

Air Quality: Nailing Down the Source of Ozone Pollution

Impact Curbing ozone emissions by petrochemical facilities to reduce respiratory illness

High concentrations of ground level ozone can cause shortness of breath, wheezing, coughing, headaches, and nausea. These effects are worse for children and those who already suffer from lung diseases.

When the state of Texas planned in the late 1990s to solve their ozone pollution problems, they targeted cars as the number one concern. Officials were surprised when OAR researchers said that the real culprits were hydrocarbon emissions leaking from petrochemical facilities heavily concentrated on the Texas Gulf Coast. What was even more astounding was that emission reductions recommended by OAR researchers could save Texas \$9 billion and 64,000 jobs over 10 years compared to alternative options. The economic study was conducted by The University of Chicago and The University of Houston.

OAR's Earth System Research Laboratory (ESRL) led the Texas Air Quality studies in 2000 as part of a State Improvement Plan aimed to bring the region into compliance with the Clean Air Act. Prior to the study, Texas had taken a traditional approach to reducing nitrogen-containing pollutants, focusing on reducing automobile emissions. When ESRL researchers released their findings, they changed the course of the state's plans, and -- doing what OAR does best -- provided needed expertise and data to devise practical environmental action, which will save taxpayers and industry money.

Asked to assess the effectiveness of targeted reductions, OAR researchers along with multiple federal, state, and local governmental agencies and academics followed up with a 2006 study. The new information shed light on complex air quality problems elsewhere in the Nation and assisted efforts to meet Environmental Protection Agency standards for ozone, airborne particles or aerosols, and regional haze. NOAA's primary planning and funding partners in the 2006 study were the Texas Commission on Environmental Quality and the Texas Environmental Research Consortium.

Image: Houston skyline.



The Texas Gulf Coast is home to two-thirds of the Nation's petrochemical production. It suffers from the highest ozone pollution levels in the country, exceeding Federal standards an average of 32 days each year (1999-2002).

Emission reductions by petrochemical facilities were estimated to save the state of Texas \$9 billion and 64,000 jobs over 10 years.

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