not simply displace Bay Area GHG emission elsewhere outside the Bay Area through leakage.

    ii) GHG regulations should be complementary and non-conflicting. The climate change regulatory landscape is complex. To be most effective, Air District policies should be complementary and non-conflicting with those established by CARB, USEPA, and others. Coordination should include enhanced measurements of GHG emissions.

    iii) Interactions of GHG and other programs and policies should be evaluated. While GHG reduction policies and toxics and criteria pollutant control programs are often synergistic, they are not always so. It is important that interactions among such programs and policies be evaluated and addressed to maximize health and climate benefits and minimize unintended consequences.

DISCUSSION

It is the mission of the Air District to "create a healthy breathing environment for every Bay Area resident while protecting and improving public health, air quality, and the global climate."

Toward that end, the Air District has regulated toxics and criteria pollutants for over 60 years. During this time, there has been continuous improvement in Bay Area air quality due to Air District efforts, along with those of CARB, USEPA, and others. This process of continuous improvement has incorporated evolving understanding of atmospheric science, toxics and criteria pollutant health effects, and improving emissions control technology. The Air District has acted within a framework of State, Federal and local regulations, while also enacting its own rules.

Over a period of decades, the Air District has implemented a number of effective and proven regulatory programs and adopted rules to ensure that clean air health and other environmental standards are met.

Programs specifically directed at toxics include New Source Review of Toxic Air Contaminants, emission and/or performance standards for hazardous air pollutants, the Community Air Risk Evaluation (CARE) Program, and the California Air Toxics "Hot Spots" Program. Programs directed at criteria pollutants include the Multi-Pollutant Clean Air Plan (which also includes GHGs), New Source Performance Standards for new sources, and emission and/or performance standards for existing sources.

The Air District has enacted a number of rules directed specifically at reducing toxics and criteria pollutant emissions from refineries, with additional such rules the subject of currently on-going rulemaking. A significant expansion of community risk-based protection would be provided by draft "Regulation 11, Rule 18: Reduction of Risk from Air Toxic Emissions at Existing Facilities". This rule would improve air quality and reduce toxic emissions from facilities ranging in size from large-scale plants like factories and refineries to smaller operations like back-up generators and gas stations. The Air District estimates that hundreds of facilities throughout the Bay Area may be subject to the proposed rule, which would incorporate recently adopted risk management guidelines and health risk values from the California Office of Environmental Health Hazard Assessment.

Under draft Rule 11-18, Air District staff would conduct site-specific health risk screening analyses for all facilities that report toxic air contaminant emissions, and calculate health prioritization scores based on the amount of toxic air pollution emitted, the degree of toxicity of these pollutants, and the proximity of these facilities to local communities. The Air District would conduct health risk assessments for facilities found to have priority scores above a threshold value.

All facilities found to have a cancer risk in excess of 10 in a million or an acute hazard index greater than 1.0 would be required to reduce their risk below 10 in a million and their hazard index below 1.0, or install Best Available Retrofit Control Technology for Toxic Pollutants on all significant sources of toxic emissions.

Because their effectiveness and focus have been amply demonstrated, the Council concludes that toxics and criteria pollutants should be regulated directly through such established programs, rather than indirectly as co-benefits of GHG reduction policies. The most effective place for Bay Area GHG emissions policy is within a comprehensive multi-pollutant strategy that accounts for the realities of conflicting effects, where present, including both co-benefits and dis-benefits.

Climate change is one of the most serious and urgent challenges confronting not just the Bay Area, but the world. That is why, for more than a decade, since 2005, the Air District Board, Staff, and Advisory Council have worked together in efforts that today place the Air District at the leading-edge of climate protection efforts by local agencies in California and throughout the U.S. Programs directed at global climate change include the Climate Protection Program, Regional Climate Protection Strategy, GHG emission inventories, and Plan Bay Area (with the Metropolitan Transportation Commission and others).

In determining the most effective path forward for its climate protection efforts, the Air District works within a framework of existing climate regulations enacted by the State of California, the Federal government, and others. Unlike toxics and criteria pollutants, for which effects of concern typically occur adjacent to emitting sources (tens of meters) or near-downwind (hundreds of meters to several kilometers), the relevant effects of climate change (and the GHGs that cause it) are global. In the Bay Area, such effects will include flooding from sea level rise, and increases in airborne pollutants from wild fires.

Climate change is one-world in scope, driven not just by GHG emissions from a single facility, localized area, or even a large geographical region, but by the world-wide total of all GHG emissions. While a ton of GHGs emitted anywhere in the world has the same effect on global climate as a ton of GHG emitted in the Bay Area, this is not a rationale for inaction but rather a call for leadership.

> ***The Council strongly supports climate protection efforts by the Air District, State and Federal authorities, and others, and the Council views as urgent further efforts by all to take <u>effective</u> steps to address global climate change.***

To be effective, efforts directed at global climate change must reduce total global GHG emissions. It is not sufficient to reduce GHG emissions in one location if those emissions are simply moved elsewhere to another part of the world, an effect called "leakage." Avoiding leakage, or at least minimizing its risk, is key to ensuring the climate protection effectiveness of adopted policies and measures.

The Council is concerned about the potential for such GHG leakage with refineries. In permitting, refineries, like other stationary sources, are required to install emission controls sufficient to ensure that operations meet clean air toxics and criteria pollutant health standards, even if the refinery were to be operated at its theoretical maximum emission rate. The effect of a GHG cap, especially if set at actual throughput levels that are below permitted maximums, may be to prevent a refinery from processing the volume of crude it would otherwise have processed within its permit. If so, the Council is concerned that leakage will be triggered. Because the petroleum industry is globally integrated, the Council considers it likely that such excess crude over the cap (and the GHGs associated with that production) will be displaced from the Bay Area and relocated to refineries elsewhere, out from underneath the caps and negating their intended climate benefit.

The ready mobility of global refinery production and gasoline shipment re-equilibration, and thus the strong potential for GHG leakage, is illustrated by a recent example in Southern California. In February 2015, an explosion and fire at a large refinery in Torrance shut down the refinery for more than a year. Almost immediately, the loss of gasoline production was made up by large outside shipments.

According to the U.S. Energy Information Administration (October 13, 2015), "Over a five-month period following an explosion at a California oil refinery in February 2015, imports of gasoline into California increased to more than 10 times their typical level, drawing from sources that include India, the United Kingdom, and Russia."

The Council is concerned that merely shifting Bay Area refinery GHG emissions to other locations outside the Bay Area will not truly reduce total global GHG emissions, and as a result, will not provide the climate protection expected and needed. In fact, should such a shift result in additional transport of displaced refinery products, as happened in the Torrance example, the carbon footprint of those products would actually increase.

Concern for leakage is not an excuse for inaction, however. There is much that can and must be done in the Bay Area and elsewhere to reduce total global GHG emissions, including those from petroleum-based sources, and there exist important opportunities for the Air District to provide leadership. The question is not <u>whether</u> to reduce global GHG emissions, but <u>how</u> to do it in a manner that will be effective in mitigating global climate change.

For example, emissions of high global warming potential (GWP) pollutants such as methane are not covered under cap-and-trade when emitted as fugitives, meaning emissions that are unintentional and

do not pass through a stack, or other equivalent opening. However, the GWP of methane is up to 25 times greater than that of carbon dioxide. The Air District can play a significant role in addressing fugitive emissions of methane in the Bay Area, whether by accidental discharges or from routine fugitive emissions at facilities.

More generally, the Air District should coordinate with CARB on its Short Lived Climate Pollutant (SLCP) strategy. The strategy addresses emissions of other high-GWP pollutants such as soot (black carbon), fluorinated gases and hydrofluorocarbons. In addition, at the federal level, there is already a Prevention of Significant Deterioration requirement for GHG.

Points of opportunity for Air District refinery focus include:

- Enhanced monitoring of high-GWP emissions such as methane
- Enhanced regulation of fugitive emissions of high-GWP emissions such as methane
- Enhanced energy efficiency reviews
- Increased focus on energy efficiency in the definition of GHG best practices and best available control technology

The Air District can also influence Bay Area GHG emissions in other ways:

> ***The Council strongly encourages Air District efforts to identify, systematically evaluate and prioritize, and adopt Bay Area GHG reduction policies and measures, including ones directed at refineries as appropriate, that are effective in reducing total global GHG emissions, minimizing leakage risk, and complementing and reinforcing GHG reduction measures adopted by CARB (e.g., GHG cap-and-trade and methane reduction programs), USEPA, and others.***

To maximize climate protection afforded by policies directed at petroleum-based GHGs, it is important to target both stationary and mobile sources. For example, in the Bay Area, as elsewhere in California, petroleum-fuelled mobile sources collectively are the largest emitters of GHGs. Approximately 80% of the GHGs emitted over the life-cycle of a barrel of petroleum used to produce gasoline are produced when that gasoline is burned as fuel in motor vehicles, that is, from "tank-to-wheels." By comparison, refining accounts for about 12% of those petroleum life-cycle GHGs.

Relevant refinery GHG emissions information includes the following:

- Refineries emit approximately 16% of Bay Area GHG emissions, compared to transportation sources, which emit about 38%, two-thirds of which is from passenger cars/trucks.
- Refineries are five of the six largest emitters of GHGs among Bay Area stationary sources.
- Refining accounts for approximately 12% of the well-to-wheels GHG emissions from internal combustion engine transportation.
- Burning of fuel in vehicle engines (tank-to-wheels) accounts for approximately 80% of the well-to-wheels GHG emissions for internal combustion engine transportation.
- Refinery GHG emissions are primarily from process heaters and boilers, and from fluid catalytic cracking units, which together emit more than 90% of refinery GHGs. Global emissions of petroleum-based GHGs can be reduced most directly by reducing demand for petroleum-based fuels. Past experience suggests that gasoline demand is inelastic, that is, it is relatively insensitive to gasoline price over a broad range. This implies that GHG-reduction policies that reduce gasoline demand may be more effective in reducing gasoline usage (and resulting GHG emissions) than policies that rely on increased price.

Petroleum fuel demand can be reduced by lowering vehicle miles travelled (VMT) through a variety of local Bay Area policies, including, for example, ones that encourage more efficient and transportation-integrated land use (e.g., Plan Bay Area, Smart Growth) and increased availability and use of public transit (e.g., increased transit funding, bike and car share programs, expanded public education). Many of these policies are already key elements in plans to reduce toxics and criteria pollutant air pollution, and will be compatible with efforts to reduce GHG emissions.

In addition to petroleum fuel demand reduction, complementary measures are being adopted that reduce per-vehicle-mile GHG emissions. Such measures include a requirement for lower carbon fuel intensity (e.g., Low Carbon Fuel Standard), more stringent mileage standards for petroleum-fuelled vehicles, and replacement of petroleum-fuelled vehicles with cleaner, non-petroleum-fuelled alternatives (e.g., electric vehicles, ideally powered by renewable-generated electricity). Current paths to reduce carbon emissions in the Bay Area will not attain the stated 2050 goals without significant additional policies aimed at decarbonizing power sources. Therefore, the Air District should support policy efforts at the state and federal level to encourage development and deployment of carbon capture and sequestration (CCS), especially of natural gas power plants.

Certain individual sources of GHGs and/or other pollutants are known to release atypically large emissions, disproportionately larger than other similar sources and materially higher than estimated using standard bottom-up GHG emission estimation methods. The Air District should consider a find-and-fix program to identify and repair GHG "super-emitters," if and where present, reducing non-inventory "hidden" (but real) GHG emissions from such sources.

ATTACHMENT A
Advisory Council Members

Pursuant to California Health and Safety Code § 40260-40268, the Advisory Council consists of seven members "skilled and experienced in the fields of air pollution, climate change, or the health impacts of air pollution," and the Air District Board Chair (or their representative) as an ex-officio member. Council members are appointed by the Air District Board and are "selected to include a diversity of perspectives, expertise, and backgrounds." Members of the Advisory Council include:

Member	Background	Air Pollution	Health	Climate
Stan Hayes	Member, Advisory Council (1995-2007, 2009-) and former chair; emeritus Principal, Ramboll Environ; air-related research consulting	X	X	X
Severin Borenstein	Professor of Business Administration and Public Policy, Haas School of Business, University of California, Berkeley			X
Tam Doduc	Member and former chair, State Water Resources Control Board; served as Deputy Secretary, Cal/EPA, directed environmental justice	X	X	
Robert Harley	Professor and Department Chair, Civil and Environmental Engineering, University of California, Berkeley	X		X
Michael Kleinman	Professor, Environmental Toxicology, Co-Director, Air Pollution Health Effects Laboratory, Adjunct Professor, College of Medicine, University of California, Irvine	X	X	
Tim Lipman	Co-Director, Transportation Sustainability Research Center, energy and environmental technology, economics, and policy researcher and lecturer; University of California, Berkeley	X		X
Jane CS Long	Chair, California's Energy Future Committee, California Council on Science and Technology			X

ATTACHMENT B
Process and Speakers

DELIBERATIVE PROCESS

Presentations to the Council were made by more than a dozen speakers from the Air District, CARB, the California Energy Commission (CEC), and various interested stakeholders. A full list of speakers is provided below.

Speakers included Richard Corey, Executive Officer, CARB; Jack P. Broadbent, Executive Officer/APCO and other senior management and staff of the Air District; and senior representatives of Communities for a Better Environment, 350 Bay Area (by letter), the California Council for Environmental and Economic Balance, and the Western States Petroleum Association.

Council deliberation was conducted in five full-day meetings on December 3, 2015, and February 3, April 25, July 19, and October 3, 2016.

SPEAKERS

- Bay Area Air Quality Management District
  - Jack P. Broadbent, Executive Officer/APCO
  - Brian Bunger, General Counsel
  - Jeff McKay, Deputy APCO
  - Jim Karas, Director of Engineering
  - Henry Hilken, Director of Planning and Climate Protection

- California Air Resources Board
  - Richard Corey, Executive Officer
  - Sam Wade, Chief, Transportation and Fuels Branch
  - Jason Gray, Manager, Climate Change Market Monitoring Section

- California Energy Commission
  - Gordon Schremp, Senior Fuels Specialist

- Stakeholders
  - Communities for a Better Environment (CBE) – Greg Karras
  - 350 Bay Area – Letter
  - California Council for Environmental and Economic Balance (CCEEB) and Western States Petroleum Association (WSPA) – Bill Quinn and Berman Olbaldia; Gary Rubenstein, Sierra Research on behalf of CCEEB and WSPA

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Stan Hayes and Members of the Advisory Council

From: Jack P. Broadbent
Executive Officer/APCO

Date: February 2, 2017

Re: Presentation on Regulation 13, Rule 1: Refinery Carbon Intensity Cap

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

District staff will update the Advisory Council on Regulation 13, Rule 1 (Rule 13-1). This Rule is relevant to the topic of GHG reductions from refineries. It incorporates elements consistent with the Advisory Council's draft opinion on GHG refinery reductions by including coordination with the State, and by avoiding conflict with cap and trade.

Rule 13-1 would be the first step in the Air District's strategy to reduce combustion emissions across the region. Combustion of fossil fuels results in emissions of GHG, NO_X, SO_2 and PM. Rule 13-1 would cap GHG emissions from Bay Area refineries at a level consistent with their current, full-capacity operation. It would also require Bay Area refineries to implement cost-effective efficiency projects. The rule would not interfere with Cap-and-Trade or the gasoline market because it would cap GHG emissions at a level consistent with current maximum production capacity and it would allow for refineries to increase production as long as the carbon intensity of the refinery (CO_2e emitted per barrel of crude oil processed) does not increase. Rule 13-1 would prevent refineries from switching over to heavier, more sulfurous crude oil, such as Canadian tar sands crude, because doing so would significantly increase a refinery's carbon intensity.

DISCUSSION

Rule 13-1 would reduce emissions of GHG by requiring that efficiency projects be implemented, where feasible, and prevent GHG emissions from significantly increasing in the future by requiring that carbon intensity baselines not be exceeded. A concept paper for Rule 13-1 is attached.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Jeff McKay
Reviewed by: Jean Roggenkamp

Attachment 6A: Concept Paper – Regulation 13, Rule 1: Refinery Carbon Intensity Cap

Concept Paper - Rule 13-1: Refinery Carbon Intensity Cap

Updated: Jan. 23, 2017

Background and Purpose:
Refineries are the largest stationary sources of combustion emissions in the Air District. When fossil fuels are burned, they generate greenhouse gases (GHG) and criteria pollutants such as particulate matter (PM), nitrogen dioxide (NO_X), and sulfur dioxide (SO_2). Combustion emissions from refineries will need to be addressed in order attain and maintain ambient air quality standards and to meet Air District and statewide goals for reducing GHG emissions.

Regulation 13, Rule 1 would serve as the initial step in an effort to limit and reduce combustion emissions in the Bay Area. The goals of the rule are as follows:

1. Require refineries is to implement cost-effective energy efficiency measures to reduce combustion emissions.

2. Ensure refinery combustion emissions do not increase on a per-barrel basis, using GHG emissions as an indicator. This would prevent significant increases in combustion emissions due to process and feedstock changes such as making a wholesale switch to heavier and more sulfurous feedstocks (e.g. crude oil from Canadian tar sands).

This would be the first rule in a new Regulation 13. Future rules under Regulation 13 will address other significant sources of combustion emissions, such as cement kilns, using methods specifically designed for those sources.

Rule Concept:

1. Cap each refinery at a level consistent with full-capacity operation for current equipment configuration and recent crude slate.

2. After one year, the level of the cap would be reduced by an amount consistent with the expected benefits of cost-effective energy efficiency measures that the refineries identified in 2011 energy audits required by the Air Resources Board.

3. Refinery-specific caps would be expressed in the form of carbon dioxide equivalent per barrel of crude oil processed (CO_2e/barrel). These carbon intensity calculations must account for all emissions that are generated by the refining process including those associated with imported power or purchased hydrogen.

4. The method for calculating the caps are specified in the rule, but not the caps themselves. The carbon intensity will be published by the Air District during implementation and annually as part of a compliance report prepared by the Air District.

Please contact Greg Nudd, Rule Development Manager, gnudd@baaqmd.gov with any questions.

5. The carbon intensity caps can be adjusted upward if necessary to comply with state, federal, or BAAQMD regulatory mandates.

6. Rule would sunset should ARB adopt a rule that is at least as stringent.

7. The adoption resolution would direct staff to re-visit the rule if Bay Area refineries export more than 10% of their finished products for three years in a row. (At that point, we may want to look at an international benchmark for carbon intensity and ensure that there is a net benefit for the environment if petroleum products are manufactured locally.)

Please contact Greg Nudd, Rule Development Manager, gnudd@baaqmd.gov with any questions.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Stan Hayes and Members of the Advisory Council

From: Jack P. Broadbent
Executive Officer/APCO

Date: January 26, 2017

Re: Advisory Council Deliberation on the Draft 2017 Clean Air Plan/Regional Climate Protection Strategy

RECOMMENDED ACTION

None; receive and file.

BACKGROUND

In prior meetings of the Advisory Council, staff has discussed the Clean Air Plan. This updated document is required by the California Clean Air Act. The 2017 Clean Air Plan/Regional Climate Protection Strategy (Plan) is a roadmap for the Air District's efforts to address two key objectives:

- Assure healthful air in all Bay Area communities
- Reduce GHGs to achieve long term climate stabilization

As such, the 2017 Plan includes a long range vision of the Bay Area in 2050, and a short term control strategy to reduce criteria pollutants, toxics and GHGs to make progress towards these objectives.

DISCUSSION

The Air District asks for the Advisory Council's expertise in considering topics that are, or should be, included in this forward-looking Plan, with particular emphasis on the Executive Summary and First Chapter.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Jeff McKay and Henry Hilken
Reviewed by: Jean Roggenkamp