

KEY COMPARISONS BETWEEN EPA'S 2003 AND 2002 MODELING RESULTS FOR CLEAR SKIES

EPA today released updated modeling results that confirm that the Clear Skies Act of 2003 would significantly improve air quality across the nation, resulting in enormous health and environmental benefits. The updated modeling uses the most recent air quality data, census information, and modeling techniques.

The updated analyses project that Clear Skies' health benefits are higher than previously estimated. It also shows that the country would come close to full attainment for the national fine particle standard based on the benefits of Clear Skies, the Administration's proposed off-road diesel rule and additional existing requirements.

This summary compares the key modeling results between last year's analyses and the updated analyses. For more detailed information about the models, the assumptions and the modeling results are being posted on the web at www.epa.gov/clearskies.

Air Quality and Attainment of Health-Based Ozone and Fine Particle Standards

- The new analyses demonstrate that Clear Skies and EPA's proposed nonroad diesel rule, together with existing control programs, bring the vast majority of counties into attainment with the fine particle and ozone standards. See charts below.
 - This is the first time EPA has modeled the combined affect of Clear Skies and EPA's proposed non-road diesel rule.

WITH CLEAR SKIES, MOST COUNTIES WOULD ATTAIN THE PM2.5 STANDARD

COUNTIES PROJECTED TO EXCEED THE PM2.5 STANDARD				
	2002 Analyses		2003 Analyses	
	Existing Control Programs (Base Case)	Clear Skies and Existing Control Programs	Existing Control Programs (Base Case)	Clear Skies and Existing Control Programs
Monitored Data 1999-2000	173	173		
Monitored Data 1999-2001			129	129
Projection: 2010	101	67	80	38
Projection: 2020	100	46	53	18

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**CLEAR SKIES
HELPS AREAS ATTAIN THE 8-HOUR OZONE STANDARD**

COUNTIES PROJECTED TO EXCEED THE 8-HOUR OZONE STANDARD				
	2002 Analyses		2003 Analyses	
	Existing Control Programs (Base Case)	Clear Skies and Existing Control Programs	Existing Control Programs (Base Case)	Clear Skies and Existing Control Programs
Monitored Data 1997-1999	311	311		
Monitored Data 1999-2001			290	290
Projection: 2010	129	99	59	56
Projection: 2020	107	53	30	27

Health Benefits

- The new modeling projects that Clear Skies will have greater health benefits and avoid more premature deaths and hospital/ER visits than did last year's modeling.

Benefit Category (2020)	Clear Skies Act 2002	Clear Skies Act 2003
Total health benefit (\$1999) (Alternative estimate)	\$93 billion (\$11 billion)	\$110 billion (\$21 billion)
Premature mortality (Alternative estimate)	11,900 (7,000)	14,100 (8,400)
Chronic bronchitis	7,400	8,800
Hospitalization/ER visits	11,900	30,000
Non-fatal heart attacks	<i>not modeled</i>	23,000
Minor respiratory illness & symptoms	15 million days (includes 370,000 days with asthma attacks)	12.5 million days (includes 180,000 days with asthma attacks and 200,000 school loss days, a new benefits endpoint for 2003 analysis)

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Emissions Reductions

- Looking at the data on a national scale, the new analyses project emissions reductions similar in level and timing to those projected by the 2002 analyses.
 - The new analyses project slightly greater SO₂ emissions in 2020 (approximately 8%) due to revised modeling assumptions.
- The new analyses affirms that large emissions reductions in all three pollutants would still occur throughout the Midwest and the East.
 - The new analyses project a slight shifting in the geographic distribution of SO₂ emissions reductions compared to last year's analyses. Greater reductions are expected in the Northeast and Ohio, while fewer reductions are expected in the Southeast and West. This is due to the combined effect of revised modeling assumptions.

Environmental Improvements

- The new analyses project that Clear Skies will result in \$3 billion of visibility benefits in national parks and wilderness areas in the Southeast, Southwest, and California. This is the same as last year's projection.
- The new analyses affirms the significant environmental improvements projected last year, particularly in the Northeast and the Southeast.
- In the new analyses, there is a slight shift in the environmental improvements, with the Northeast seeing somewhat greater improvement than projected last year and the Southeast seeing somewhat less improvement. This is due to the slight shift in emissions described above.
 - The new analyses project large reductions in chronic acidity in Adirondack and broader Northeastern lakes, with elimination of chronic acidity in Adirondack lakes by 2030. In the Southeast, the new modeling projects that Clear Skies will help prevent further acidification of water bodies.
 - The new modeling continues to project significant visibility improvements along the Great Smoky Mountains and Blue Ridge Mountains, but slightly less than projected in 2002 due to the slight geographic shift in SO₂ emissions discussed above.

Power Sector and Economic Impacts

- The 2003 analyses continue to show that the benefits of Clear Skies greatly outweigh the costs.
 - The new analyses project annual costs in 2020 of \$6.3 billion. Last year's analyses projected \$6.5 billion. The difference is primarily due to our revised modeling assumptions.
- The new analyses continue to project that Clear Skies will help maintain fuel diversity and protect our energy security.
- The new analyses project a 2.5% increase in 2020 in coal-fired generation compared to last year's analyses. This is due primarily to our revised assumptions about electricity demand.

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- Coal production in 2020 is projected to stay at current levels in the West, rise slightly in the East, and increase in the Interior. This is a slight geographic shift from last year due to the combination of revised modeling assumptions.
- Like last year, the new analyses project only small impacts on electricity, coal and natural gas prices.
- EPA's new analyses include several sensitivity analyses to project the affects of using alternative assumptions by the Energy Information Agency about natural gas prices, electricity growth, and mercury emissions.
- The updated analyses show that mercury control costs would be higher than were estimated last year.
 - We are still in the early stages of understanding how different technologies will affect mercury emissions from power plants because mercury is not currently regulated in the power sector. There is an ongoing dynamic research process sponsored by EPA, the Department of Energy (DOE), the Electric Power Research Institute (EPRI), and vendors specifically aimed at furthering our understanding of mercury control, with new data being made available on a continuous basis.
 - Over the last year, both EPA and DOE's Energy Information Agency (EIA) used updated information to reassess what mercury emissions levels would be in 2010 after installation of NOx and SO2 controls necessary to meet the Clear Skies' SO2 and NOx caps (NOx and SO2 control equipment also reduce some mercury emissions – i.e., “cobenefit” reductions). Due to differences in assumptions and models, the Administration estimates that these mercury emissions would range from 34 to 46 tons. EIA's and EPA's updated analyses estimate the incremental cost now of complying with the 2010 cap to be \$650 to \$750 million per year.
 - A key feature of understanding this cost is the Clear Skies' safety valve provision that sets a maximum cost of \$35,000 per pound of mercury emissions. The safety valve is designed to minimize unanticipated market volatility and provide more market information that industry can rely on for compliance decisions. The updated modeling projects that the safety valve provision would be triggered if technology does not improve in the future (the modeling does not include any assumptions about how technology will improve). If the safety valve is triggered, EPA will borrow allowances from the following year's auction to make more allowances available at the safety valve price. The future year cap is reduced by the borrowed amount, and the emissions reductions are ultimately achieved.
 - EPA believes that, as technology develops, the cost of mercury controls will decrease. If it does not, the new analyses project greater mercury emissions in 2020 than did the 2002 analyses due to the triggering of the safety valve.