South Coast
Air Quality Management District
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SCIENTIFIC, TECHNICAL & MODELING PEER REVIEW GROUP MEETING MINUTES

Wednesday, January 27, 2021
2:00 pm

1. Welcome and Introduction

Zorik Pirveysian, Manager of Planning and Rules, welcomed attendees and introduced the topics of the meeting. The meeting was conducted virtually via zoom.

2. Air Quality Trends in the Basin and Design Values

Dr. Sang-Mi Lee, Program Supervisor, presented a summary of the ozone trends in the basin and the changes in design value since the 2016 Air Quality Management Plan.

Ralph Morris, from RAMBOLL, asked about wildfires as exceptional events and whether they are considered in the calculation of design values (DV). Sang-Mi Lee responded that wildfires generally do not contribute to setting O3 DV. But they are important for PM and these events are excluded.

3. Estimating Biogenic Emissions in the South Coast Air Basin

Dr. Eric Praske presented a summary of the work conducted to improve biogenic emissions used in modeling simulations employed in ozone attainment demonstrations.

Dr. Gabriele Pfister asked how the biogenic inventory is evaluated against measurements. Sang-Mi Lee responded that PAMS can be used, but these are limited. Only a few stations are available, and they are temporally limited. South Coast AQMD has a contract with UC Berkeley that will seek to use airborne flux measurements to evaluate the inventory.

Ralph Morris asked about the soil NOx processor and noted the substantial increases with respect to earlier versions of biogenic emissions models. Eric Praske responded that biogenic NOx emissions increased by about a factor of 5 and that sensitivity simulations were conducted in CMAQ and O3 DV increased by 3-4 ppb.

4. Ozone Sensitivity to Meteorological Factors and Emission Changes – a case study with the COVID-19 Shelter-in-Place period

Dr. Sang-Mi Lee presented a summary of the work conducted by South Coast AQMD staff to evaluate the effects of COVID on emissions and air quality, and sensitivity studies that analyzed the potential factors that led to changes in ozone concentrations in spring of 2020.

Ralph Morris noted that an isopleth plot seemed to indicate that NOx decreased by 20% in the COVID simulation, but VOC increased slightly. Sang-Mi Lee replied that that may be a small mistake in the slide. Sang-Mi Lee also stressed that most of the ozone change was driven by meteorology.

Ralph Morris noted that 2019 to 2020 comparisons are not equivalent due to significant differences in meteorology. Sang-Mi Lee responded that this was intentional just to isolate meteorology effect. Analysis of 2018 was also included as the meteorological conditions were in between 2019 and 2020.

Gabrielle Pfister noted that the diurnal cycle of emissions may have changed due to COVID and affected weekday/weekend profiles and asked if that was considered in the simulations. Sang-Mi Lee replied that simulations used standard weekday/weekend profiles. Light and heavy duty exhibit distinctive patterns. PeMS data was utilized to temporally and spatially allocate traffic changes. COVID simulations could be enhanced by retrieving 2020 PeMS data to account for the perturbation of diurnal cycles due to COVID.

Dr. Pablo Saide, from UCLA, noted that the large reductions of precursor emissions due to COVID did not decrease O3 concentrations significantly and asked what this could this portend for the future. Sang-Mi Lee noted that based on isopleth analysis, sharp NOx reduction is the shortest path to attainment. We still experience NOx disbenefit as demonstrated in the COVID period, but based on simulations, further reductions in NOx are needed to get to other side of the hump in the isopleths and start seeing the benefits of NOX reductions on ozone.

Peter Okurowski (consultant for railroads) noted that 2020 O3 DV is much higher than would be suggested by O3 isopleth plots. Sang-Mi Lee responded that model prediction is never 100% accurate and has biases as the result of uncertainties. The isopleths are based on the 2016 AQMP DV for 2012, so the projected DV for 2020 are lower than what observations show. Once the modeling set-up for the 2022 AQMP has undergone full range of updates for the simulation period, new isopleths plots will be generated that should be consistent with 2018 design values.

Tim Pohle (A4A) inquired regarding the NOx dominant strategy which requires 2/3 reduction in NOx. He believes that reducing VOC emissions by same percentage will yield similar O3 levels. He asked if a cost benefit analysis has been performed to determine whether a NOx-based control should be favored over a VOC-based control. He pointed out that even a major economic collapse that reduced NOX emissions substantially barley moved the needle towards O3 attainment. Sang-Mi Lee noted that isopleth changes depending on location. For some stations, VOC reductions alone will not yield attainment. Standard must be attained at all stations in the Basin and the only way to attain ozone in all stations is with a NOx-based strategy.

Tim Pohle wondered if formal publication on the methodology and data would be made available. Sang-Mi Lee said that staff would explore which write up format would make most sense. She also noted that many other groups are exploring COVID impact and there are already publications on the matter. Zorik Pirveysian added that previous AQMP included isopleths for all stations and that NOx control path is the only one that would work for the entire Basin.

5. Net Emissions Analysis Tool (NEAT)

Dr. Marc Carreras Sospedra presented a summary of the Net Emissions Analysis Tool (NEAT) and discussed the status of the tool with respect to testing and stakeholders' feedback.

Lakshmi Jayaram (Ramboll) encouraged staff to review input data to represent current conditions. In particular, she noted that appliance purchase and installation costs can have significant impact on cost benefit analysis. Also, requested to present the inputs to the working groups before AQMP advisory group. Sang-Mi Lee said staff is sharing relevant data with Ramboll. NEAT development began 4 years ago. Input data was discussed through open public process. Noted that input data may require revision as significant differences arise. She clarified that NEAT uses would always be discussed at STMPR before full AQMP advisory group. Zorik Pirveysian noted extensive process that was required to develop NEAT and that process of updating and using the inputs in NEAT will continue to be transparent.

6. Conclusion

No additional public comments were made. Sang-Mi Lee announced that the date for the next STMPR meeting is not set, but the meeting will focus on emissions inventory.

Meeting was adjourned at 4 pm.

Members Present (8)
Gabriele Pfister, National Center for Atmospheric Research
Greg Osterman, Jet Propulsion Laboratory/NASA
Jeremy Avise, California Air Resources Board (CARB)
John Cho, Southern California Association of Governments (SCAG)
Pablo Saide Peralta, University of California, Los Angeles
Ralph Morris, ENVIRON International Corporation

Public Attendees and Interested Parties (30)
Akshay Ashokm, Ramboll
Benjamin Leers
Bill LaMarr
Carol Bohnenkamp, Environmental Protection Agency (EPA)
Chenxia Cai, California Air Resource Board (CARB)
Dan McGivney, Southern California Gas (SoCalGas)
David Rothbart, Southern California Alliance of Publicly Owned Treatment Works (SCAP)
Don Collins, University of California, Riverside
Erin Berger, Southern California Gas (SoCalGas)
Frances Keeler, California Council for Environmental and Economic Balance (CCEEB)
Haley Grassi, Ramboll
Horacio Werner
Ji Luo, University of California, Riverside
Jin Lu, California Air Resource Board (CARB)
John Ungvarsky, Environmental Protection Agency (EPA)

Julia Lester, Ramboll
Lakshmi Jayaram, Ramboll
Leonardo Ramirez, California Air Resource Board (CARB)
Mark Abramowitz, Community Environmental Services, Inc. (CES)
Matt Darr, Waste Management.
Mike Tunnell, Trucking
Patty Senecal, Western State Petroleum Association (WSPA)
Peter Okurowski, Association of American Railroads (AAR)
Priscilla Hamilton, Southern California Gas (SoCalGas)
Ramine Cromartie, Western States Petroleum Association (WSPA)
Scott King, California Air Resource Board (CARB)
Scott Weaver, Ramboll
Teja Ganapa, Los Angeles Department of Water and Power (LADWP)/University of Southern California
Thomas Jelenić, Pacific Merchant Shipping Association (PMSA)
Tim French, Chicago Law Partners, LLC
Tim Pohle, Airlines for America
William Porter, University of California, Riverside (UCR)

South Coast AQMD Staff Present (14)
Anthony Tang, Information Technology Supervisor
Cui Ge, Air Quality Specialist
Eric Praske, Air Quality Specialist
Jong Hoon Lee, Air Quality Specialist
Kalam Cheung, Program Supervisor
Marc Carreras Sospedra, Air Quality Specialist
Paul Wright, Sr. Information Technology Specialist
Rosalee Mason, Secretary
Rui Zhang, Air Quality Specialist
Ryan Finseth, Air Quality Specialist
Sang-Mi Lee, Program Supervisor
Scott Epstein, Program Supervisor
Xinqiu Zhang, Senior Staff Specialist
Zorik Pirveysian, Planning and Rules Manager