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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 46 percent (6.7 billion gallons), natural gas accounts for 26 percent (460,000 MMscf), diesel accounts for 13 percent (1.7 billion gallons), and other fuels (jet fuel, residual fuel, propane) account for 15 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*;

*Based on 2007 AQMP projections. Recent California Air Resources Board rulemaking for on-road heavy duty diesel vehicles and off-road equipment showed about 140 tons per day lower NOx emissions from these source categories. The 2008 emissions inventory will be updated as part of the 2012 AQMP.

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1 **WHEREAS**, the total direct CO₂ emissions contribution from all energy types in the
2 Basin in 2008 was 135 million metric tons per year with 40 percent from gasoline, 22.5 percent
3 from natural gas, 13 percent from in-Basin electricity generation, 11.5 percent from diesel, and
4 13 percent from other fossil fuels (jet fuel, residual fuel, propane);

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

10 **WHEREAS**, Executive Order S-3-05 was signed in 2005 and set statewide targets for
11 reducing greenhouse gas emissions to 1990 levels by the year 2020, and to 80 percent below
12 1990 emission levels by the year 2050;

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

16 **WHEREAS**, total regional annual expenditure on fossil fuels within the Basin in 2008 is
17 \$45 billion, of which petroleum (transportation fuels) accounts for 81 percent of this expenditure;

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

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

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

26 **WHEREAS**, this Policy is intended to be consistent with State agency energy policies
27 and planning ~~documents such as~~ principles included in the CEC's Integrated Energy and
28

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1 Planning Report (IEPR), and California’s Clean Energy Future prepared jointly by the
2 Governor’s office, CARB, CalEPA, CEC, CPUC, and California ISO; ~~and~~

3 **WHEREAS**, it is the Governing Board’s long standing policy to be fuel and technology
4 neutral, and that any form of energy will be allowed in meeting the specified emission limits or
5 performance standards adopted by the Board.;

6 **WHEREAS**, this policy does not authorize the AQMD to deny a permit that meets all
7 applicable existing legal requirements at the time the permit is issued; and

8 **WHEREAS**, this policy does not foreclose the Governing Board from independently
9 determining whether and in what form to adopt any given control measure or rule, giving
10 appropriate consideration to all relevant factors including technological and economical
11 feasibility.

12
13 **NOW, THEREFORE, BE IT RESOLVED**, that the Governing Board directs staff to
14 proceed with the following in future clean air program development, in a manner that promotes
15 reliable, safe, cost effective and clean energy for all energy consumers in the Basin:

16
17 **Policy 1** – Promote zero and near-zero emission technologies, through electrification and other
18 ultra clean energy strategies, to meet air quality, energy security, and climate change
19 objectives;

20
21 **Intent Statement:** Energy usage in Southern California is heavily dependent
22 upon traditional fossil fuels and is the source of the majority of criteria, toxic, and
23 GHGs emissions in the Basin. In order for South Coast AQMD to achieve
24 federally mandated clean air standards for ozone, significant nitrogen oxide
25 (NOx) emission reductions will be necessary. The vast majority of NOx
26 emissions in the Basin are a direct result of energy use. The AQMD’s mission
27 ~~also~~ includes protecting Southern California residents from exposure to air toxic
28 emissions, ~~to which Diesel fuel use in the transportation goods movement sector~~
is the primary contributor to these emissions. AQMD also advocates for
concurrent benefits of GHG strategies that reduce criteria pollutant and air toxic
emissions while recognizing that climate change can in itself exacerbate ozone

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1 and PM pollution. The direct connections between AQMD’s core objectives and
2 broader energy issues call for a clear and consistent AQMD policy that addresses
3 these relationships in a coordinated manner. This policy will ensure that AQMD
4 actions on air quality are considered in light of associated energy issues, while
5 also providing decision-makers on energy policy a clear message regarding the
6 impacts of their actions on air quality. Furthermore, a heavy reliance on
7 traditional fossil fuels causes susceptibility to increasingly volatile market prices
8 and does not keep dollars spent on energy localized. Promoting the use of clean
9 energy through electrification and other zero and near-zero technologies,
10 including efficiency/conservation measures, will help this region address air
11 quality, energy security, and climate change in an integrated and holistic manner.

8 **Policy 2** – Promote zero and near-zero emission technologies in both stationary and mobile
9 applications to the extent feasible;

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

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

26 **Intent Statement:** AQMD recognizes that the increased utilization of zero and
27 near-zero technologies will likely lead to increased electricity demand and thus
28 the need for more electricity generation. AQMD intends to promote a broad

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1 portfolio of generating technologies with an emphasis on sustainable, efficient
2 and clean production while sensitive to electricity supply and reliability issues as
3 well as its affordability by all ratepayers.

4 **Policy 4** – Promote demand side management programs to manage energy demand growth. Such
5 programs include, but are not limited to, energy conservation, energy efficiency and
6 load-shifting measures;

7 **Intent Statement:** Demand side management programs help reduce the need for
8 additional generation and related infrastructure, and may help offset the increased
9 electricity demand addressed in Policy 3. Energy efficiency and conservation
10 programs in this policy include all energy types such as natural gas for stationary
11 sources and transportation fuels. Lowering energy consumption with such
12 programs will also lead to co-benefits in air quality and climate change.
13 Furthermore, load-shifting measures and energy storage can help to better utilize
14 existing capacity reducing the need for additional peaker plants.

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

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

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

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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. 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 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. 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 power plants;

Intent Statement: This policy is intended to address localized impacts raised by communities affected by 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,

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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, considering emissions of criteria pollutants, toxic air contaminants and greenhouse gases, as energy efficiency, and the potential to create local jobs; and

Intent Statement: Educating the public on individual choices for different modes of transportation such as public transit, walking, biking, energy efficient appliances, 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 and outreach efforts, while also providing the means to publicize available incentive programs. AQMD activity will include efforts to create local jobs relative to the implementation of this Policy.

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

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 zero and near-zero emission technologies and associated energy delivery and capacity needs to support these technologies as part of the clean air strategy for the Basin;

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

9 **Action 2** – Conduct appropriate socioeconomic studies to identify the societal costs and
10 benefits for the implementation of zero and near-zero emissions strategies,
11 including but not limited to, further electrification and impacts on businesses and
12 jobs-impacts;

13 **Discussion:** Socioeconomic studies will identify the capital investment needed
14 and how the funds can be raised to pay for the infrastructure and delivery systems
15 to support the technologies identify from Action #1. The studies will also include
16 socioeconomic impact analysis including job impacts, businesses
17 competitiveness, small business impacts, ratepayer impacts, etc., resulting from
18 transitioning to zero or near-zero technologies. Input will be solicited from
19 various stakeholders, including business groups, energy companies, and
20 transportation agencies.

20 **Action 3** – Where feasible, develop an AQMD action plan to develop and deploy
21 electrification and other zero and near-zero emissions measures for various
22 sectors, including identification of implementation barriers and strategies to
23 overcome such barriers;

24 **Discussion:** Based on the results of studies related to Actions 1 and 2, the action
25 plan will outline roadmaps, timelines, and key milestones to ensure the timely
26 commercialization and deployment of these technologies to meet air quality
27 needs. The action plan will also identify barriers to program implementation and
28 potential strategies to overcome such barriers.

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1 promote policies and regulatory actions that further clean air objectives,
2 consistent with state and federal law;

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

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

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

23 **Action 8** - Advocate for electricity rate structures that incentivize off-peak charging for
24 PEVs through the Statewide PEV Collaborative (comprised of CEC, PUC,
25 CARB, local air districts and utilities) while remaining sensitive to potential
26 impacts on rates for existing customers;

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

6 **Action 9** - Partner with local utilities and local government stakeholders to promote energy
7 conservation and efficiency through local actions;

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

12 **Action 10** - Compile and track Basin-wide energy usage and supply profiles in conjunction
13 with each Air Quality Management Plan (AQMP) update.

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

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