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 38 percent (6.7 billion gallons), natural gas accounts for 21 percent (460,000 MMscf), diesel accounts for 11 percent (1.7 billion gallons), and other fuels (jet fuel, residual fuel, propane) account for 12 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 CO_2 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

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

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

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

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

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

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

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

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

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

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

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

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

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

> **Intent Statement:** Energy usage in Southern California is heavily dependent upon traditional fossil fuels and is the source of the majority of criteria, toxic, and GHGs emissions in the Basin. In order for South Coast AQMD to achieve federally mandated clean air standards for ozone, significant nitrogen oxide (NOx) emission reductions will be necessary. The vast majority of NOx emissions in the Basin are a direct result of energy use. The AQMD's mission also includes protecting Southern California residents from exposure to air toxic emissions to which diesel fuel use in the transportation goods movement sector is the primary contributor. 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 and PM pollution. The direct connections between AQMD's core objectives and broader energy issues call for a clear and consistent AQMD policy that addresses these relationships in a coordinated manner. This policy will ensure that AQMD actions on air quality are considered in light of associated energy issues, while also providing decision-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, including efficiency/conservation measures, will help this region address air quality, energy security, and climate change in an integrated and holistic manner.

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

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

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

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

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 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. The policy simply promotes clean and efficient electrical production 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 can provide power on-demand under peak load conditions helping to minimize the need for new peaker plants.

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), 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 C-BACT as required in the federal 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 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 choice for different modes of transportation such as public transit, walking, and biking, energy efficient appliances, or 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. Partnering with other agencies, utilities, and advocacy groups will help leverage 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 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. 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 identify 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~~ddevelop an AQMD action plan to develop and deploy electrification ~~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.

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. Through various techniques, different sources of biomass can produce biomethane, biogas, electricity, alcohols, and fischer-tropsch fuels, to name a few. Many of the combustion processes that utilize these fuels do not 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-off 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 for electricity recharging, natural gas refueling, and other zero/near-zero emission refueling installations~~s~~ ~~in~~ for~~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 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.