The New Politics of Clean Air

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Overview

• Progress report on air quality and transportation’s role
• The need to reduce GHG emissions from the transportation sector
• The new political reality and its impact on clean air efforts
• What can be done?
Los Angeles in the 1960s
Air Quality Progress - Summary

- Air quality has improved significantly on all fronts
- Common air pollutants have also been reduced significantly
- This has occurred despite population, economic and VMT growth
- The health and welfare benefits far outweigh the costs
- Still over 120 million people nationwide live in areas above the NAAQS
National Air Quality Trends
Air Quality Improvements are Dramatic

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Carbon Monoxide</td>
<td>-84</td>
<td>-77</td>
<td>-60</td>
</tr>
<tr>
<td>Lead</td>
<td>-99</td>
<td>-99</td>
<td>-91</td>
</tr>
<tr>
<td>Nitrogen Dioxide (annual)</td>
<td>-60</td>
<td>-54</td>
<td>-45</td>
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<tr>
<td>Nitrogen Dioxide (1-hour)</td>
<td>-59</td>
<td>-47</td>
<td>-31</td>
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<tr>
<td>Ozone (8-hour)</td>
<td>-32</td>
<td>-22</td>
<td>-17</td>
</tr>
<tr>
<td>PM$_{10}$ (24-hour)</td>
<td>---</td>
<td>-39</td>
<td>-36</td>
</tr>
<tr>
<td>PM$_{2.5}$ (annual)</td>
<td>---</td>
<td>---</td>
<td>-37</td>
</tr>
<tr>
<td>PM$_{2.5}$ (24-hour)</td>
<td>---</td>
<td>---</td>
<td>-37</td>
</tr>
<tr>
<td>Sulfur Dioxide (1-hour)</td>
<td>-84</td>
<td>-81</td>
<td>-69</td>
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From EPA’s Air Trends report for 2015
Cars are getting cleaner, but people are driving more.

From EPA
Congress Requires OMB to Independently Assess the Benefits and Costs of Regulations

- The 2016 report concludes that EPA rules:
  - Provide $157 billion to $778 billion annual benefits
  - Cost $36 to $44 billion
  - Account for 61 to 81 percent of all benefits from regulations
  - Air quality related rules account for more than 98 to 99% of the benefits of EPA rules
- Cost to benefit ratio of up to 18 to 1.
Many People Still Living in Areas with Unhealthy Air
Sources of Emissions by Category

![Bar chart showing emissions by source category with percentages for various sources such as CO, NH3, NOx, Direct PM2.5, Direct PM10, SO2, and VOC. The categories are broken down into contributions from stationary fuel combustion, industrial and other processes, highway vehicles, and non-road mobile sources.]
U.S. Mobile Source Emission Trends

**PM$_{2.5}$**

<table>
<thead>
<tr>
<th>Year</th>
<th>Onroad</th>
<th>Offroad, Rail, Marine, Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>1995</td>
<td>56%</td>
<td>44%</td>
</tr>
<tr>
<td>2010</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>2025</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>2040</td>
<td>57%</td>
<td>43%</td>
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**NOx**

<table>
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<th>Year</th>
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</thead>
<tbody>
<tr>
<td>1980</td>
<td>23%</td>
<td>77%</td>
</tr>
<tr>
<td>1995</td>
<td>32%</td>
<td>68%</td>
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<tr>
<td>2010</td>
<td>37%</td>
<td>63%</td>
</tr>
<tr>
<td>2025</td>
<td>48%</td>
<td>52%</td>
</tr>
<tr>
<td>2040</td>
<td>61%</td>
<td>39%</td>
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**VOC**

<table>
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<th>Onroad</th>
<th>Offroad, Rail, Marine, Air</th>
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</thead>
<tbody>
<tr>
<td>1980</td>
<td>14%</td>
<td>86%</td>
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<tr>
<td>1995</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>2010</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>2025</td>
<td>57%</td>
<td>43%</td>
</tr>
<tr>
<td>2040</td>
<td>67%</td>
<td>33%</td>
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</table>
Opportunities for Further Mobile Source Criteria Pollutant Reductions

- While mobile source criteria emission inventories have been reduced and AQ has improved dramatically, many people still live in areas with unhealthy air.
- Off-road sources relative contribution grows over time; dominates inventories in the 2025-2040 timeframe.
- Non-road diesel and large marine categories are logical areas to focus.
- On-road sources, especially diesel trucks, will need more NOx reductions.
The State of Climate Science

- Warming of the climate system is unequivocal and unprecedented (IPCC)
- 97% or more of actively publishing climate scientists agree that warming trends are due to human activities (NASA)
- The evidence for rapid climate change is overwhelming
- Governor Jerry Brown called climate change an “existential threat to humanity”
Comparison of atmospheric samples contained in ice cores and more recent direct measurements

(Credit: Vostok ice core data/J.R. Petit et al.; NOAA Mauna Loa CO$_2$ record.)
Climate Challenges and Goals

• The Fifth Assessment Report of the IPCC concludes:
  ▪ Global-wide GHG emission reductions of 40 to 70% by 2050 and near zero emissions by 2100 are necessary to limit surface warming to 2 degrees C
  ▪ Risks of climate change are still considerable at 1 or 2 degrees above pre-industrial levels
  ▪ Effective climate change mitigation requires international cooperation

• California and other governments have adopted an economy-wide goal of 80% reduction by 2050

• Transportation sector contribute 27% of U.S. GHG emissions
GHG/FE Standards for Light-Duty Vehicles

• EPA and NHTSA finalized joint rules in April 2010 and in August 2012 - created ”one national program” that aligned the Federal program with California requirements

• By 2025, average fleet-wide CO2 emission levels projected to be 163 g/mile which is equivalent to 54.5 mpg

• Average price increase for 2025 vehicle projected to be about $1800; the net lifetime savings due to better fuel efficiency estimated at $5000 per vehicle

• Combined program reduces CO2 emissions by 6 billion metric tons and reduce our oil dependence by 2 million barrels per day in 2025
Key Success Factors for the GHG Regulations

- California leadership
- Presidential priority
- Bi-partisan and public support
- Industry engagement and support
Existing Light-Duty GHG Standards are Insufficient

From EPA
Current Political Realities

• EPA’s budget is under assault
• Trump issuing Executive Orders in an attempt to rollback existing environmental protections
• Trump announces the US is withdrawing from the Paris Climate Agreement
• President Trump quotes on climate change:
  • “The concept of global warming was created by and for the Chinese in order to make U.S. manufacturing non-competitive.” (November 6, 2012, tweet)
  • “I believe in clean air. Immaculate air...But I don’t believe in climate change.” (2015 interview)
  • “It’s a hoax, a lot of it.” (2015 rally)
Status of MTE of MY 2022-2025 Standards

• In January 2017, EPA made a Final Determination that the MY 2022-2025 standards remain appropriate
• California also completed their own MTE and determined, on March 24, 2017, that the MY 2022-2025 standards remain appropriate
• On March 13, 2017, EPA announced its intention to reconsider the Final Determination
• Widely reported that standards could get delayed or relaxed
Implications

• The effort to rollback environmental protections is unprecedented
• EPA is being dismantled through the budget process
• We should assume that there will be no new efforts to clean the air or address climate threats at the federal level
• California’s continued leadership is essential, but ability to set its own standards could be threatened
What Can Be Done?

• Hold the administration accountable for its actions
• Hold the regulated industry accountable
• Attempt positive engagement with the industry
• Prepare for litigation in case it is necessary
• California must continue its time-tested leadership!