



SUSTAINABLE TRANSPORTATION ENERGY PATHWAYS  
INSTITUTE OF TRANSPORTATION STUDIES

## Hydrogen's Potential Role In Meeting California's Long-Term Greenhouse Gas Emissions Goals (80% Reduction by 2050)

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California's greenhouse gas emissions reduction targets are among the most ambitious by a major world economy:

- Reducing emissions to 2000 levels by 2010,
- Achieving 1990 levels by 2020 and
- Reaching an 80% reduction below 1990 levels by 2050.

Given the expected growth in population and energy service demand in the State, meeting these targets, especially the 80% reduction by 2050, will be quite challenging.

The goal of this study is to identify technology and other potential options for meeting this ambitious, long-term goal in the transportation sector, including light-duty, heavy-duty, rail, aircraft, agriculture, marine, and off-road vehicles. Our analysis focuses on three main areas:

- Travel demand
- Fuel efficiency
- Fuel carbon intensity

The study highlights the various options that could be used to meet the emission reduction targets and creates "snapshots" of option combinations that allow the State to meet the targets across the various transportation modes.

**Hydrogen is one attractive option for reducing greenhouse gas emissions from the transport sector through reductions in fuel carbon intensity and improvements in vehicle efficiency.**

- The analysis elucidates the extent to which hydrogen vehicles can contribute to greenhouse gas reduction goals and characterizes additional steps that may have to be taken in the transportation sector.
- The study will help identify the challenges, potential benefits and tradeoffs for hydrogen fueled vehicles and other options associated with meeting the transport-related greenhouse gas reduction goals for California.

**For a current version of the poster, please visit the following webpage or contact the authors:**

**[http://steps.ucdavis.edu/research/Thread\\_6/80in50](http://steps.ucdavis.edu/research/Thread_6/80in50)**