BOARD MEETING DATE: December 4, 2026 AGENDA NO. 20

REPORT: Technology Committee

SYNOPSIS: The Technology Committee held a hybrid meeting on Friday, November 20, 2026. The following is a summary of the meeting.

RECOMMENDED ACTION:
Receive and file.

Carlos Rodriguez,
Committee Chair
Technology Committee

AK:kr

Call to Order
Committee Chair Carlos Rodriguez called the meeting to order at 12:00 p.m.

Roll Call

Committee Members
Present: Committee Chair Carlos Rodriguez
Vice Chair Larry McCallon
Supervisor Curt Hagman
Board Member Veronica Padilla-Campos

Absent: Mayor Patricia Lock Dawson
Supervisor Janet Nguyen

For additional details of the Technology Committee Meeting, please refer to the Webcast.

ACTION ITEM:

1. **Execute Contract to Demonstrate Advanced Combustion Technology for Heavy-Duty Diesel Engines**

   Sam Cao, Planning and Rules Manager, Technology Advancement Office, presented on the partnership with CARB and Sandia National Laboratories (Sandia) to develop and demonstrate ducted fuel injection (DFI) technology to reduce NOx and PM emissions from heavy-duty diesel engines while improving engine efficiency. Previous Sandia research showed emission reductions using DFI in a heavy-duty on-road diesel engine. This action is to execute a contract with Sandia for up to $100,000 from the Clean Fuels Program Fund (31) to develop and demonstrate DFI technology for heavy-duty diesel engine applications. For additional details, please refer to the Webcast beginning at 3:45.

   Ranji George, representing himself, commented that oil companies fund this type of research rather than relying on public funding. For additional details, please refer to the Webcast beginning at 7:47.

   Committee Chair Rodriguez commented that the potential emission reductions are promising and looks forward to seeing the project results. For additional details, please refer to the Webcast beginning at 9:43.

   Moved by Hagman; seconded by McCallon; unanimously approved.

Ayes:	Hagman, McCallon, Rodriguez, Padilla-Campos
Noes:	None
Abstain:	None
Absent:	Lock Dawson, Nguyen

INFORMATIONAL ITEM:

2. **Presentation from Curtin Maritime**

   Blake Klingeman, President, Curtin Maritime presented on the progress and outlook of Curtin Maritime's transition to lower and zero-emission operations and the deployment of battery-electric harbor tugs in the Ports of Los Angeles and Long Beach. For additional details, please refer to the Webcast beginning at 10:45.

   Supervisor Hagman asked about charging infrastructure and how Curtin Maritime plans to address power availability at the ports. Mr. Klingeman explained that the company is initially developing a charging barge with on-site power generation. For additional details, please refer to the Webcast beginning at 20:20.

   Committee Chair Rodriguez asked about the number of zero-emission tugboats in operation, their costs compared to conventional tugboats, and challenges to wider adoption. Mr. Klingeman explained that their first tugboat is nearing delivery, with a

second under construction. He noted that the cost is within about 10 percent of a conventional tugboat. For additional details, please refer to the Webcast beginning at 21:40.

Board Member Padilla-Campos asked about the tugboat's operating capacity, crew requirements, and maintenance costs. Mr. Klingeman explained that the tugboat can complete about three to four jobs per charge, requires the same crew size, and is expected to have lower maintenance costs. For additional details, please refer to the Webcast beginning at 33:18.

Ranji George, member of the public, expressed support for the project and raised concerns about battery recycling. Mr. Klingeman explained that the batteries are expected to last many years and could be reused for stationary energy storage after their service on the tugboats. For additional details, please refer to the Webcast beginning at 37:33.

OTHER MATTERS:

3. **Other Business**
   No other business.

4. **Public Comment Period**
   Ranji George, member of the public, expressed his concerns for battery disposal at the end of the battery life, stating that the recycling plants are in environmental justice areas causing air quality issues. For additional details, please refer to the Webcast beginning at 41:30.

5. **Next Meeting Date**
   The next regular Technology Committee meeting is scheduled for Friday, January 22, 2027 at 12:00 p.m.

Adjournment
The meeting adjourned at 12:42 p.m.

Attachment
Attendance Record

ATTACHMENT

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
TECHNOLOGY COMMITTEE MEETING
Attendance Record – November 20, 2026

Committee Chair Carlos Rodriguez	South Coast AQMD Board Member
Supervisor Curt Hagman	South Coast AQMD Board Member
Councilmember Larry McCallon	South Coast AQMD Board Member
Board Member Veronica Padilla-Campos	South Coast AQMD Board Member
Board Member Cedric Rutland	South Coast AQMD Board Member
Erin Sheehy	Board Consultant (Rodriguez)
Melodee Black	Public Member
Nathan C	Public Member
Dori Chandler	Public Member
Shehla Chowdhury	NRDC
Curtis Coleman	Public Member
KC Corliss	Public Member
Ranji George	Public Member
Moses Huerta	Public Member
Sean Kearns	Public Member
Bill LaMarr	Public Member
Sai Lee	OC Sanitation
Rita Loof	Public Member
Alejandro Marquez	Public Member
Holly J. Mitchell	Public Member
Brijesh Nigam	Public Member
Marven Norman	CCAEJ
Ricardo Pulido	Public Member
Gabriel Roman	CCAir
Ramine Ross	WSPA
Craig Sakamoto	PBF Energy
Alexander Silverman	Public Member
Tara Tisopulos	Orange County
Peter Whittingham	Public Member
Jivar Afshar	South Coast AQMD Staff
Maria Allen	South Coast AQMD Staff
Jason Aspell	South Coast AQMD Staff
Cindy Bustillos	South Coast AQMD Staff
Sam Cao	South Coast AQMD Staff
Jack Cheng	South Coast AQMD Staff
Roula El Hajal	South Coast AQMD Staff
Carlos Gonzalez	South Coast AQMD Staff

Alex Han ..... South Coast AQMD Staff
Sheri Hanizavareh ..... South Coast AQMD Staff
Aaron Katzenstein ..... South Coast AQMD Staff
Brandee Keith ..... South Coast AQMD Staff
Angela Kim ..... South Coast AQMD Staff
Sinae Kim ..... South Coast AQMD Staff
Wayne Nastri ..... South Coast AQMD Staff
Howard Lee ..... South Coast AQMD Staff
Jenny Loh ..... South Coast AQMD Staff
Terrence Mann ..... South Coast AQMD Staff
Ian MacMillan ..... South Coast AQMD Staff
Ghislain Muberwa ..... South Coast AQMD Staff
Wayne Nastri ..... South Coast AQMD Staff
Kevin Orellana ..... South Coast AQMD Staff
Payam Pakbin ..... South Coast AQMD Staff
Vasileios Papapostolou ..... South Coast AQMD Staff
Olga Pikelnaya ..... South Coast AQMD Staff
Gail Quan ..... South Coast AQMD Staff
Cynthia Ravenstein ..... South Coast AQMD Staff
Sarah Rees ..... South Coast AQMD Staff
Kristin Remy ..... South Coast AQMD Staff
Lisa Tanaka ..... South Coast AQMD Staff
Mei Wang ..... South Coast AQMD Staff