Driving California’s Emissions to Zero

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Acknowledgements

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Study Goals:

• Identify strategies to significantly reduce transportation-related fossil fuel demand and emissions… including actions that can be taken now,”

• First report to comprehensively evaluate a path to a carbon-neutral transportation system by 2045 while centering equity, health, and workforce impacts.

Study prepared for Cal EPA, and led by four ITS Campuses:

• UC Davis, UC Berkeley, UC Irvine, and UCLA.

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https://escholarship.org/uc/item/3np3p2t0
Study Priorities and Structure

Guiding Principles
• Equity and Justice
• Health
• Environment
• Resilience and Adaptation
• High Quality Jobs
• Affordability and Access
• Minimize Impacts Beyond Our Borders

Study Structure
• Baseline and scenarios (incorporating findings from the next four topics)
• Light Duty Vehicles
• Heavy Duty Vehicles
• Vehicle Miles Travelled
• Fuels
• Equity and EJ
• Health
• Labor and Jobs
Low Carbon Scenario (LC1)  
(to achieve net zero emissions from transportation in 2045)

- Actions/strategies: VMT reduction, zero emission cars and trucks, and low-carbon fuels. Assumes transition to 100% clean electricity. Notes: on left, gasoline and diesel include blended biofuels. On right, biomass-based gasoline (BBG) and biomass-based diesel (BBD) are broken out.

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Aggressive low-carbon policies result in carbon reductions and cost savings

LC1 (low carbon) scenario achieves 2045 carbon neutrality, but requires aggressive policy

Driver California’s Emissions to Zero
## Side case comparison

In addition to LC1, we considered a “High ZEV”, “High Fuel Cell”, and “High Liquid Fuels” case

<table>
<thead>
<tr>
<th>Scenario</th>
<th>LDV (ZEV sales hit 100% by)</th>
<th>Trucks (ZEV sales hit 100% by)</th>
<th>Fuels (100% low-carbon fuels by)</th>
<th>VMT reduction in 2045 vs BAU</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC1</td>
<td>2040</td>
<td>2040</td>
<td>2045</td>
<td>15%</td>
</tr>
<tr>
<td>High ZEV</td>
<td>2035</td>
<td>2035</td>
<td>2045 (but less needed)</td>
<td>15%</td>
</tr>
<tr>
<td>High Fuel-cell</td>
<td>2040 (lower BEV)</td>
<td>2040 (lower BEV)</td>
<td>2045 (same as LC1)</td>
<td>15%</td>
</tr>
<tr>
<td>High Liquid Fuel</td>
<td>2045</td>
<td>2045 (except 2050 for long haul trucks)</td>
<td>2045 (but more needed)</td>
<td>15%</td>
</tr>
</tbody>
</table>
Thank You