

# THE CALIFORNIA RAILROAD INDUSTRY

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## Freight Railroads Commitments to Help Clean the Air in California March 6, 2006

From 2000 to 2010, BNSF Railway and Union Pacific Railroad together will have spent at least \$260 million investing in new locomotive and other technologies in doing their fair share to reduce emissions and to improve air quality in California.

Specific programs include:

- Reduction of Particulate Matter (PM) in and around Rail Yards. California Air Resources Board (ARB) has estimated that this program will reduce by 2008 PM emissions around major rail yards statewide by 20% from 2005 levels.
  - About 425 locomotives will be equipped with automatic shutdown devices providing 15 minute shutdowns; 50% have already been installed as of January 2006
  - At least 80% of California fueling will be low-sulfur – six years earlier than required by federal regulation
  - At least 99% of all locomotives will comply with stringent smoke regulations– a much higher rate than any other mobile source
  - Health risk assessments will be carried out in cooperation with the ARB at the 16 major rail yards throughout California
- Reduction of NOx throughout California, especially in the SCAQMD. ARB has estimated this program will reduce fleet-average NOx emissions by 2010 from all railroad operations in the SCAQMD by 67% from 2000 levels.
  - Railroads are the only source of emissions in California that are subject to a comprehensive, aggressive and enforceable fleet-average agreement.
  - In the SCAQMD, this will mean, in effect, that between 2005 and 2010 the entire locomotive fleet that operates in the basin will be scrapped in favor of units that meet or exceed the federal emissions standards.
  - The railroads will be spending \$160 million to purchase 80 new locomotives not otherwise needed except for meeting the Los Angeles fleet average emissions requirements.

- Aggressive development of and purchase of new switch locomotive technologies for use in the Los Angeles basin.
  - By the end of next year, at least 50% of the switch locomotives serving the Los Angeles region are expected to have Ultra Low-Emissions Level (ULEL) certification by the ARB. These will include:
    - 61 Gen-set switchers using state-of-the-art truck emissions technology
    - 12 Hybrid switchers (basically battery-powered, akin to the Toyota Prius)
    - 4 Spark-Ignited LNG switchers
- Overall reductions of PM Emissions around railyards. ARB staff recently determined that by 2010, emissions in and around one typical rail yard (Commerce) will be reduced about 65% from 2005 levels by: (1) state regulations already adopted, plus (2) the two railroad MOUs, and plus (3) some additional future investments from the Moyer or other finding incentive programs. No other transportation mode in Southern California can claim such a substantial reduction from 2005 levels.
- Purchase of new units and retrofit of older locomotives in the national locomotive fleet to lower total fleet emissions. California obtains direct benefits from these investments.
  - Rebuilt over 2,900 units to meet Tier 0 U.S. EPA emissions standards
  - Purchased over 1,600 units that meet Tier 1 U.S. EPA emissions standards
  - Purchased over 640 units since January 2005 that meet Tier 2 U.S. EPA emissions standards – the most stringent standards applicable to locomotives today
- Worked with ARB to create an end-user research & development program for new technologies.
  - In 2001, committed to \$5 million in funding for locomotive particulate trap research at Southwest Research Institute

## Facts

- Rail is the most environmentally friendly way to move freight over land
- Trains are 2-4 times more fuel efficient than trucks on a ton-mile basis
- Trains are 2-3 times cleaner than trucks on a ton-mile basis (for NOX and PM)
- One double stack train equals up to 280 trucks
- Rail is the only mobile source that is required to retrofit existing units and rebuild units to new standards
- According to ARB's Almanac Emission Projection Data (2005), emissions from locomotives make up only 3.5% of the 2005 NO<sub>x</sub> inventory in the SCAQMD
- According to ARB's Almanac Emission Projection Data (2005), particulate emissions from locomotives make up only 0.8% of the 2005 PM inventory in the SCAQMD
- Rail supported the US EPA's standards for new and re-manufactured locomotives in 1994
- Since 2000, BNSF Railway and Union Pacific Railroad Company combined have spent \$260.9 million in new and rebuilt equipment to improve air quality in California.
- Worked with ARB to create an end-user research & development program for new technologies. In 2001, committed to \$5 million in funding for locomotive particulate trap research at Southwest Research Institute

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