

# Driving California's Emissions to Zero

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UC ITS Study for the California EPA

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# Acknowledgements



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# Background

## 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

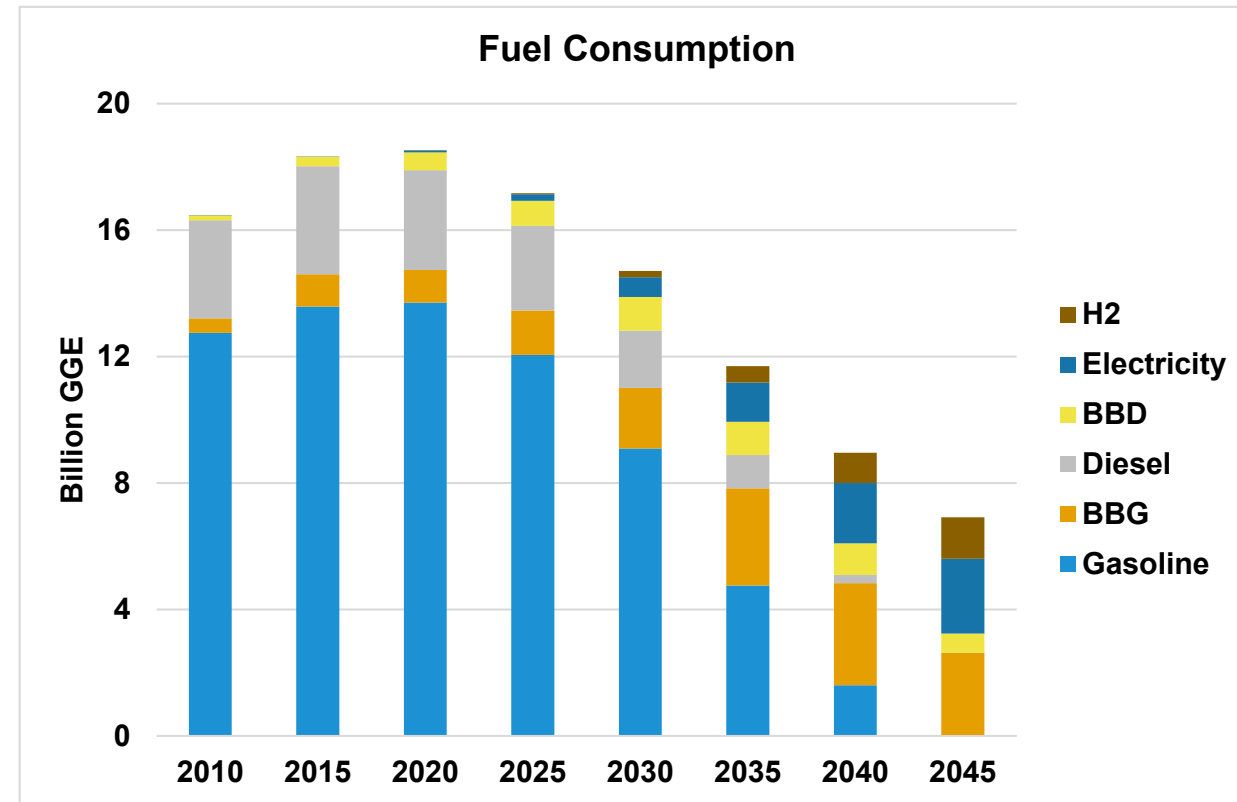
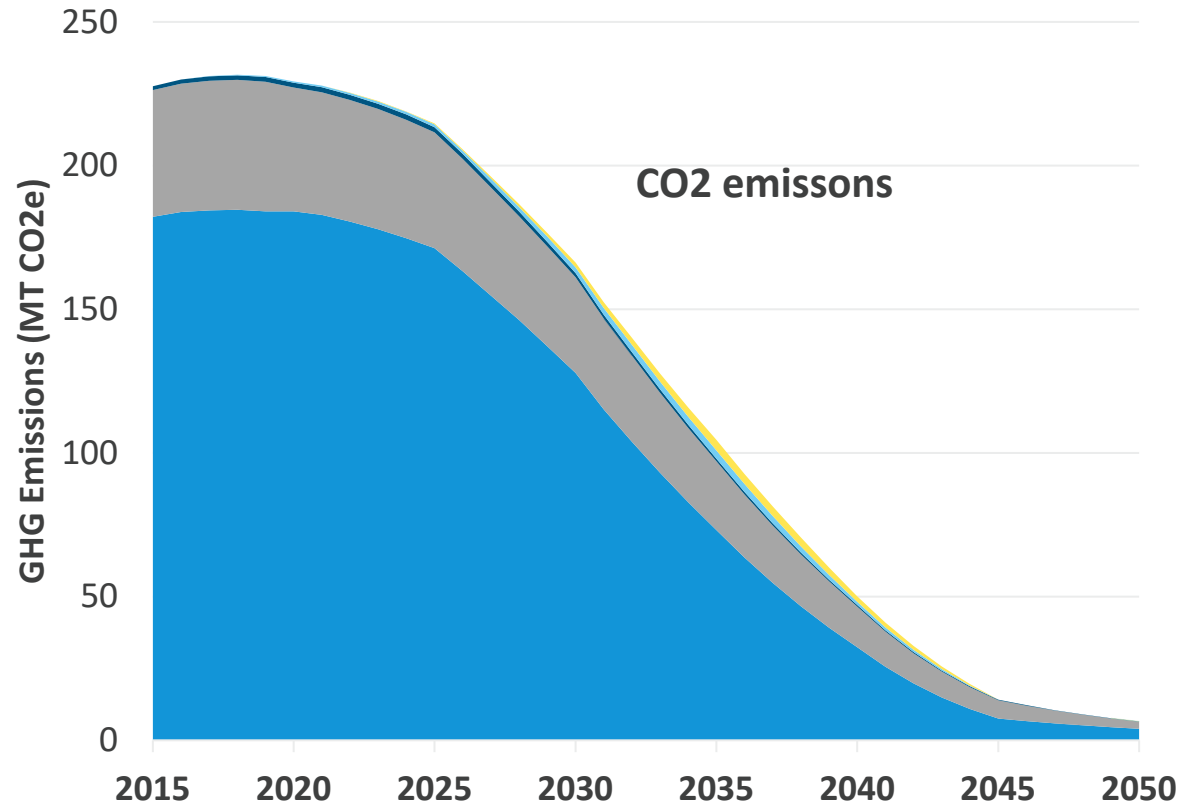
## Guiding Principles

- 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

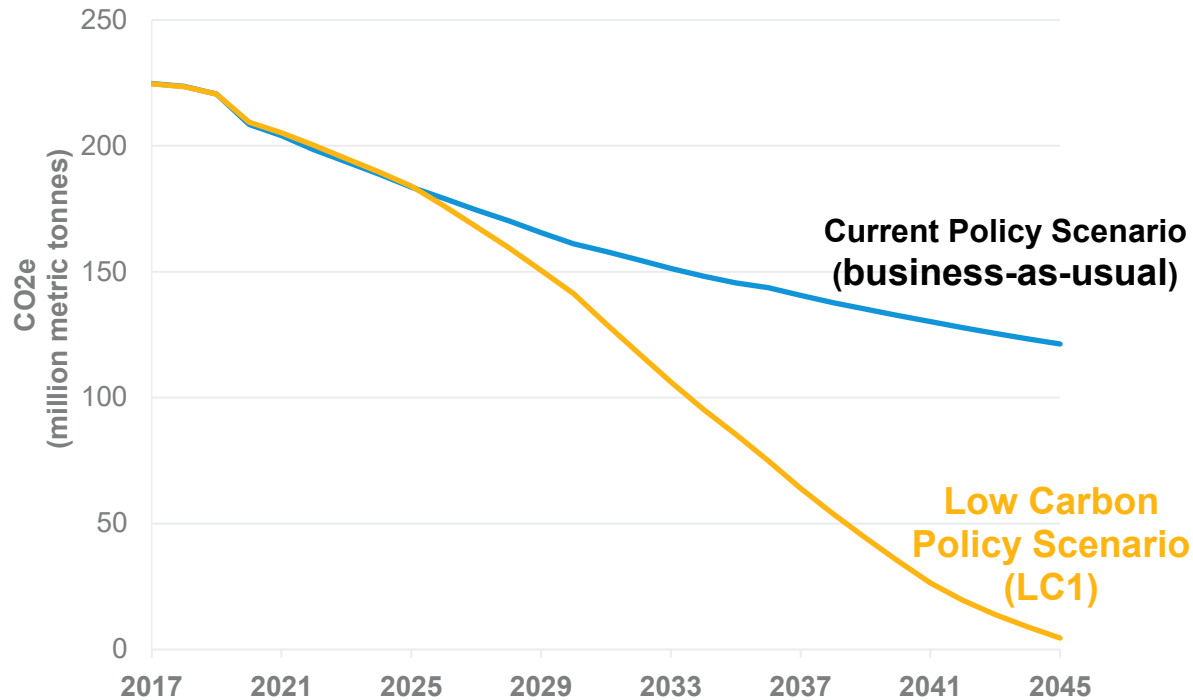
# Low Carbon Scenario (LC1) (to achieve net zero emissions from transportation in 2045)



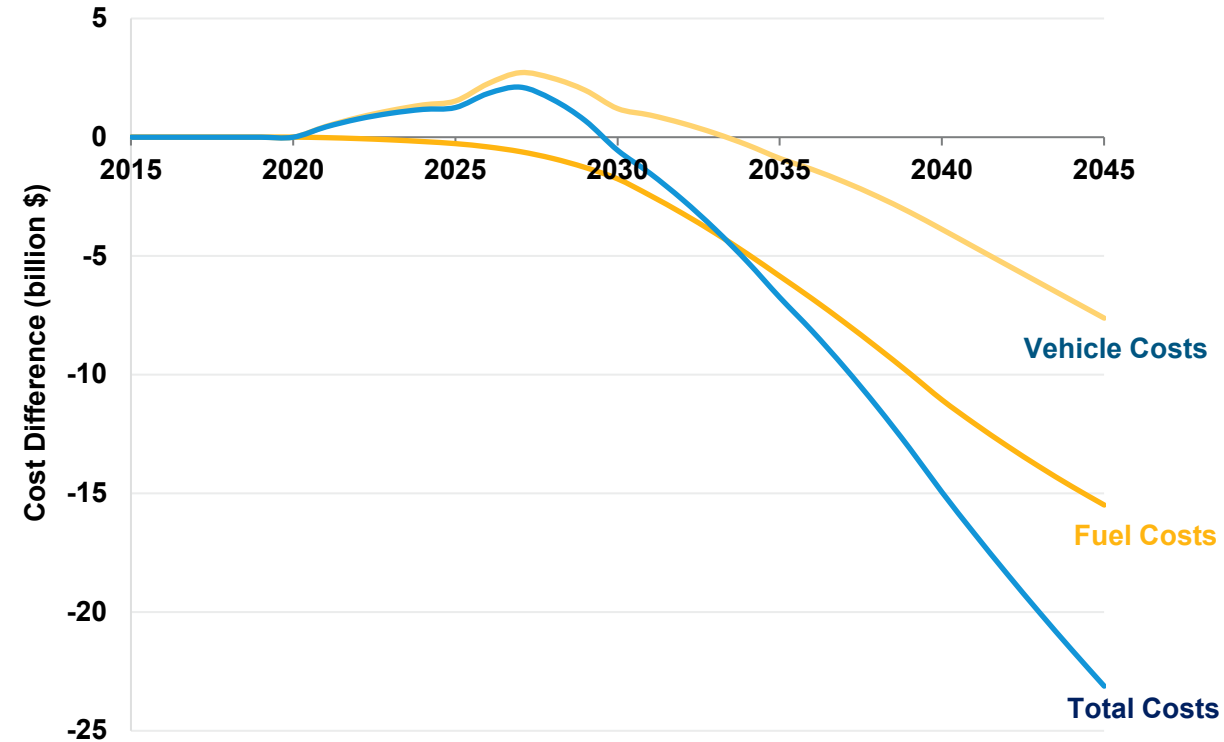
- Actions/strategies: VMT reduction, zero emission cars and trucks, and low-carbon fuels. Assumes transition to 100% clean electricity. Notes: on left, gasoline and diesel include blended biofuels. On right, biomass-based gasoline (BBG) and biomass-based diesel (BBD) are broken out.

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

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



Strong transportation decarbonization policies will result in cost savings, starting in 2030 (costs of LC1 scenario minus BAU scenario)



# Side case comparison

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

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

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# Thank You