

UJAE

UNIONS FOR JOBS
AND THE ENVIRONMENT

The Continuing Improvement In Air Quality

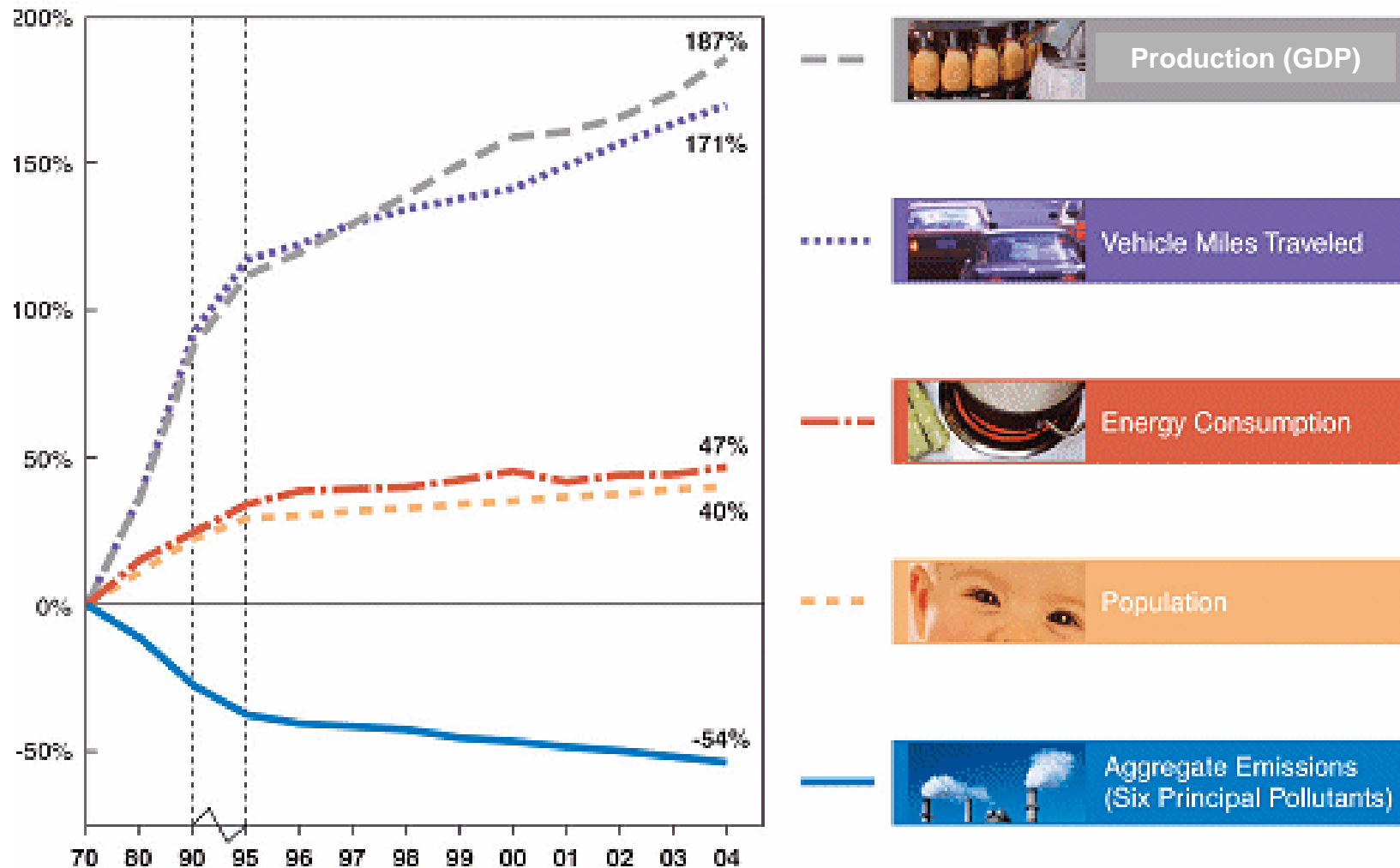
Unions for Jobs and the Environment (UJAE)

July 2005

Charts

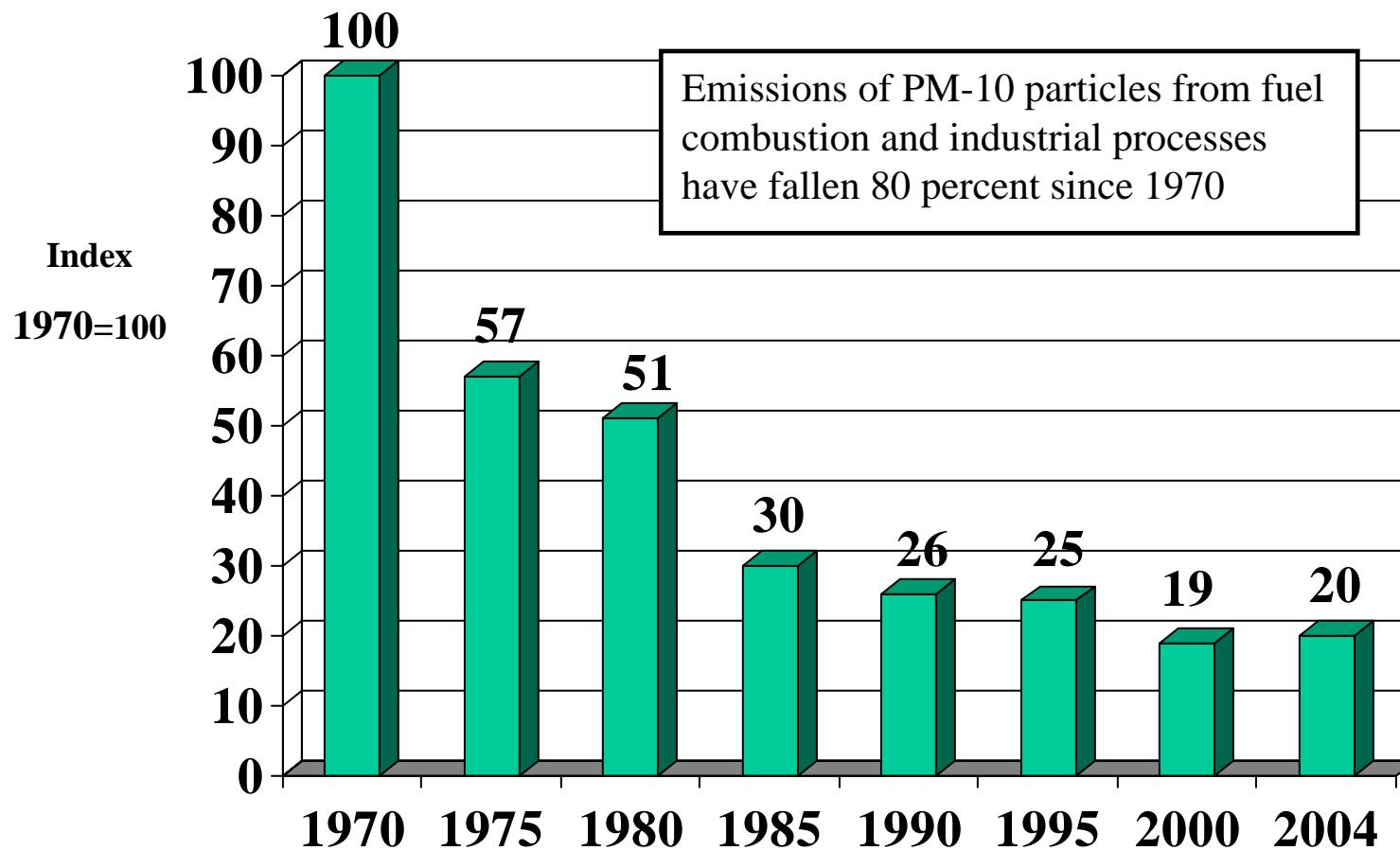
1. Energy consumption rises while the air gets cleaner
2. Particulates from fuel combustion
3. Sulfur dioxide (SO₂)
4. Nitrogen oxides (NO_x)
5. Carbon monoxide (CO)
6. Volatile organic compounds
7. Lead
8. Sources of regulated emissions
9. Sources of mercury emissions
10. New EPA rules for SO_x and NO_x
11. States covered by the Interstate Air Quality Rule
12. Projection of decline in sulfur dioxide and nitrogen oxides
13. New EPA requirements for mercury
14. Summary and Conclusion

Cleaner Air: Energy consumption and production Rise while emissions of pollutants decline



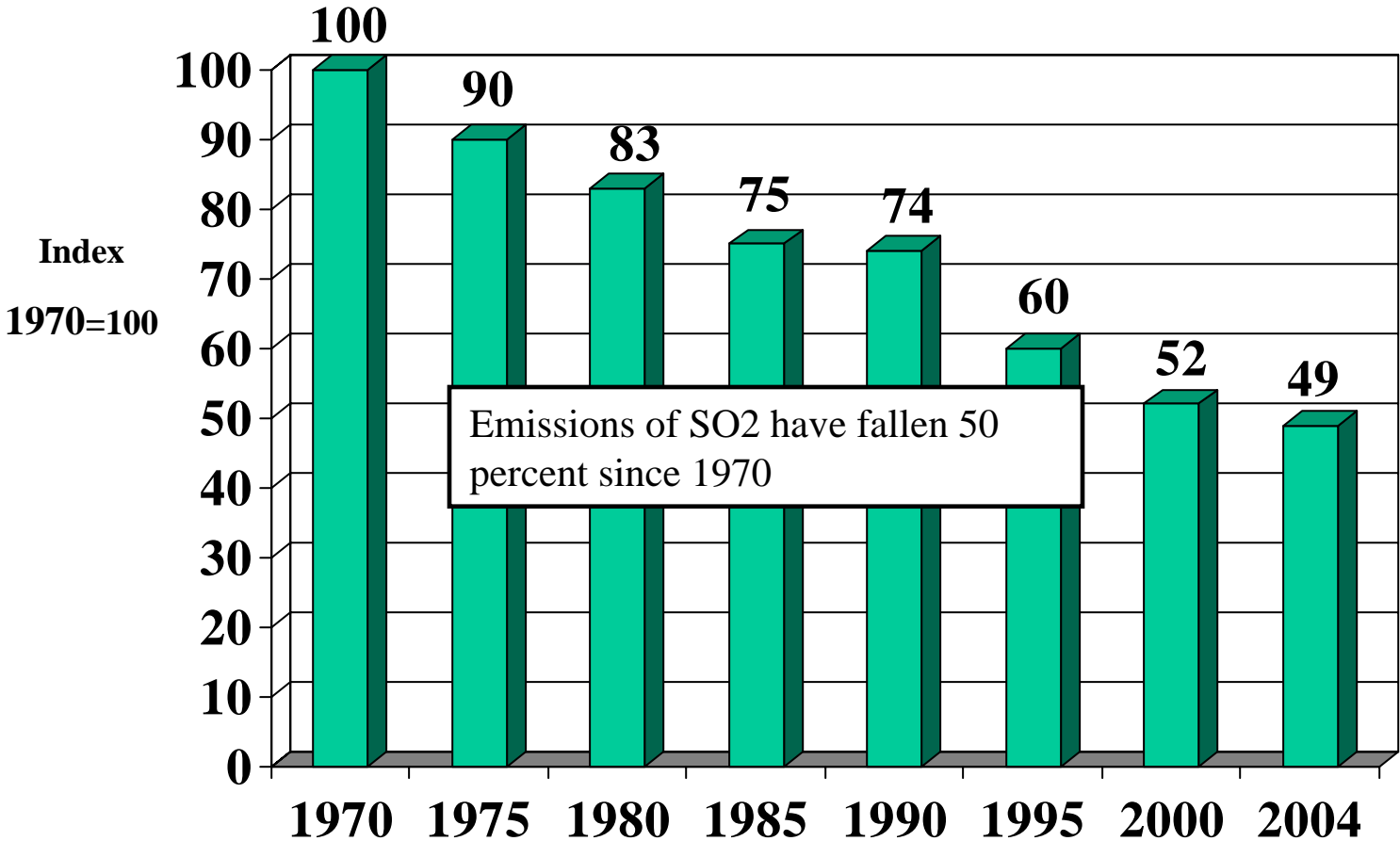
Source: EPA: The six principle air pollutants are sulfur dioxide (SO₂), nitrogen oxides (NO_x), mercury, carbon monoxide, lead and volatile organic compounds.

Particulates from fuel combustion and industrial processes down dramatically



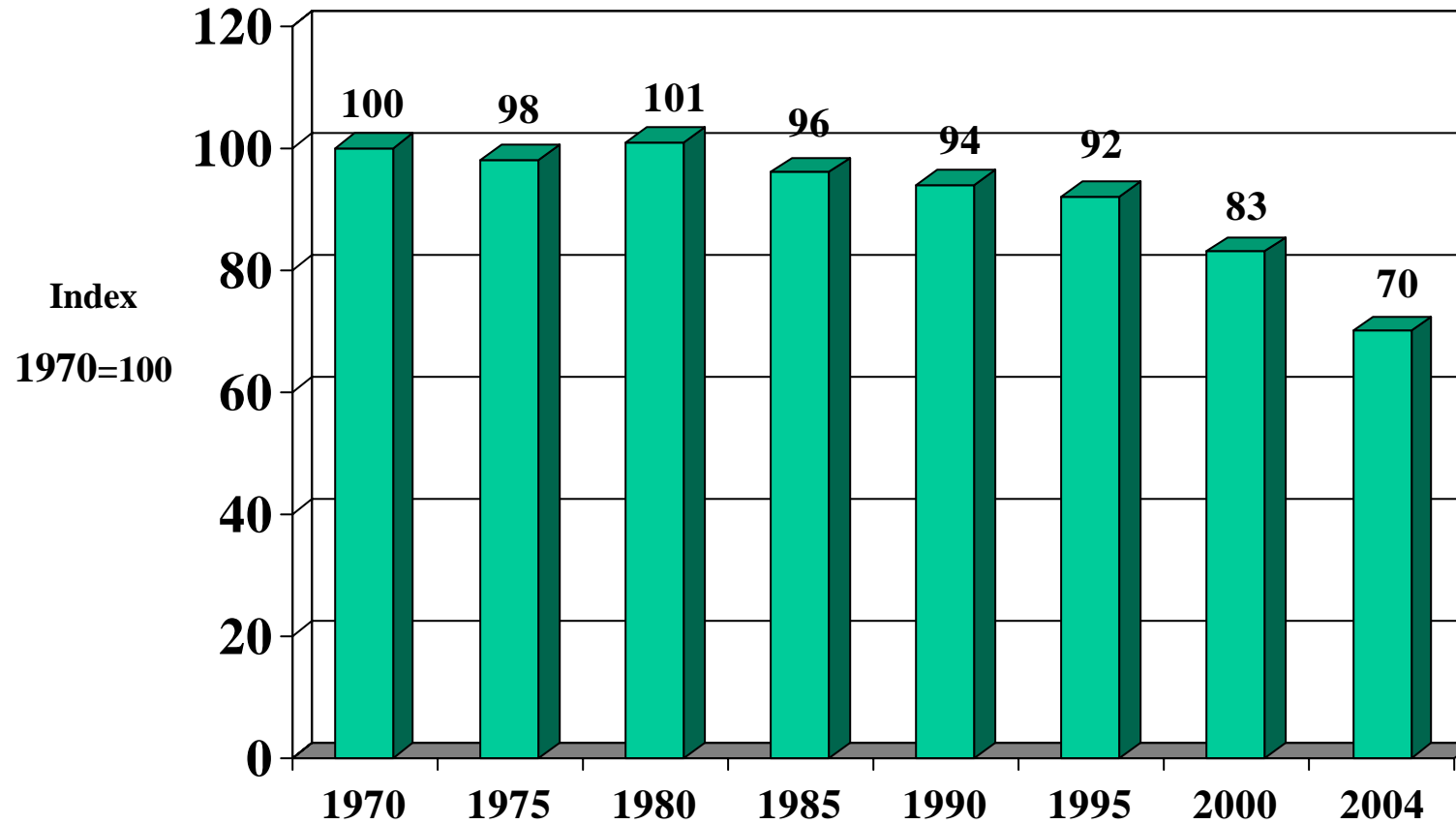
Source: EPA; Particles of 10 microns and larger fell from 12.2 million tons in 1970 to 2.5 million tons in 2004.

Emissions of sulfur dioxide show a marked improvement compared with 1970



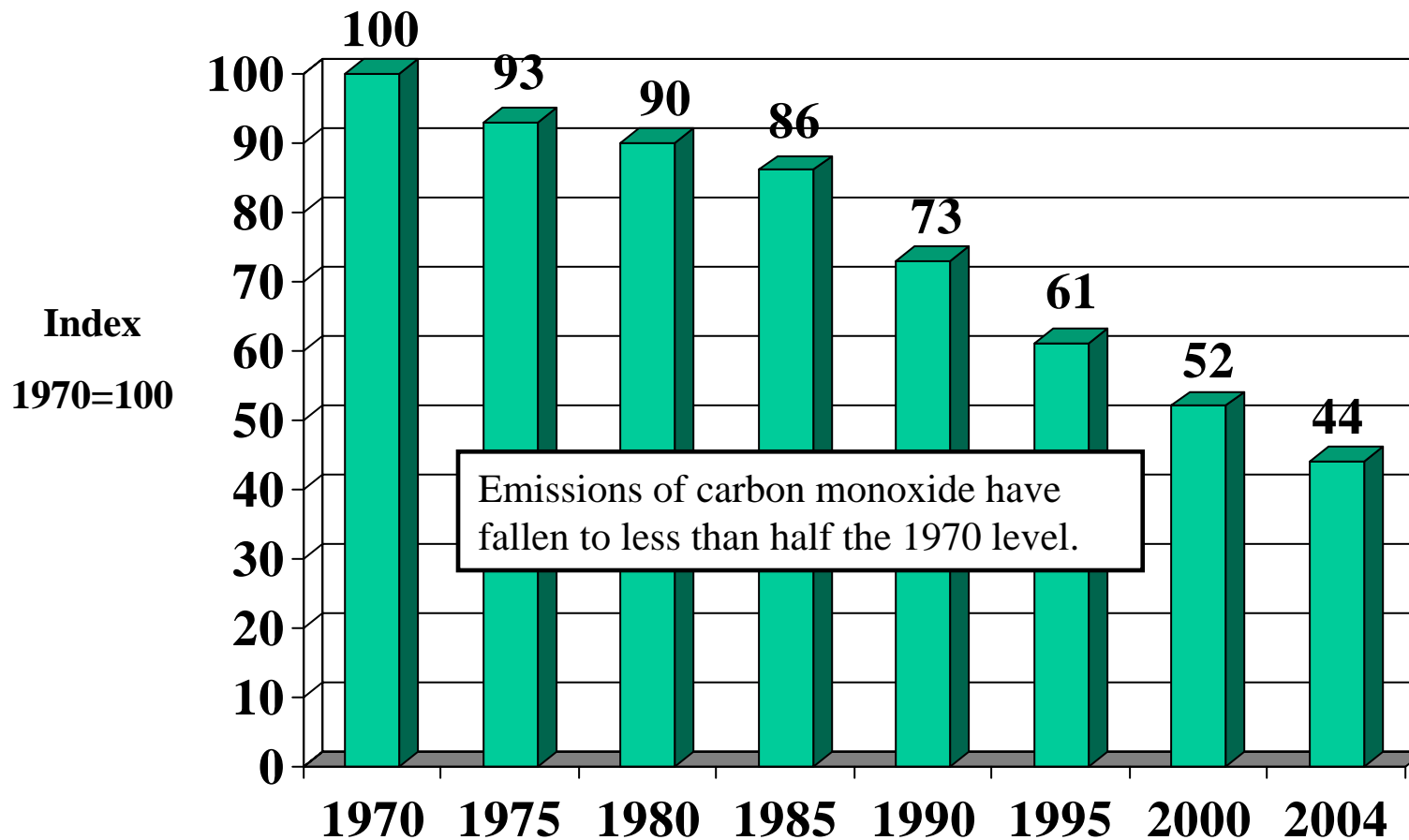
Source: EPA; SO2 emissions fell from 31.2 million tons in 1970 to 15.2 million in 2004.

Continuing progress in Nitrogen Oxides



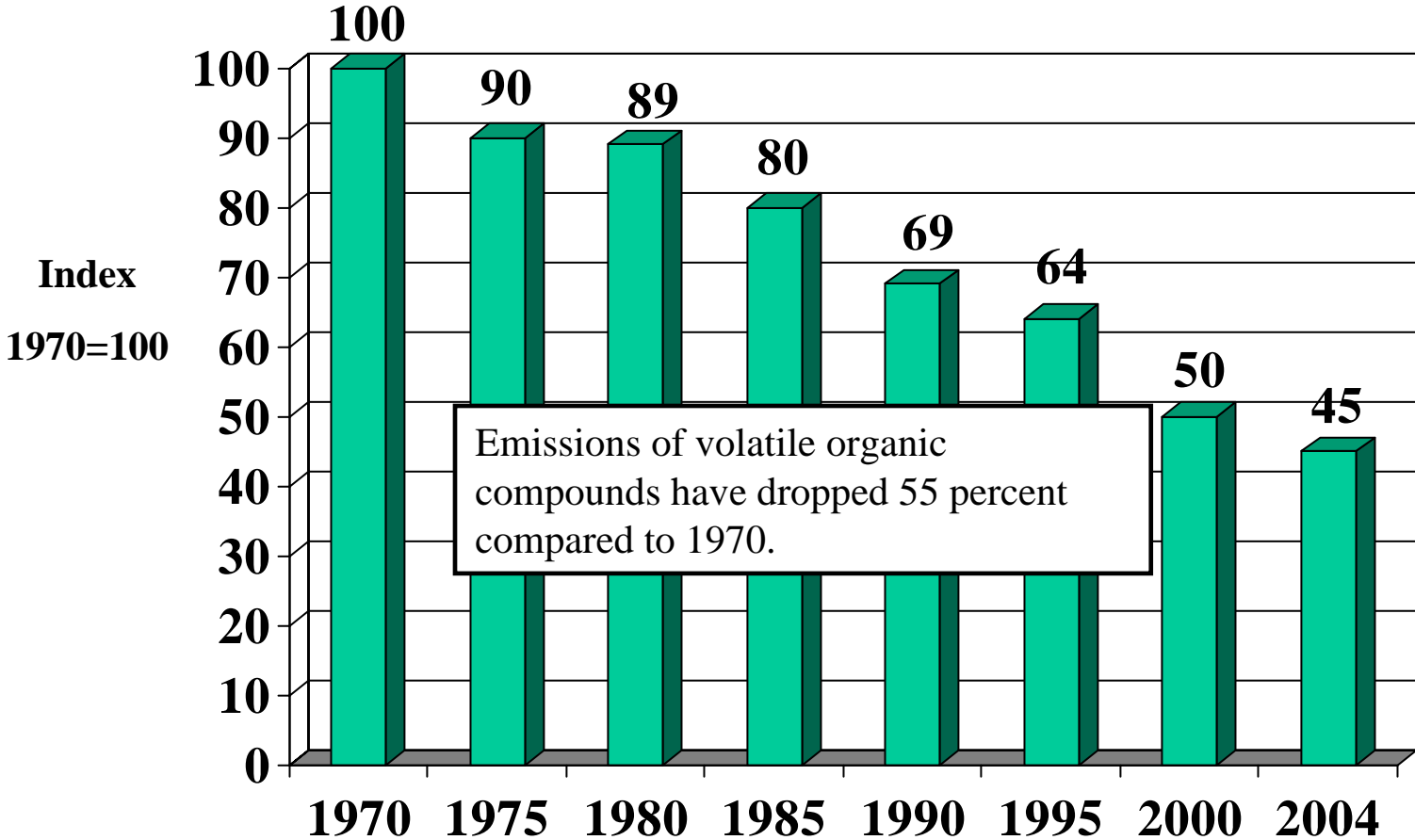
Source: EPA; Nitrogen oxide emissions fell from 26.9 million tons to 18.8 million tons.

Steep fall in carbon monoxide emissions



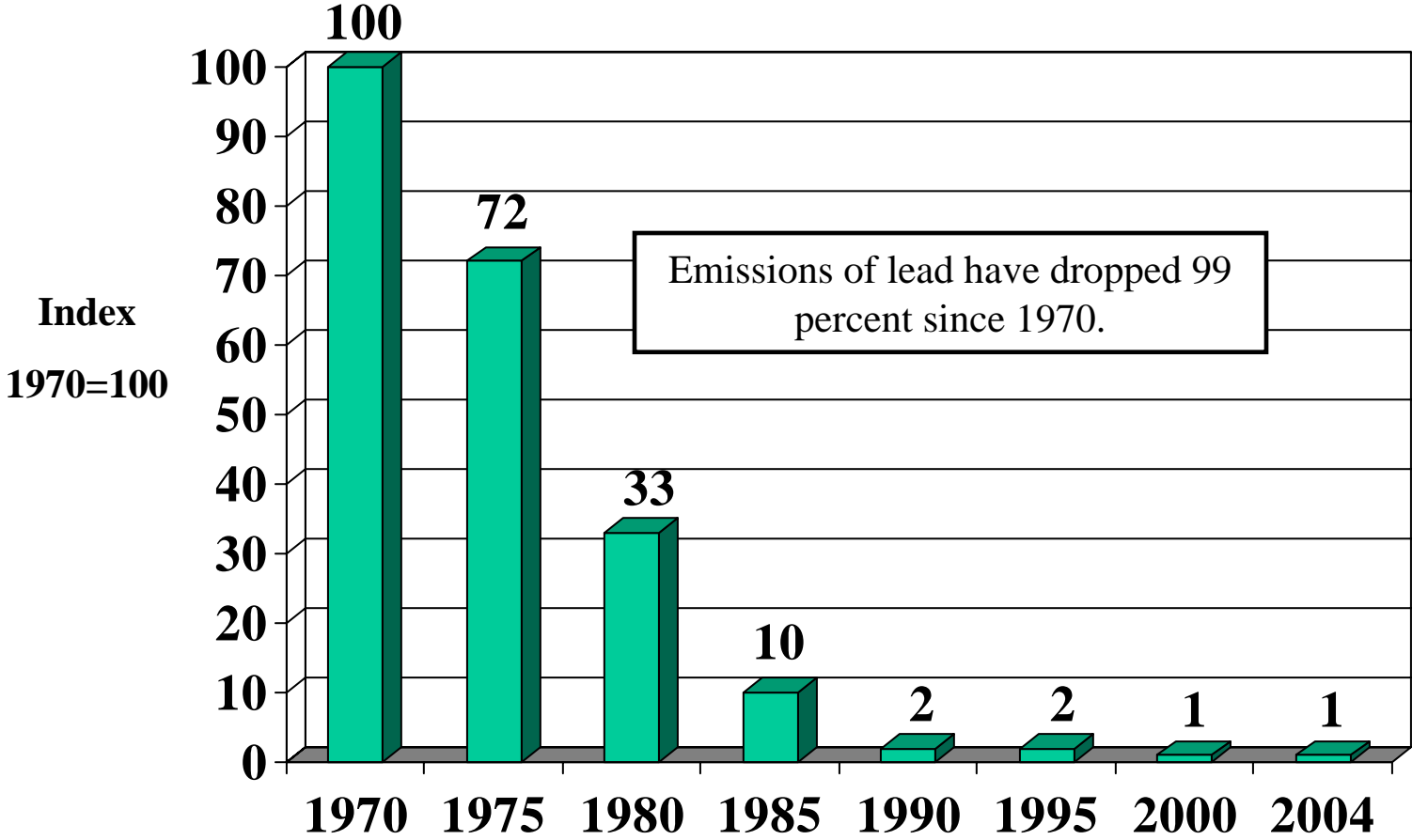
Source: EPA; Carbon monoxide emissions fell from 197 million tons to 87 million in 2004.

Emissions of volatile organic compounds show a steep decline since 1970



Source: EPA; Emissions fell from 33.7 million tons to 15 million tons in 2004.

Dramatic drop in lead emissions



Source: EPA; Lead emissions dropped from 221,000 tons to 3,000 tons in 2004.

Sources of regulated emissions

Source	Particulates	Sulfur Dioxide	Nitrogen Oxides	Volatile Organics	Carbon Monoxide	Lead
Industrial	2%	22%	15%	9%	5%	59%
Electric Utilities	1%	67%	25%	0%	0%	2%
Residential	1%	1%	3%	4%	4%	0%
Commercial	0%	2%	2%	0%	0%	10%
Transportation	1%	2%	32%	37%	56%	0%
Off Highway	1%	6%	22%	14%	22%	13%
Other*	93% *	0%	2%	36% **	11%	16%

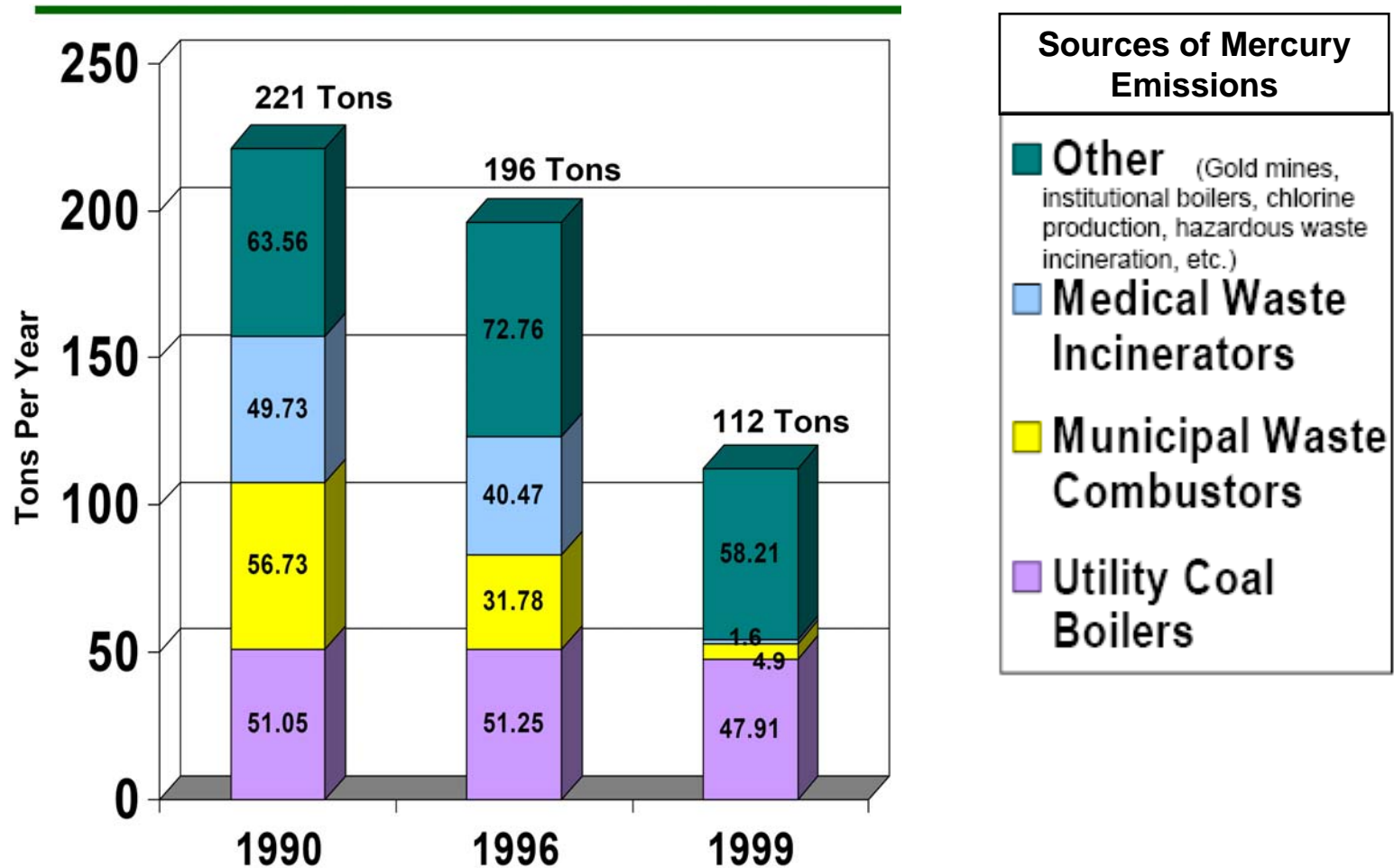
* Includes dust from unpaved roads 36%, agriculture and forestry 27%, wind erosion 15% and construction 13%.

** Use of solvents including consumer solvents and surface coatings 29% and storage of gasoline and petroleum products at terminals and service stations 7%.

Note: Ground level ozone is primarily a product of a chemical reaction between nitrogen oxides, volatile organic compounds and sunlight.

Source: EPA

Mercury emissions down by nearly half



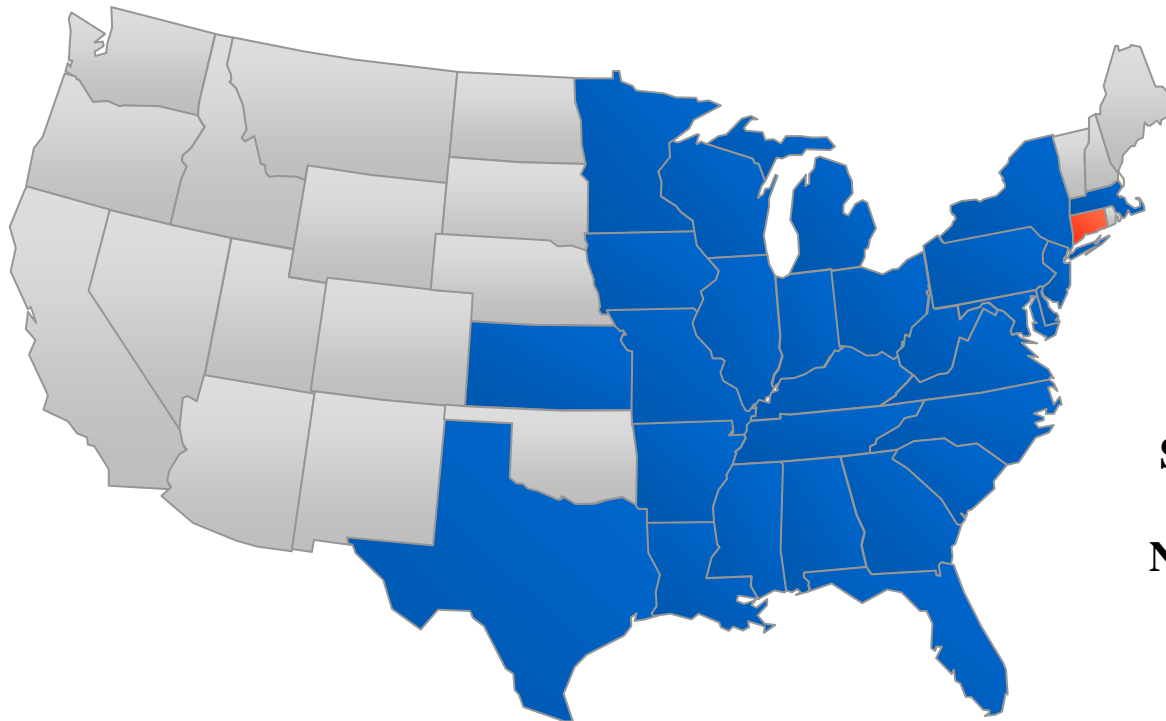
Source: EPA

New EPA rules for SOx and NOx (March 2005)

- The “CAIR”^{*} rule requires a reduction of emissions of SO₂ and NO_x in 29 eastern states and the District of Columbia in two phases.
 - SO₂ emissions must be reduced approximately 40 percent below 2002 levels by 2010 and **approximately 70 percent below 2002 levels by 2015.**
 - NO_x emissions must be cut by **65 percent below 2002 levels by 2015.**

* Clean Air Interstate Rule

States covered by EPA's Clean Air Interstate Rule



- States with both SO₂ and NO_x requirements
- States with ozone season NO_x requirements only
- States not covered by the CAIR

Emissions Caps* (million tons)

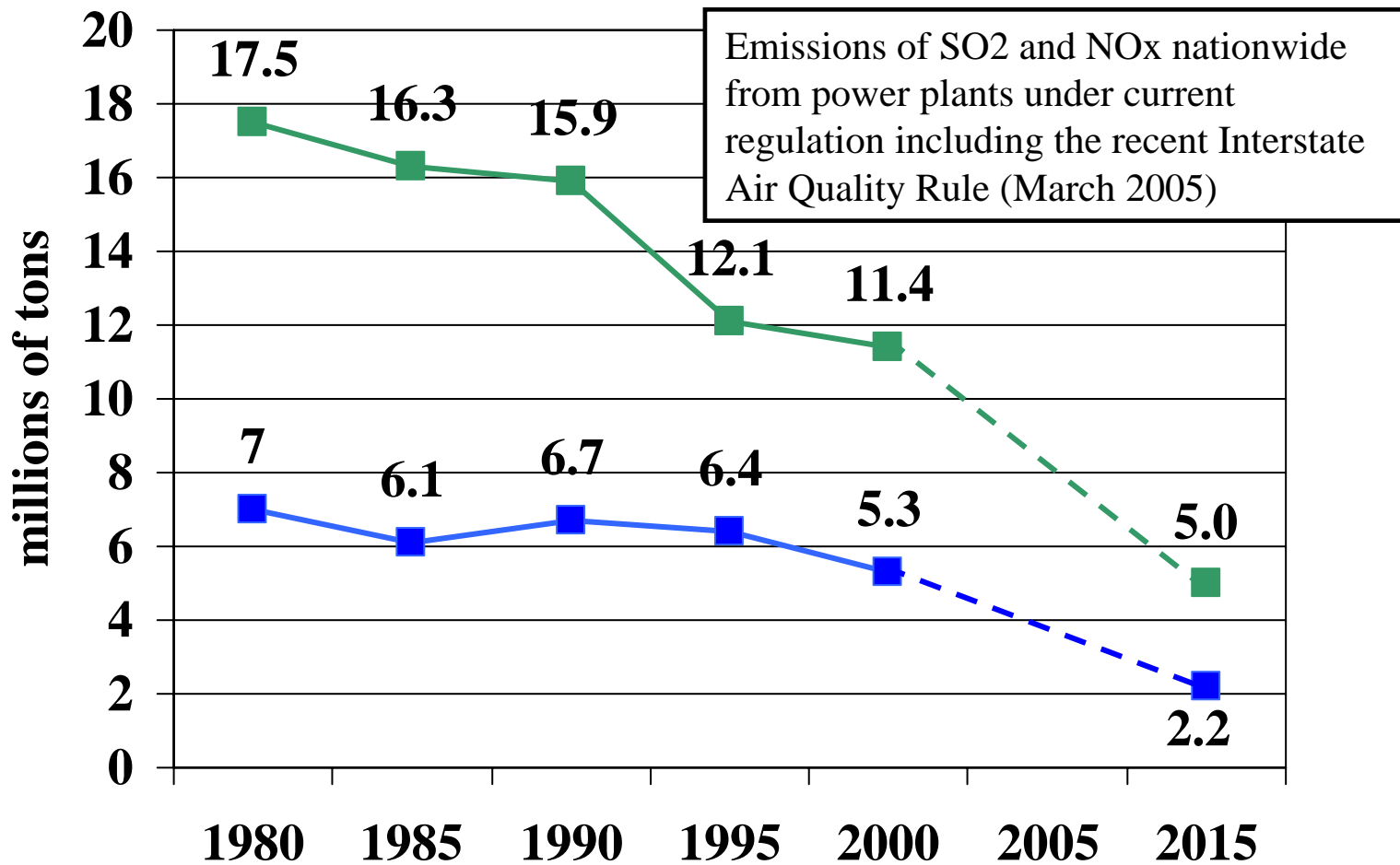
	<u>2010</u>	<u>2015</u>
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SO₂	3.6	2.5
NO_x	1.5	1.3

**For the affected region.*

Adds Alabama, Arkansas, Louisiana, Iowa, and Wisconsin to 8-hour ozone NO_x SIP Call region.
Rhode Island covered by NO_x SIP Call only.

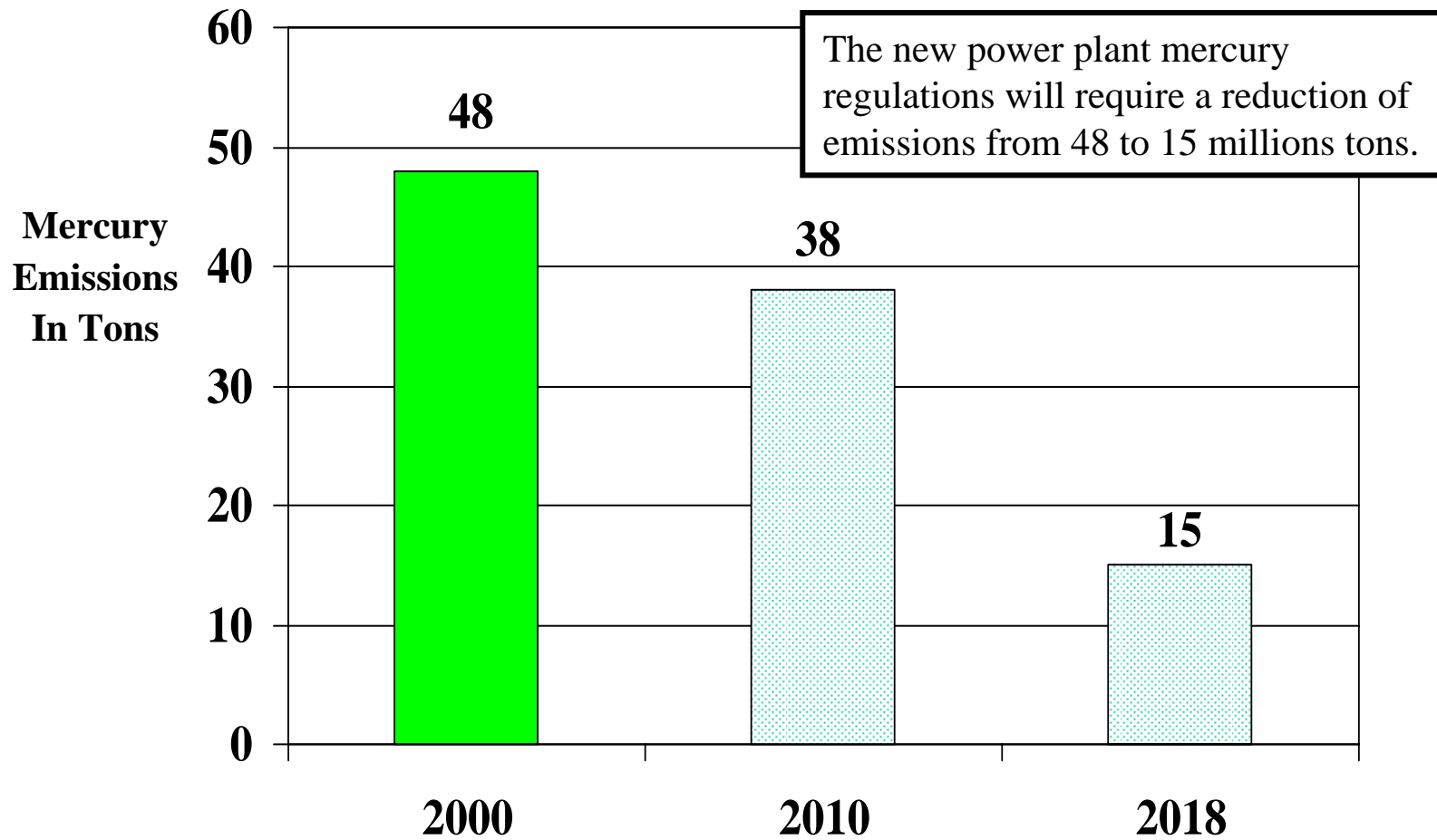
EPA projects a major decline in sulfur dioxide and nitrogen oxides from electric power plants



Source: EPA

New EPA regulatory requirements for mercury

(Finalized March 15, 2005)



Source: EPA

Summary of air emission improvements:

1. Particulates from fuel burning – will continue to decline due to more efficient power plants and new technology.
2. Particulates from other sources – will decline with new farming methods and programs to prevent erosion.
3. Sulfur dioxide and nitrogen oxides will continue to decline due to new control technologies.
4. Carbon monoxide – will decline with more efficient combustion technologies.
5. Volatile organic compounds – Will decline due to better containment
6. Lead – will remain at the greatly reduced level
7. Mercury – will be greatly reduced due to expected new regulatory program.

Policies needed to continue air emission improvements and a healthy economy

- Ensure that regulations are in line with available technology
- Maintain the nations fuel diversity
- Do not consider greenhouse gas emissions in the same legislation as goals for SO₂, NO_x, and Mercury

The logo for UJAE, featuring the letters 'UJAE' in a bold, white, sans-serif font with a blue outline, set against a yellow background that is partially obscured by a black diagonal shape.

UNIONS FOR JOBS AND THE ENVIRONMENT

UJAE is a partnership of:

The Brotherhood of Locomotive Engineers
International Brotherhood of Boilermakers,
Iron Ship Builders, Blacksmiths, Forgers and Helpers
International Brotherhood of Electrical Workers
International Brotherhood of Teamsters
Marine Engineers Beneficial Association
Sheet Metal Workers International Association
Transportation · Communications International Union
United Food and Commercial Workers
United Mine Workers of America
United Transportation Union
Utility Workers Union of America