



South Coast Air Quality Management District

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DOCKET

11-IEP-1A

DATE JUL 20 2011

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*Office of the Executive Officer
Barry R. Wallerstein, D.Env.
909.396.2100, fax 909.396.3340*

July 20, 2011

California Energy Commission
Re: Docket ID No. 11-IEP-1A
1516 Ninth Street
Sacramento, Ca 95814-5512

Via E-mail: docket@energy.state.ca.us and hrait@energy.state.ca.us

Attention: Docket ID No. 11-IEP-1A

Re: Comments of South Coast Air Quality Management District staff regarding the July 6, 2011 Committee Workshop on the California Clean Energy Future

The South Coast Air Quality Management District (SCAQMD) is the regional air quality agency responsible for Orange, non-desert portions of Los Angeles, San Bernardino Counties, and Riverside County to the eastern edge of the Coachella Valley. This area of 10,743 square miles is home to over 16 million people - about half the population of the state of California. It is the second most populated urban area in the United States and has some of the worst air quality in the nation. Currently the South Coast Air Basin is considered a non-attainment area by the U.S. Environmental Protection Agency for particulate matter and ozone. In addition, we have several areas heavily influenced by transportation and industrial emissions which present residents with increased exposure to toxic airborne contaminants. In 2008, \$46 billion dollars were spent on fossil fuels in the South Coast basin, and the combustion of those fuels has direct and major impact on our air quality problems. For instance, fossil fuel usage in the transportation sector accounts for over ninety percent of our air toxic and NO_x emissions (NO_x is a key precursor leading to ozone and particulate matter formation). Tragically, our adverse air quality results in about 5,000 premature deaths and hundreds of thousands of illnesses, respiratory disorders, missed school and work days per year. The resulting annual regional cost due to health impacts from poor air quality in our area is approximately \$22 billion.

The South Coast AQMD staff appreciates the opportunity to provide comments and is very supportive of the state's goals to achieve a cleaner, more reliable energy future, along with corresponding infrastructure expansion to accommodate electric vehicles. Achieving current and future air quality standards will require a significant shift towards cleaner sources of energy, demand side management programs, and new transportation technologies. Increasing renewable energy production will help provide a solution to our air quality problems while decreasing GHGs, keeping dollars spent on energy local, and providing relief from increasingly volatile fossil fuel prices. The linkages between energy usage/production and air quality are components of a draft SCAQMD energy policy that staff is currently developing which is consistent with the State agencies' clean energy goals. For reference, a current draft copy of the policy is attached.

Additionally, we recently published a joint report with CARB and SCAG entitled *Powering the Future: A Vision for Clean Energy, Clear Skies, and a Growing Economy in Southern California*. This report shows how implementing clean energy sources and technologies not only helps with air quality but also supports local, innovative companies and creates jobs.

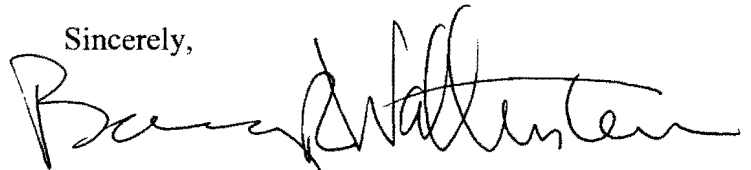
Working toward California's clean energy goals in a multiagency fashion along with establishing performance metrics is critical to ensure that goals are met. The seven proposed metrics to provide yearly measures of GHG emissions, energy efficiency, demand response, renewable energy, installed capacity, transmission expansion, and electric vehicles covers the majority of the areas needed as 2020 and 2050 GHG reduction goal deadlines approach. While achieving these goals for clean energy, there will also be co-benefits to air quality via reductions in emissions of criteria and air toxic pollutants. **In particular, we would like to propose that emission reduction metrics, such as those proposed for GHG's, be added to include reductions in criteria and air toxic pollutant emissions.** This will ensure that any benefits that help achieve clean air standards are accounted for, and may lead to decisions that focus those benefits in regions of the state that need them the most.

A targeted goal in the California Clean Energy Future is to provide infrastructure and capabilities for one million electric and plug-in hybrid vehicles by 2020. The proposed electric vehicle metric provides for data collection to monitor these vehicle sales and leases. Data collection under this metric should also monitor the amount of electricity delivered to these vehicles. Such data collection will help to understand and quantify the energy demand, delivery, and usage needs as electric vehicles become more widespread. These data can then be useful in developing electric vehicle re-charging rate structures that can be helpful within the proposed demand response metric.

Inherently, vehicle electrification provides a more efficient means of transportation with fewer criteria, toxic, and GHG emissions. Measuring electricity deliveries to these vehicles can then be used to show criteria, toxic and GHG emission benefits over traditional internal combustion vehicles. Any co-benefit reductions are crucial to helping the South Coast achieve federal criteria pollutant standards. Incentive programs for the installation of infrastructure for electric and plug in hybrid in the South Coast Air Basin would help incentivize electric vehicle purchases and help achieve regional clean air goals.

The SCAQMD staff would like to work closely with the state agencies in working towards a clean energy future as well as a clean air future. Please call me at (909) 396-3131 or Elaine Chang, Deputy Executive Officer, at (909) 396-3186 if you have any questions regarding these comments.

Sincerely,



Barry R. Wallerstein, D.Env.
Executive Officer

Draft AQMD Air Quality-Related Energy Policy

A Resolution of the Governing Board of the South Coast Air Quality Management District (AQMD) approving the AQMD Air Quality-Related Energy Policy.

WHEREAS, the Governing Board has directed staff to develop an Energy Policy to integrate criteria and toxic air contaminants, greenhouse gases, and energy issues to ensure clean air and a healthy economy;

WHEREAS, the Energy Policy will complement policies, guiding principles, and initiatives previously adopted by the Governing Board (i.e., Environmental Justice Guiding Principles and Initiatives, Climate Change Policy);

WHEREAS, the total end use energy consumption in 2008 within the Basin was 2.2 Quadrillion BTU (or 2.2 billion million BTU), with 82 percent from fossil fuels and 18 percent from electricity;

WHEREAS, of the total 2008 fossil fuel use, gasoline accounts for ~~4638~~ percent (6.7 billion gallons), natural gas accounts for ~~2624~~ percent (460,000 MMscf), diesel accounts for ~~1344~~ percent (1.7 billion gallons), and other fuels (jet fuel, residual fuel, propane) account for ~~1542~~ percent (2 billion gallons);

WHEREAS, the total electricity consumption within the Basin was 113,200 GWh (or 113,200 million kWh) in 2008, of which 30 percent was generated in Basin;

WHEREAS, the electricity generation capacity within the Basin currently online is an estimated 16,600 MW with over 85 percent from fossil fuels and less than 2 percent from renewable energy (i.e., solar, wind, biogas);

WHEREAS, the total NOx emissions contribution from all energy types in the Basin during 2008 was 860 tons per day with 54 percent from diesel, 25 percent from gasoline, 9 percent from natural gas, 9 percent from residual fuel oil, 3 percent from other fossil fuels, and 0.3 percent from electricity production;

WHEREAS, the total direct CO₂ emissions contribution from all energy types in the Basin in 2008 was 135 million metric tons per year with 40 percent from gasoline, 22.5 percent

1 from natural gas, 13 percent from in-Basin electricity generation, 11.5 percent from diesel, and
2 13 percent from other fossil fuels (jet fuel, residual fuel, propane);

3 **WHEREAS**, the toxicity weighted emissions contribution from all energy types in the
4 Basin in 2008 was 92 percent from diesel (without particulate traps and will be 88 percent once
5 diesel particulate traps are in place for trucks and ships, includes fuel oil), 6 percent from
6 gasoline, 1 percent each from electricity (burning natural gas) and jet fuel, 0.2 percent from
7 natural gas and 0.1 percent from other fossil fuels;

8 **WHEREAS**, Executive Order S-3-05 was signed in 2005 and set statewide targets for
9 reducing greenhouse gas emissions to 1990 levels by the year 2020, and to 80 percent below
10 1990 emission levels by the year 2050;

11 **WHEREAS**, California passed SBX1-2 in April 2011 that will require utilities in
12 California to increase the supply of electricity produced from renewable energy sources to 33
13 percent by the year 2020;

14 **WHEREAS**, total regional annual expenditure on fossil fuels within the Basin in 2008 is
15 \$45 billion, of which petroleum (transportation fuels) accounts for 81 percent of this expenditure;

16 **WHEREAS**, total regional costs due to poor air quality were estimated to be \$22 billion
17 per year based upon averaged air quality data from years 2005 to 2007; ~~and~~

18 **WHEREAS**, the health impacts from adverse air quality result in about 5,000 premature
19 deaths, and hundreds of thousands of cases of asthma and other lower respiratory illnesses,
20 hospitalizations, school absences, acute bronchitis, and lost workdays each year in this region;

21 **WHEREAS**, 67 percent and 75 percent NOx reductions beyond currently adopted
22 regulations (as of 2010) are needed to meet the 1997 and 2008 federal ozone standards,
23 respectively;

24 **WHEREAS**, this Policy is consistent with State agency energy policies and planning
25 documents such as CEC's Integrated Energy and Planning Report (IEPR), and California's Clean
26 Energy Future prepared jointly by the Governor's office, CARB, CalEPA, CEC, CPUC, and
27 California ISO; and

28 **WHEREAS**, it is the Governing Board's long standing policy to be fuel and technology

1 neutral, and that any form of energy will be allowed in meeting the specified emission limits or
2 performance standards adopted by the Board.

3
4 **NOW, THEREFORE, BE IT RESOLVED**, that the Governing Board directs staff to
5 proceed with the following in future ~~decision-making~~ clean air program development, in a
6 manner that promotes reliable, safe, cost effective and clean energy for all energy consumers in
7 the Basin:

8
9 **Policy 1** – Promote zero and near-zero emission technologies, through electrification and other
10 ultra clean energy strategies, ~~(including energy conservation/efficiency)~~, to meet air
11 quality, energy security, and climate change objectives;

12
13 **Intent Statement:** Energy usage in Southern California is heavily dependent
14 upon traditional fossil fuels and is the source of the majority of criteria, toxic, and
15 GHGs emissions in the Basin. In order for South Coast AQMD to achieve
16 federally mandated clean air standards for ozone, significant nitrogen oxide
17 (NOx) emission reductions will be necessary. The vast majority of NOx
18 emissions in the Basin are a direct result of energy use. The AQMD's mission
19 also includes protecting Southern California residents from exposure to air toxic
20 emissions to which diesel fuel use in the transportation goods movement sector is
21 the primary contributor. AQMD also advocates for concurrent benefits of GHG
22 strategies that reduce criteria pollutant and air toxic emissions while recognizing
23 that climate change can in itself exacerbate ozone and PM pollution. The direct
24 connections between AQMD's core objectives and broader energy issues call for
25 a clear and consistent AQMD policy that addresses these relationships in a
26 coordinated manner. This policy will ensure that AQMD actions on air quality
27 are considered in light of associated energy issues, while also providing decision-
28 makers on energy policy a clear message regarding the impacts of their actions on
air quality. Furthermore, a heavy reliance on traditional fossil fuels causes
susceptibility to increasingly volatile market prices and does not keep dollars
spent on energy localized. Promoting the use of clean energy through
electrification and other zero and near-zero technologies-, including
efficiency/conservation measures, will help this region address air quality, energy
security, and climate change in an integrated and holistic manner.

1 **Policy 2** – Promote ~~electro-technologies and~~ zero and other near-zero emission technologies in
2 both stationary and mobile applications to the extent feasible;

3 **Intent Statement:** Based on the 2007 AQMP/SIP, Southern California would
4 need another 67% to 75% of NOx reductions beyond all existing regulatory
5 actions to meet the 1997 and 2007 8-hour ozone standards by federal deadlines.
6 Therefore, it is essential that many combustion related processes need to employ
7 zero or near-zero emission technologies to meet the health-based air quality
8 standards. In many instances, these technologies will also reduce toxic exposure
9 and GHG emissions. It is expected that most of the needed technologies will be
10 for mobile sources which account for 90% of total NOx emissions. However
11 stationary sources are included in this policy, since there is a state law for a non-
12 attainment area to implement all feasible measures. To the extent technically
13 feasible and cost-effective measures are available for stationary source
14 applications, they will be considered as part of the clean air strategy. Some
15 examples of zero or near-zero technologies available for implementation over the
16 next 10 to 20 years include battery electric vehicles, electric rail, plug-in hybrid
17 vehicles, fuel cell and hydrogen powered vehicles, electric motors, and solar
18 power generation.

19 **Policy 3** – Promote diversification of electricity generation technologies to provide reliable,
20 feasible, affordable, ~~cleanest, and~~ sustainable, and zero or near-zero emission
21 electricity supply for the Basin in partnership with local power producers;

22 **Intent Statement:** AQMD recognizes that the increased utilization of zero and
23 near-zero technologies will likely lead to increased electricity demand and thus
24 the need for more electricity generation. AQMD intends to promote a broad
25 portfolio of generating technologies with an emphasis on sustainable, efficient
26 and clean production while sensitive to electricity supply and reliability issues as
27 well as its affordability by all ratepayers.

28 **Policy 4** – Promote demand side management programs to manage electricity energy demand
growth ~~and to reduce the need for additional capacity~~. Such programs include, but are
not limited to, energy conservation, energy efficiency and load-shifting measures;

Intent Statement: Demand side management programs help reduce the need for
additional generation and related infrastructure, and may help offset the increased
electricity demand addressed in Policy 3. Energy efficiency and conservation

programs in this policy include all energy types such as natural gas for stationary sources and transportation fuels. Lowering energy consumption with such programs will also lead to co-benefits in air quality and climate change. Furthermore, load-shifting measures and energy storage can help ~~to~~ better utilize existing capacity reducing the need for additional peaker plants.

Policy 5 – Promote in-Basin distributed renewable electricity generation as part of sustainable community development to reduce reliance on energy imports or central power plants, and to minimize the air quality, climate and cross-media environmental impacts of traditional power generation~~-carbon footprint and cross-media environmental impacts;~~

Intent Statement: Renewable electricity generation provides a reliable source of energy that is zero emission and can help mitigate economic effects from high fossil fuel costs. Power generation within the Basin provides greater transmission efficiency through better matching of localized demand with production and less transmission line losses. With this policy, AQMD is not setting an in-Basin renewable energy performance standard and not excluding out-of-Basin renewable generation to meet in-Basin demand. The policy simply promotes clean and efficient electrical production, preferably locally, to help address increasing electricity demand.

Policy 6 – Promote electricity storage technology to improve the supply reliability, availability, and increased generation technology choices;

Intent Statement: The development of advanced electricity storage technology can minimize the temporal variability impacts associated with renewable energy production (i.e., wind or solar). It makes renewable energy sources more reliable and more available under various load demand. ~~For example, it~~ Increased storage can also provide power on-demand under peak load conditions helping to minimize the need for new peaker plants while utilizing off peak hours and rates for storage.

Policy 7 – Require any new/repowered in-Basin fossil-fueled generation power plant to incorporate Best Available Control Technology (BACT) as required by District rules, considering energy efficiency for the application. These power plants shall also comply with any requirements adopted by the California Air Resources Board

(CARB), California Energy Commission (CEC), Public Utilities Commission (PUC), California Independent System Operator (ISO), or the governing board of a publicly-owned electric utility, as well as state law under the ~~governing~~ California Environmental Quality Act (CEQA).;

Intent Statement: The AQMD recognizes that fossil fuel electricity generation will still be needed in the Basin to complement projected increased use of renewable energy sources. In accommodating that need, this policy ensures that all fossil-fueled plants will meet the existing BACT requirements and AQMD's BACT determination will also take into consideration generating efficiency in setting the emission limits. This policy integrates criteria pollutant BACT with GHG ~~BACT~~ as required in the federal Tailoring Rule ~~Clean Air Act Climate Change~~. This policy also explicitly recognizes existing ongoing efforts at the state level to assess the electricity generation capacity needs for this region and CPUC's approval of electricity procurement contracts. Therefore, this policy is not intended for AQMD to develop a needs determination for new power plant installations or establish new BACT determination procedures.

Policy 8 – Advocate, within the existing CEQA review process, maximum cost effective mitigation in the communities affected by emission increases resulting from the siting of new or repowered ~~fossil-fueled~~ power plants;

Intent Statement: This policy is intended to address localized impacts raised by communities affected by ~~fossil~~ power generation plants. AQMD will work with project proponents in their design phase or during CEQA commenting period to maximize selection and implementation of mitigation measures, if required, within the impacted communities. This policy does not create new requirement or review process beyond the existing CEQA process.

Policy 9 – Educate and incentivize the public and businesses to shift toward the lowest emission technologies in personal choice, considering emissions of criteria pollutants, toxic air contaminants and greenhouse gases, as well as energy efficiency; and

Intent Statement: Educating the public on individual choices for different modes of transportation such as public transit, walking, ~~and~~ biking, energy efficient appliances, ~~or~~ and energy conservation technologies will provide for cleaner air, less GHG emissions, and potential individual cost-savings in many cases. Consumer participation is essential in driving the market demand for zero and near-zero emitting products. Educating businesses on zero and near zero

technologies will reduce emissions and may in some applications lower operating costs. Partnering with other agencies, utilities, and advocacy groups will help leverage ~~funding~~education and outreach efforts, while also providing the means to publicize available incentive programs.

Policy 10 – Incorporate energy efficiency and conservation as an emissions reductions strategy for stationary and mobile sources through ~~via~~ AQMD’s planning, rule making, ~~activities,~~ advocacy, and CEQA commenting ~~activities~~function.

Intent Statement: Given the aforementioned close relationship between energy and air quality, incorporating energy efficiency and conservation ~~into~~ AQMD’s emission reduction activities will recognize the benefits of efficiency and conservation ~~while~~ providing opportunities to reduce overall emissions.

BE IT FURTHER RESOLVED, that the Governing Board directs staff to proceed with the following:

Action 1 – Advocate for conduct, and/or support detailed technical studies to identify viable ~~electrification-zero and near-zero emission~~ technologies and associated ~~electric~~ energy delivery and capacity needs to support ~~electrification- these technologies~~ as part of the clean air strategy for the Basin;

Discussion: The purpose of these technical studies is to identify potential zero and near-zero technologies that can be deployed in the next 10 to 20 years to meet air quality objectives. These studies will be coordinated and solicit input from state agencies such as CEC, CARB, PUC, and Cal ISO. Intended studies will include analyses of air emissions, technical feasibility, cost-effectiveness analyses, and energy demand and supply associated with those technologies. An understanding of the energy infrastructure, delivery and capacity requirements needed to support these technologies will be critical for their successful introduction. Current examples of such technologies include battery electric and plug-in hybrid vehicles, but any other technologies in need of further analysis with similar performance would be considered as well.

Action 2 – Conduct appropriate socioeconomic studies to identify the societal costs and benefits for the implementation ~~implementing further electrification-of zero and near-zero emissions strategies,~~ including but not limited to, further electrification and ~~small~~ business impacts;

Discussion: Socioeconomic studies will identify the capital investment needed and how the funds can be raised to pay for the infrastructure and delivery systems to support the technologies identified from Action #1. The studies will also include socioeconomic impact analysis including job impacts, businesses competitiveness, small business impacts, ratepayer impacts, etc., resulting from transitioning to zero or near-zero technologies.

Action 3 – ~~Where feasible, D~~develop an AQMD action plan to develop and deploy electrification and other zero and near-zero emissions measures for various sectors;

Discussion: Based on the results of studies related to Actions 1 and 2, the action plan will outline roadmaps, timelines, and key milestones to ensure the timely commercialization and deployment of these technologies to meet air quality needs.

Action 4 – Conduct studies to identify measures to incentivize early introduction of ~~electrification-zero~~ and near-zero emission measures and identify potential new transportation funding mechanisms to support substantial penetration of such technologies ~~electrification-~~ within the transportation sector;

Discussion: The purpose of this action is to identify funding mechanisms, leveraged support, public-private partnership opportunities, and any other appropriate methods to incentivize the implementation of zero and near-zero emission technologies and their necessary infrastructure within the transportation sector, including goods movement. It also includes the identification of funding mechanisms to increase public transit services and incentivize increased public transit usage.

Action 5 – Further develop and demonstrate ~~technologies to maximize the use of low-~~ emitting biogas technologies and other clean energy sources from biomass;

Discussion: The Basin has many sources of biomass that can potentially be converted into useful energy for both transportation and stationary applications. Through various techniques, different sources of biomass can produce biomethane, biogas, electricity, alcohols, and ~~F~~Fischer-Tropsch fuels, to name a few. Many of the combustion processes that utilize these fuels do not currently achieve zero or near-zero emissions ~~currently meet all emissions standards for stationary sources~~; therefore, further technology development is needed in some applications. This effort would ensure the use of biomass will not cause unnecessary trade-offs

between GHG benefits and criteria/air toxic emissions.

Action 6 - Coordinate this Energy Policy with California state energy policy as promulgated by the California Energy Commission (CEC), California Public Utilities Commission (PUC), and the California Air Resources Board (CARB), and assure that rules and regulations adopted by the Board are not in conflict with state and federal laws. Actively participate in CEC, PUC, and CARB proceedings to promote policies and regulatory actions that further clean air objectives ~~the AQMD Energy Policy,~~ consistent with state and federal law;

Discussion: CEC and PUC are charged with the responsibility to develop statewide energy policies and regulations and CARB has the primary responsibility for implementing AB32. Their collective decisions often have impacts on local air quality programs such as, energy conservation and efficiency, renewable energy policies/standard, etc. AQMD's participation in their decision-making affecting air quality would highlight the linkage between energy and air quality and help ensure air quality needs for the Basin are adequately considered.

Action 7 - Convene a stakeholder working group (including, but not limited to, representatives from the building industry, local fire departments and building departments, and utilities) to develop and recommend ~~recommended~~ standardized specifications-requirements for installations of electricity recharging, natural gas refueling, and other zero/near-zero emission refueling equipment ~~in~~ for residential and commercial building applications to facilitate greater plug-in electric vehicle (PEV), natural gas vehicle (NGV), fuel cell vehicle, and other zero or near-zero emission vehicle market penetration;

Discussion: The transportation sector is seeing rapid development of plug in hybrids and battery electric vehicles. A standardized and streamlined recharging infrastructure will reduce the administrative burden, costs, and time needed for such installation; therefore it will help expand market penetration. The same streamlining needs exist for natural gas vehicles and natural gas fueling infrastructure. AQMD intends to facilitate such discussions among stakeholders to develop acceptable specifications and address local permitting issues in a coordinated manner.

Action 8 - Advocate ~~for a separate~~ electricity rate structures that incentivize off-peak charging for PEVs through the Statewide PEV Collaborative (~~which is~~ comprised of CEC, PUC, CARB, local air districts and utilities) while remaining ~~being~~ sensitive to potential impacts on rates for existing customers;

Discussion: Promoting off-peak charging will help decrease the need for additional peak electricity generation or adding new capacity, and reducing costs for vehicle charging will aid market penetration of these vehicles. This effort is also to ensure that the electricity rate structures do not penalize EV and PEV users for their off-peak charging.

Action 9 - Partner with local utilities and local government stakeholders to promote energy conservation and efficiency through local actions (~~i.e., building codes, zoning requirements, and incentive programs~~); ~~and~~;

Discussion: This action is intended to leverage funding and outreach efforts with local governments and utilities to promote energy conservation and energy efficiency, especially for existing housing/building stocks and public buildings.

Action 10 - Compile and track Basin--wide energy ~~use-usage~~ and energy supply profiles ~~within the Basin~~ in conjunction with each Air Quality Management Plan (AQMP) update.

Discussion: As part of AQMP revisions in the future, AQMD will update information on the primary sources of energy as well as energy demand within the region. This will provide an understanding of the trends in energy consumption and electricity generation profile for this region. The effort will also help to identify data needs and relate energy issues to air quality impacts.

BE IT FURTHER RESOLVED, that the Governing Board directs staff to annually report progress in implementing this policy to the Governing Board at a duly noticed public hearing and report progress on AQMD Air-Quality Related Energy Policy implementation to the appropriate Board committees semiannually.