

BOARD MEETING DATE: September 9, 2011

AGENDA NO. 33

PROPOSAL: Zero and Near-Zero Emission Technologies and Energy
Quarterly Report of Activities Related to Powering Future Vision

SYNOPSIS: This report describes recent AQMD actions to seek implementation of zero and near-zero emission technologies and energy sources, as needed to attain federal air quality standards.

COMMITTEE: Not Applicable

RECOMMENDED ACTION:
Receive and file.

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Executive Officer

BRW:PMG

Background

This report summarizes recent key activities of AQMD staff to seek development and deployment of zero and near-zero emission technologies and energy sources. Staff's activities in the last quarter have largely focused on freight transport, due to the substantial amount of NO_x emissions from this sector, and on renewable in-basin electricity generation. Staff's efforts have been as follows:

- **Outreach.** Educate the public, industry stakeholders and government decision-makers regarding air quality needs, potential technology solutions, as well as potential co-benefits for transportation, energy, mobility and economy that could be fostered by coordinated actions.
- **Technology Advancement.** Develop and fund technology demonstration projects, with support from public and private partners.

- **Projects.** Through advocacy and collaborative efforts, seek to incorporate zero and near-zero emission technologies into pending project approvals and other government actions.
- **Legislation and Funding.** Advocate for federal, state and other funding and policy support for zero-emission technologies and enabling infrastructure.
- **Planning.** Incorporate zero and near-zero emission technologies, and infrastructure that enables such technologies, into transportation plans and energy policies.

The following are key activities by staff to further these goals during April, May, June and July of 2011:

TECHNOLOGY ADVANCEMENT

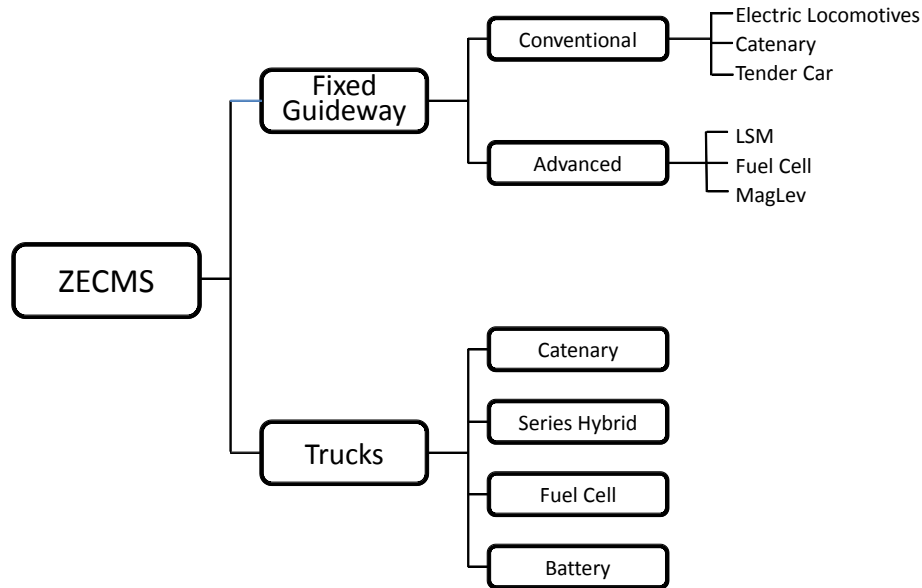
5 MW Renewable Distributed Generation with Storage. AQMD released a Request for Proposals (RFP) on May 6, 2011 to solicit projects to provide over 5 MW of in-basin renewable generation to support electric transportation, with the AQMD proposing support up to \$30M. A non-mandatory bidders' conference was held on May 25, with interested parties attending in person or on the phone. The RFP closed on July 1, 2011, with 46 proposals submitted for photovoltaics, wind, battery and fuel cell technologies. Staff has invited technical experts to assist in the review of the proposals with anticipated recommendations to the Board by October 2011.

Staff has discussed the opportunity with the DOE, Sandia National Laboratories, Lawrence Livermore National Laboratories and the CEC in the spirit of collaboration and potential cost leveraging.

Zero Emission Freight Movement. AQMD has worked with the Ports of Los Angeles and Long Beach and other agencies to collaboratively undertake demonstration projects for rail and trucks. Discussions with manufacturers, suppliers and testing facilities, as well as other potential funding agencies such as the U.S. EPA, DOE CARB and CEC, have commenced.

Rail. A proposal has been submitted by General Atomics to conduct a two-phase development and demonstration of their technology to electromagnetically pull containers along existing rail lines retrofitted with linear synchronous motor (LSM) technology. Staff has received tentative support from both Ports and is working with EPA and CEC to garner remaining needed funding. Staff has also been in discussions with locomotive manufacturers, major electric system suppliers and technology developers to establish projects for more conventional options such as electric locomotives receiving power from overhead catenary wires.

Trucks. The AQMD has already funded several class 8 electric truck projects, including Balqon and Transpower, to develop and demonstrate battery electric trucks capable of moving containers. In order to develop technologies with greater potential for widespread commercialization, staff is also pursuing projects with large truck manufacturers and major electric-drive system suppliers. Concepts being investigated include hybrids with all-electric range, trolley (catenary) trucks and LSM trucks.



As these projects develop, staff will vet the technical merits, secure cost-share, and bring these through the normal committee process prior to full Board consideration.

COLLABORATION AND ADVOCACY REGARDING PROJECTS AND PLANNING

Port Zero-Emission Container Transport. AQMD staff continued its collaborative and advocacy efforts seeking deployment of zero-emission transport at the Ports of Los Angeles and Long Beach. On July 7 the two harbor commissions held a joint workshop regarding zero-emission container transport technologies. AQMD staff testified, urging the ports to take expeditious actions to demonstrate and deploy zero-emission technologies for transport between the ports and railyards; to continue collaborative efforts to deploy zero-emission technologies regionally beginning with the I-710; and to pursue rail electrification. Port staff presented a *Roadmap for Moving Forward with Zero Emission Technologies at the Ports of Long Beach and Los Angeles*. The roadmap describes near and longer term actions to develop and demonstrate zero-emission technologies for applications currently served by trucks, rail and cargo handling

equipment. The commissioners expressed general support for the roadmap, and AQMD staff has subsequently met on numerous occasions with staffs of both ports to plan joint technology demonstration projects for on-road and rail applications. In related actions, staff made presentations regarding zero-emission transport technical and policy issues to the Long Beach City Council and the Gateway Cities Council of Governments, both of which subsequently adopted resolutions supporting inclusion of a zero-emission transport option in the EIR for the ICTF railyard project currently being evaluated by the ports.

I-710. Staff continued its active participation in development of the I-710 corridor project, which proposes to expand this key regional freight corridor between the ports and railyards near downtown Los Angeles, and to create dedicated truck lanes. With AQMD's support, the project EIR currently under development will include a zero-emission freight corridor alternative. It is anticipated that the alternative will be a corridor to be used by electric trucks, potentially with "wayside" power provided by overhead catenary wires or in-roadbed technologies. AQMD actions in the last quarter included technical meetings with LA Metro and other I-710 project partners, and participation as a member of the Technical Advisory Committee and various other advisory bodies for the project.

Regional Transportation Planning. AQMD staff has participated in numerous technical and policy meetings relating to development of the 2012 update to the Regional Transportation Plan. A key goal of staff is to include objectives of zero and near zero emission transport as part of the strategic portion of the RTP, as well as a schedule of actions to further those objectives. Staff has provided input as a member of SCAG's Goods Movement Steering Committee, through meetings between AQMD Technology Advancement staff and SCAG staff and consultants, and in stakeholder meetings. Staff also made presentations to SCAG's Energy and Environment Committee, the Southern California National Freight Gateway Collaboration, and other bodies. Finally, AQMD staff is currently working with CARB staff to develop a coordinated technology approach to regional transportation.

PUBLIC OUTREACH AND LEGISLATIVE ADVOCACY

Conferences. AQMD staff has been active in technical conferences regarding zero-emissions transport. For example, on April 20, AQMD held its *Zero Emission Transport Forum and Roundtable* which included high-level participation from U.S. EPA, CTC, CARB, CEC, SCAG and a variety of global and local technology manufacturers. Other conferences which AQMD co-sponsored and participated in during the recent months include the Alternative Clean Transportation Expo in Long Beach, with over 1,000 registrants.

“Powering The Future” Brochure, Website, Social Media. AQMD staff, in collaboration with staff from CARB and SCAG, produced the 20-page “*Powering the Future*” brochure and printed copies for distribution. Staff also created a webpage regarding *Powering the Future* on the AQMD website, which features a video on Powering the Future and enables visitors to download the brochure at http://www.aqmd.gov/pubinfo/Publications/PoweringTheFuture/powering_the_future.htm. Additionally, staff posted tailored messages in the AQMD iPhone applications, posted links to the brochure on Facebook, and has made Twitter announcements.

Presentations. AQMD staff met with and/or made presentations to the following organizations and governments regarding the “*Powering the Future*” vision:

- 5 Mountain Communities Government Affairs Committee
- All Saints’ Episcopal Church (Pasadena)
- Assembly Member Anthony Portantino
- Assembly Member Bob Blumenfield
- Assembly Member Charles Calderon
- Assembly Member Chris Norby
- Assembly Member Curt Hagman
- Assembly Member Diane Harkey
- Assembly Member Jeff Miller
- Assembly Member Jose Solorio
- Assembly Member Julia Brownley
- Assembly Member Mike Eng
- Assembly Member Mike Morrell
- Assembly Member Brian Nestande
- Assembly Member Tim Donnelly
- Assembly Member Wilmer Amina Carter
- Big Bear Chamber of Commerce Transportation and Government Affairs Committee
- California Contract Cities Association
- City of Alhambra
- City of Arcadia
- City of Azusa
- City of Baldwin Park
- City of Bell Gardens
- City of Beverly Hills
- City of Burbank
- City of Calabasas
- City of Canyon Lake
- City of Cerritos
- City of Claremont

- City of Covina
- City of Culver City
- City of Downey
- City of Duarte
- City of El Monte
- City of El Segundo
- City of Garden Grove
- City of Glendale
- City of Hermosa Beach
- City of Huntington Beach
- City of Huntington Park
- City of Irwindale
- City of Jurupa Valley
- City of La Cañada Flintridge
- City of Long Beach
- City of Lynwood
- City of Manhattan Beach
- City of Monrovia
- City of Montebello
- City of Monterey Park
- City of Pasadena
- City of Pico Rivera
- City of Pomona
- City of Rancho Mirage
- City of Redondo Beach
- City of San Bernardino
- City of San Fernando
- City of San Gabriel
- City of Santa Clarita
- City of Santa Fe Springs
- City of Santa Monica
- City of Sierra Madre
- City of South Gate
- City of Temple City
- City of Vernon
- City of Walnut
- City of Westminster - Go Green Expo
- Coachella Valley Economic Partnership
- Coachella Valley Association of Government Energy and Environmental Resources Committee
- Congressman Adam Schiff

- Congressman Ed Royce
- Congressman Howard Berman
- Congressman Ken Calvert
- Congresswoman Loretta Sanchez
- Desert Contractors Association, Government and Legislative Committee
- Energy Upgrade CA Event
- Fontana Chamber of Commerce
- Gateway Cities Council of Governments
- Healthy African American Families “Prevention, Treatment and Control of Cancer in Our Community” conference
- Independent Cities Association
- Indio Chamber of Commerce Government Affairs Committee
- Inland Empire Air Quality Committee
- Inland Empire Economic Partnership
- Inland Empire League of Cities
- La Quinta Chamber of Commerce
- Lake Arrowhead Mountain Sunrise Rotary
- Leonard Transportation Center at California State University, San Bernardino
- Long Beach Chamber of Commerce Government Affairs Committee
- Los Angeles Area Chamber of Commerce Environmental Sustainability Policy Council
- Moreno Valley Chamber of Commerce Legislative Committee
- National Electrical Contractors Association-International Brotherhood of Electrical Workers (NECA-IBEW)
- Orange County Business Council Infrastructure Committee
- Redlands Chamber of Commerce Government Affairs Committee
- San Bernardino County Associated Governments (SANBAG)
- San Bernardino Chamber of Commerce
- San Bernardino County Board of Supervisors
- San Fernando Valley Council of Governments
- Senator Bill Emmerson
- Senator Kevin De Leon
- Senator Lou Correa
- Senator Mimi Walters
- San Gabriel Economic Partnership Legislative Actions Committee
- San Gabriel Valley Council of Governments (SGVCOG)
- South Bay Cities Council of Government (SBCCOG)
- South Orange County Regional Chambers of Commerce Legislative Affairs Committee
- South Orange County Golf Cart Company
- South Pasadena Chamber of Commerce Legislative Affairs Committee

- Southern California Association of Governments (SCAG)
- Upland Chamber Governmental Affairs Committee
- Western Riverside Council of Government (WRCOG) Clean Cities Coalition
- Mobile Source Air Pollution Reduction Review Committee (MSRC) Annual Retreat
- Sandia and Lawrence Livermore Laboratories
- Transportation Research Board (TRB) Joint Summer Conference
- Chinese Jiangsu General Director of the Department of Environmental Protection
- Energy Leadership Air Quality Institute, Metropolitan Water District
- California Energy Commission (CEC) Meeting with Chair and Vice Chair
- Environmental Justice Advisory Group

In addition to those listed above, the “Powering the Future” brochure was also provided to the offices of each of the 40 Members of the State Senate, the 80 Members of the State Assembly, the 28 Members of Congress representing the South Coast Air Basin, and California’s two U.S. Senators.

Upcoming Events

- Southern California Chinese American Environmental Protection Association (*August 19*)
- Future of Mobility, BMW Roundtable (*August 29*)
- Asilomar Conference on Transportation and Energy (*August 29-31*)
- Women in Green Conference (*August 30-31*)
- Mobility 21 Summit (*September 6*)

Legislative Advocacy: State. During the last quarter, the Board adopted positions in support of the following state legislation related to the implementation of zero and near-zero emission technologies and energy sources:

- AB 638 (Skinner) Fuel Resources: State Energy Resources Conservation and Development Commission – This bill seeks to reduce the state’s petroleum dependence by reducing petroleum fuel consumption by 15% below the 2003 level by 2020, and increasing the alternative fuel consumption by 26% by 2022.
- SB 209 (Corbett) Common Interest Developments: Electric Vehicle Charging – This bill seeks to prevent common interest developments, such as homeowner and condominium owner associations, from banning the installation of electrical vehicle charging stations within their premises.

- SB 410 (Wright) Energy: Public Interest Research, Development, and Demonstration Program – This bill seeks to extend for another 10 years the authorization for the California Energy Commission’s Public Interest Energy Research (PIER) Program, which provides financial support to energy research development and demonstration projects for environmentally safe, affordable, and reliable energy services and products.
- SB 859 (Padilla) Vehicles: Records: Confidentiality – This bill provides electric utilities with limited access to state vehicle records regarding the location of electric vehicles so that they can adequately plan for increased grid demand associated with home charging of plug-in electric vehicles.

AQMD staff also met the Governor’s Office of Planning and Research in Sacramento and the Governor’s Washington, D.C. office, to discuss implementation of zero and near-zero emission technologies and renewable energy.

Legislative Advocacy: Federal. During the last quarter, the Board adopted positions in support of the following federal legislation that could support implementation of zero and near-zero emission technologies and energy sources:

- H.R. 1123 (Richardson) – The TIFIA Expansion Act of 2011 - This bill would enhance the existing federal Transportation Infrastructure Finance and Innovation Act (TIFIA) loan program by making more funding available for large infrastructure projects, such as the zero-emission projects supported by AQMD.
- H.R. 1122 (Richardson) The Freight FOCUS Act of 2011 – This bill would create a Goods Movement Trust Fund to provide grants for prioritized goods movement-related transportation and environmental projects.
- H.R. 402 (DeLauro) National Infrastructure Development Bank Act of 2011 – This bill would establish a national infrastructure bank as a wholly owned government corporation that would direct federal and private funds toward infrastructure projects of regional or national significance.

AQMD staff also held meetings in Washington, DC with federal legislators and their staff, federal agency staff, and others, on AQMD’s priority issues, including funding for zero and near-zero emission technologies, support for infrastructure, as well as policy considerations in the upcoming federal surface transportation bill. In particular, AQMD staff:

- Met with Senators Boxer and Feinstein’s staff, nine members of Congress and staff from six additional congressional offices, senior staff at the Department of Energy and the Department of Transportation.
- Met with the Transportation Research Board of the National Academies of Science (TRB), the American Association of State Highway and Transportation Officials (AASHTO), and the National Association of Clean Air Agencies (NACAA);
- Presented an Air Quality Institute briefing for congressional staff and local delegates traveling on the Orange County Business Council’s annual Washington, D.C. advocacy trip.
- Participated in the Los Angeles Area Chamber of Commerce’s “Access DC: Los Angeles on the Hill” advocacy trip to DC, and met with several members of Congress and staff.
- Presented an Air Quality Institute briefing for congressional staff and local delegates from the LA Chamber group which featured participation from three Members of Congress: Rep. Laura Richardson, Rep. Dana Rohrabacher and Rep. John Garamendi.
- Worked with Rep. Laura Richardson, to send letters to U.S. Secretary of Energy Steven Chu supporting AQMD’s proposals for a 5 MW distributed generation demonstration project and a zero-emissions heavy-duty truck demonstration project.