

**California High-Speed Rail Authority and
California Air Resources Board**

**Greenhouse Gas Quantification Methodology
for the California High-Speed Rail Program**

**Greenhouse Gas Reduction Fund
Fiscal Year 2014-15**

A. Introduction

The Air Resources Board (ARB) is required to develop quantification methods for agencies receiving Greenhouse Gas Reduction Fund (GGRF) appropriations per SB 862 (Senate budget and Fiscal Review Committee, Chapter 36, statutes of 2014).

Provision 10 of Item 2665-306-6043 of SB 1029 (Approved July 18, 2012) directs the California High-Speed Rail Authority (Authority) to analyze the greenhouse gas (GHG) impacts of the high-speed rail program. In accordance, the Authority developed the GHG quantification methodology in consultation with ARB. This methodology will be used for GGRF quantification. For future years, ARB will continue to develop or update quantification methodologies for GGRF funded programs.

B. Quantification Methodology

The Authority is responsible for planning, designing, building and operating the first high-speed rail system in the nation. Strategic investments in urban, commuter, intercity rail systems will provide improved connectivity to the high-speed rail system. In doing so, California's high-speed rail system will be an integral part of the development of sustainable communities. Linking intercity and urban commuter rail systems as part of the sustainable community development will greatly improve the state's mobility and reduce greenhouse gas emissions and other pollutants.

The Authority developed the GHG quantification methodology for use in estimating proposed project GHG emission reductions for high-speed rail operations in accordance with SB 1029. With high-speed rail operations scheduled to begin in 2022, the evaluation period is from 2022 to 2060. The quantification methodology estimates the impacts associated with mode shift to lower GHG emitting high-speed rail and other methods such as:

- Mode shift from low occupancy auto vehicle miles traveled (VMT) to high-speed rail.
- Mode shift from air travel VMT to high-speed rail.
- 100% shift to cleaner renewable energy sources for rail operations replacing higher emitting energy sources and petroleum based fuels.
- Other mitigation methods such as electrification of the Caltrain system in the San Francisco Bay Area.

The GHG quantification methodology can be accessed here:

http://www.hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf

ARB reviewed the Authority's quantification methodology for estimating GHG emission reductions. ARB found that the analysis is reasonable, and the methodologies used for the analysis are consistent with the latest ARB emissions models.

C. Next Steps

ARB will continue to evaluate and update the GHG emission reduction quantification methodologies as necessary for future fiscal year appropriations for GGRF projects. Quantification methods are posted on ARB's auction proceeds webpage at: <http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/quantification.htm>