

H37.2004 Project Summary
**Comparison of Studies of the Emission Effects of the
California LEVII Standards and Federal Tier 2 Standards**

This project reviews major studies comparing emissions impacts of the California Low Emission Vehicle (LEV-II) emission standards and Federal Tier 2 standards. Eastern Research Group, Inc. (ERG) and its subcontractor Cambridge Systematics (CS) prepared this analysis.

The comparative studies examined in this project include: (1) Northeast States for Coordinated Air Use Management (NESCAUM) and the Connecticut Fund for the Environment (CFE) on MA, NY, VT, and CT, (2) New Hampshire Public Interest Research Group (NHPIRG) on toxics and VOC benefits in NH, and (3) New Jersey Public Interest Research Group (NJPIRG) in NJ. All of these studies found that the LEVII program would provide emission benefits over time, although the level of benefits varied. Other studies examined include: (1) New York Department of Environmental Conservation (NYDEC) on NY and (2) Alliance of Automobile Manufacturers (AAM) studies in various states.

Most studies confirmed that the LEVII program would reduce emissions from passenger vehicles compared to the Tier 2 program to greater or lesser degrees, with benefits increasing over time. The following summarizes the findings of Project H36.2004:

- The Connecticut study, which is recommended as the most relevant to Texas, estimated that the LEVII program would reduce NO_x emissions by 3% in 2015 and 11% in 2025. VOC emissions would be reduced by 7% in 2015 and 21% in 2025, compared to Tier 2. Air toxics emissions would be reduced by 14% in 2015 and 33% in 2025.
- Most of the NO_x benefits of LEVII come from the ZEV component. Specifically the findings result from the assumption that manufacturers will produce the minimum number of true ZEVs necessary and that most of ZEV credits would come from PZEVs (partial ZEV) and AT-PZEV (Advanced Technology PZEV) vehicles.
- AAM studies found much lower benefits for the LEVII program. The AAM Vermont study, for example, estimated a 1% difference in 2012 and a 4 to 6% difference in 2020 for both NO_x and VOC emissions (for all light-duty vehicles).
- It is important to note that all studies found that light-duty vehicle emissions will decrease significantly due to vehicle emission standards, and that these improvements will far outweigh VMT increases. For example, the Connecticut study looking at both standards found that VOC and NO_x emissions would be reduced by 60 to 75% in 2015 and 70 to 85% in 2025 compared to 2003 levels.

Potential Impacts on Texas

Estimating ton per day benefits for Texas extremely is difficult without detailed modeling. However, to provide a *very preliminary* sense of potential emission reductions, Connecticut results were applied to 2007 Houston area emissions. Using these assumptions (mid-point reductions of 3.1% NO_x and 7.4% VOC) the LEVII program would provide a 2.4 tpd NO_x reduction and a 5.8 tpd VOC reduction in 2015.

The report outlines the challenges that would face Texas in implementing a statewide LEVII program including program development, program monitoring and enforcement, and legal challenges.