

EPA's Pretense of Science: Regulating Phantom Risks

From the Perspective of a Former
Environmental Regulator

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From the EPA Administrator: “Don’t Breathe the Air. It Might Kill You”

- Lisa Jackson, Administrator of EPA commented on Real Time with Bill Maher:
- “We are actually at the point in many areas of the country... the best advice is don’t go outside. Don’t breathe the air. It might kill you.”
- More of her chilling declarations:
- “In 2020, the CAA Amendments will prevent over 230,000 early deaths.”
- “Public health protections will mean the difference between... life and death for hundreds of thousands of citizens.”
- “If we could reduce particulate matter [pollution] to levels that are healthy, it would have identical impacts to finding a cure for cancer.”
- In recent years, cancer has caused the deaths of approximately 600,000 people per year.

EPA's 2011 Study: The Benefits and Costs of the Clean Air Act: 1990-2020

- EPA concludes the CAA will save 230,000 lives in 2020 aka will prevent “premature mortality.”
- EPA monetizes the “saved lives” at nearly \$2 trillion.
- Compliance costs only \$65 billion.
- EPA claims “The wide margins by which benefits exceed costs *combined with extensive uncertainty analysis* suggest it is very unlikely this result would be reversed using any reasonable alternative assumptions or methods.”
- In other words-complete certainty.
- A super deal! People don't die and it is a \$30 to \$1 deal

EPA is on an unprecedented regulatory spree

- The current EPA is churning out new rules unprecedented in speed, number, scope, stringency and costs.
- Five of the over 20 major rules directed at electric generation threaten the fundamental sufficiency and reliability of the nation's electric power system.
- NERC concludes that EPA rules could risk involuntary retirements of over 80 GW of the nation's @ 1010 GW of electric capacity by 2015.
- Already closure: Over 100 EGUs and at least ten coal mines.
- Coal is disproportionately impacted.
- EPA first hard-edged limit for CO₂ from EGUs is an effective ban on new coal plants and may implicate existing plants.

Purpose of the Clean Air Act (CAA)

Protection of Human Health

- If EPA's claims about saving lives—health benefits equivalent to a cure for cancer—are factually true, the case for its currently unprecedented regulatory agenda would be compelling.
- How can society worry about higher electric rates or unemployment if thousands of human lives are at stake?
- An aside... EPA's CO2 limit for EGUs found no health benefits and no costs.
- My Conclusion: EPA's claims about preventing deaths are not plausible. EPA is misusing science to scare the public and intimidate policy makers.

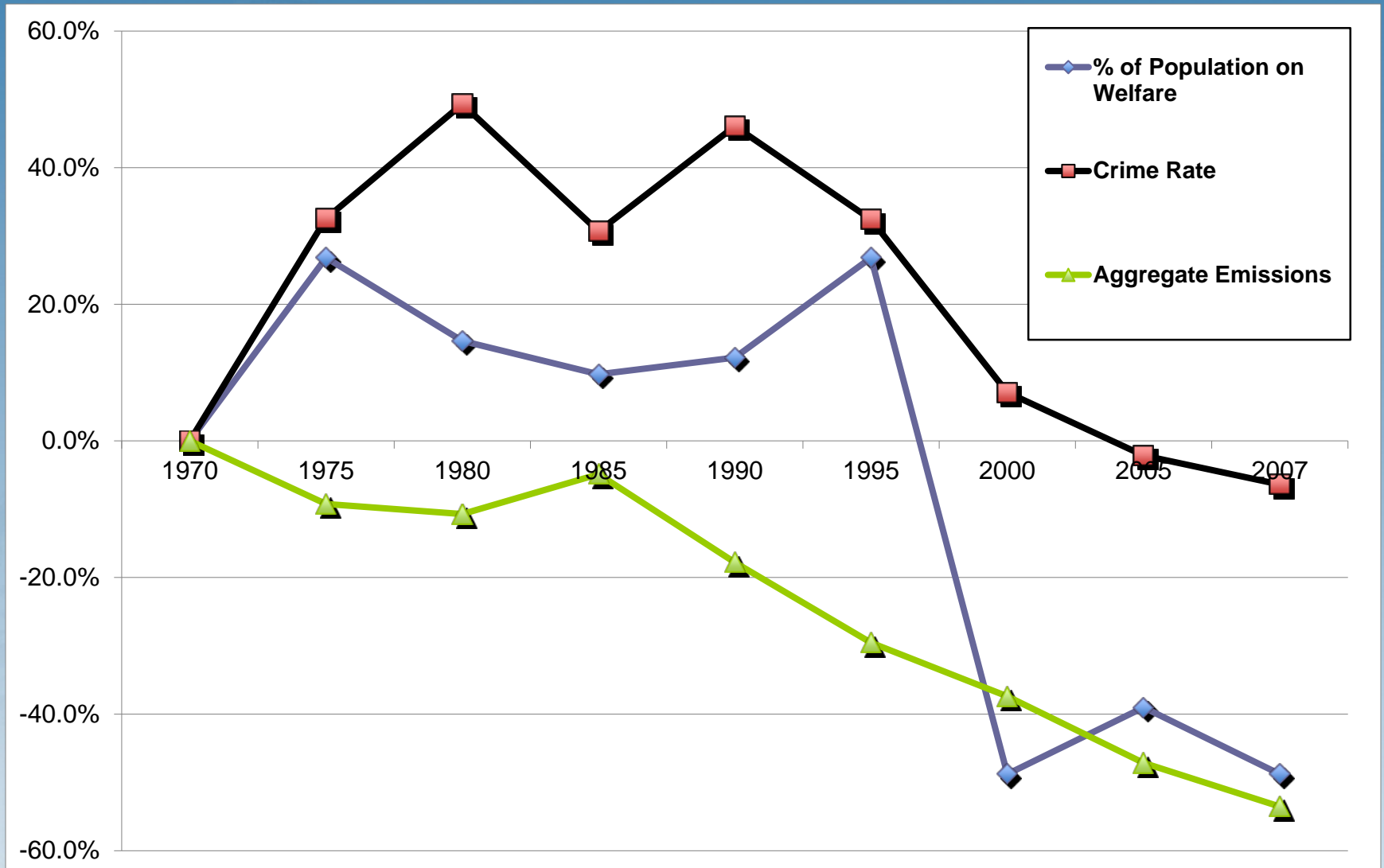
“Nobody Gets Out of This Alive”

- Human life is certain to end, is fraught with dangers but much safer now than before.
- Life expectancy in the U.S. has increased 70% over the last century.
- Medical science and disease prevention have dramatically reduced, if not eliminated, many disabling and fatal diseases.
- The most dangerous environmental risks to human health from contaminated water and air have been eliminated.
- Contrary to Lisa Jackson’s claims, the U.S. has achieved remarkable environmental improvements.
- EPA’s own data documents the improvement at “Air Quality Trends” January 2012.

Air Quality Improvement 1980-2010

	Ambient 1980-2008	Ambient 1980-2010	Emissions 1980-2008	Emissions 1980-2010
Carbon Monoxide (CO)	-79%	-82%	-58%	-71%
Ozone (O3)	-25%	-28%	-49%	NCD
Lead (Pb)	-92%	-90%	-96%	-97%
Nitrogen Dioxide (NO2)	-46%	-52%	-40%	-52%
Particulates (PM10)*	-31%	-38%	-46%	-83%
Fine Particulates (PM2.5)**	-21%	-27%	-36%	-55%
Sulfur Dioxide (SO2)	-71%	-76%	-56%	-69%
NCD - No Current Data				
*1990-2010				
**2000-2010				

Comparison of Reduction Crime, Welfare, Pollution



Source: FBI Uniform Crime Reports, U.S. Department of Health and Human Services, EPA

Implausible Assumptions Drive EPA's Wild Numbers of Deaths by PM

- Assumption I: PM2.5 Causes Premature Mortality, aka early death.
- Assumption II: Going to Zero: No Pollutant Threshold Below Which Air is Healthy.
- Assumption III: Statistical Lives= Real Lives Saved.
- Assumption IV: Co-benefits of PM2.5 Reduction Can Justify Any Regulation Under the CAA .

Assumption I: PM 2.5 Causes Premature Mortality, aka Early Death

- EPA implausibly assumes that PM2.5 causes premature death on the basis of two epidemiological studies (Laden and Pope) showing minute statistical correlations between “early death” and ambient levels of PM2.5.
- EPA ignores hundreds of EPI studies contradicting Laden and Pope and ignores many toxicological studies and clinical trials alone capable of demonstrating causal connection between pollutant levels and health impacts.
- It’s the correlation v causation problem.
- The correlation of higher purchases of heavy coats and higher incidence of hypothermia in the winter does not mean heavy coats cause hypothermia.
- The premature deaths EPA counts include all deaths except accidental . No cause of death or medical history involved.

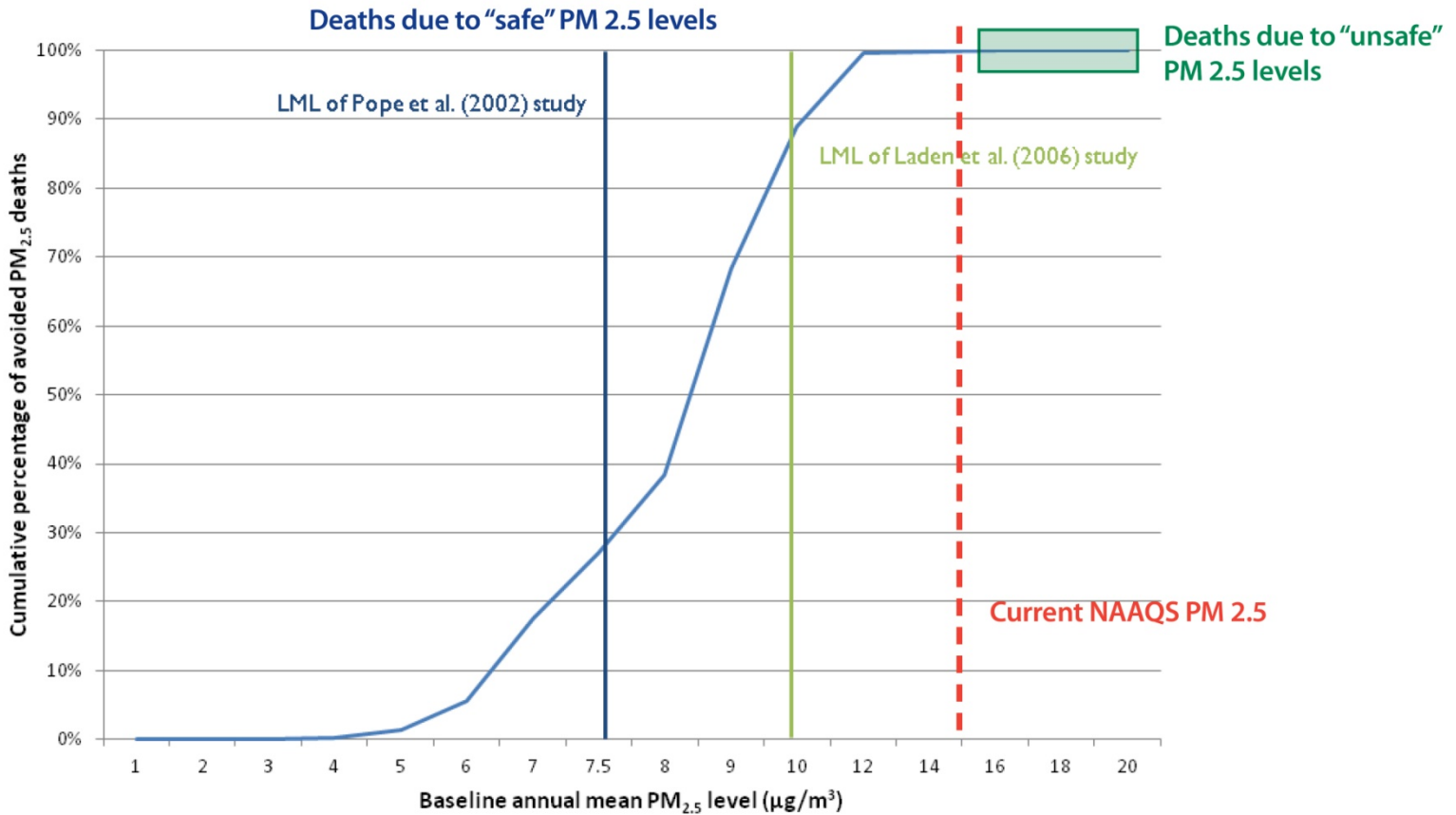
Assumption I: PM 2.5 Causes Premature Mortality, aka Early Death

- EPA's "extensive uncertainty analysis" is an invalidated model which assigns 100% certainty to the causal connection of PM and death.
- But the confounders are blatant, especially exposure.
- EPA assumes people are exposed to the highest monitored PM level 24/7.
- PM2.5 levels are far higher indoors than outside. EG laundry, vacuuming.
- Mildew, mites, pet dander exacerbate asthma more than ambient air.
- CAA regulated pollutants have declined by 50-60% while asthma has increased.
- Toxicological data show that current levels of PM are too low to cause significant disease or death.

Assumption II: Going to Zero: No Pollutant Threshold Below Which Air is Healthy

- In 2009, EPA began imputing risks of premature mortality at PM2.5 levels not only far below the NAAQS but below natural background levels approaching zero.
- Statisticians call this methodology: no [safe] threshold linear regression to zero analytic model.
- In EPA's hands this means: No risk too low, improbable or uncertain that it's not worth regulating.
- Pure extrapolation: the use of quantitative relationships outside the range of evidence on which it was based. Not one scintilla of observed or empirical evidence.
- With 2009 adoption of the no-safe threshold approach, EPA risk assessment increased four-fold.
- Deaths attributed to PM pollution rose from 88,000 to 320,000.
- An absolute precautionary principle at its most absurd.
- Violates the foundational principle of Toxicology : It's the Dose that Makes the Poison.

Risk Attributed to Ambient PM



Of the total PM-related deaths avoided:

73% occur among population exposed to PM levels at or above the LML of the **Pope et al.** study.

11% occur among population exposed to PM levels at or above the LML of the **Laden et al.** study.

Source: Table 5-15, EPA's RIA in final Utility MACT (mercury) Rule.

Assumption III: Statistical Lives (SL) = Lives Saved

- EPA's 2011 Benefits study claim more CAA regulation " will prevent over 230,000 early deaths" in 2020.
- One SL is an aggregate of minute risk reductions to many individuals until they total one statistical life. No real people.
- The "lives at issue" translate to relative risks of mortality. Extended life-span is the health benefit.
- In EPA's Benefits Study- amounts to 3-4 months of life for an octogenarian.
- EPA monetizes the value at \$8.9 million per statistical life... a figure more appropriate for 25 year old.
- Thus, 230,000 "deaths avoided" x \$8.9 million per SL saved = \$1.8 trillion.

Assumption IV: Co-Benefits from PM2.5 Reduction Can Justify Any Rule under the CAA.

- Since 2009, EPA increasingly uses “co-incidental reductions” of PM 2.5 to justify regulations not intended to control PM2.5 but others such as mercury, ozone, SO2
- EPA’s cost-benefit analyses call these “co-benefits.”
- Since 2009, PM2.5 co-benefits are the primary if not exclusive source of health benefits in all major air regulations. .
- EPA’s no-threshold assumption vastly increased the benefits EPA could ascribe.
- EPA admits its Mercury (AKA MATS) rule is the most expensive to date ...at \$11 billion direct costs/yr.
- But only 0.004% of the \$140 billion in attributed health benefits derive from reducing mercury.
- The rest (99.996%) derive from PM 2.5 reductions below background levels!
- The Mercury rule directly jeopardizes electric reliability and already has led to job loss, mine and power plant closures.

Year	RIAs for Rules Not Targeting Ambient PM 2.5	PM Co-Benefits Are >50% of Total	PM Co-Benefits Are Only Benefits Quantified
1997	Ozone NAAQS (.12 1hr=>.08 8hr)	X	
1997	Pulp & Paper NESHAP		
1998	NOx SIP Call & Section 126 Petitions		
1999	Regional Haze Rule	X	
1999	Final Section 126 Petition Rule	X	
2004	Stationary Reciprocating Internal Combustion Engine NESHAP	X	
2004	Industrial Boilers & Process Heaters NESHAP	X	X
2005	Clean Air Mercury Rule	X	
2005	Clean Air Visibility Rule/BART Guidelines	X	
2006	Stationary Compression Ignition Internal Combustion Engine NSPS		
2007	Control of HAP from Mobile Sources	X	X
2008	Ozone NAAQS (.08 8hr=> .075 8hr)	X	
2008	Lead (Pb) NAAQS	X	
2009	New Marine Compression Ignition Engines > 30 l. per Cylinder	X	
2010	Reciprocating Internal Combustion Engines NESHAP -- Compression Ignition	X	X
2010	EPA/NHTSA Joint Light-Duty GHG & CAFES		
2010	SO2 NAAQS (1-hr, 75 ppb)	X	> 99.9%
2010	Existing Stationary Compression Ignition Engines NESHAP	X	X
2011	Industrial, Commercial, and Institutional Boilers NESHAP	X	X
2011	Industrial, Commercial, and Institutional Boilers & Process Heaters NESHAP	X	X
2011	Commercial & Industrial Solid Waste Incin. Units NSPS & Emission Guidelines	X	X
2011	Control of GHG from Medium & Heavy-Duty Vehicles		
2011	Ozone Reconsideration NAAQS	X	
2011	Utility Boiler MACT NESHAP (<i>Final Rule's RIA</i>)	X	≥ 99%
2011	Mercury Cell Chlor Alkali Plant Mercury Emissions NESHAP	X	
2011	Sewage Sludge Incineration Units NSPS & Emission Guidelines	X	X

EPA's Science is "On the Rocks"

- So says Dr. Thomas Burke, Chm. of recent NAS review panel on EPA's risk assessment.
- EPA's new limit for formaldehyde set far lower than average level of formaldehyde in human exhalation.
- Under existing law, judicial review of EPA's risk assessments is near to impossible.
- The courts are reluctant to delve into the policy making authority that Congress delegated to EPA.
- Congress needs to reclaim its authority.
- Congress needs to enact law stipulating minimal criteria for credible regulatory science.
- US House has begun to hold hearings on the problems with EPA's science.
- EPA claims "pure science" dictates its regulatory judgments.
- Science is inherently incapable of making judgment about what is acceptable or unacceptable societal risk.
- Ineluctably, that is a policy judgment.

Simple Arithmetic Undermines EPA's Claims

- EPA's "science" is highly sensitive to the unjustified certainty (aka 100% probability) ascribed to key assumptions.
- With a more reasonable assumption of 50% probability that EPA's assumptions are true, the estimated health benefits fall from almost \$2 trillion to \$19 billion.
- Remember the Benefits study estimated the direct costs at \$65 billion.
- "The EPA's evaluation of health benefits is unrealistically high, by a factor that could well exceed 1000"
Tony Cox "Reassessing the Human Health Benefits from Clean Air," Risk Analysis (Nov. 2011)

Science is a Critical Tool to Inform but Cannot Dictate Policy Decisions

- Congress should reclaim its authority to make the major policy decisions under federal environmental law.
- REINS Act
- The CAA needs to stipulate minimal criteria for risk assessment of health effects to include:
 - EPA risk assessment must be peer-reviewed by truly independent body.
 - Toxicological studies and clinical trials carry more weight than Epidemiological studies.
 - Abandon the no-threshold linear regression modeling assumptions.
 - Use representative estimates of actual exposure and not implausible worst-case scenarios.
 - Physical measurement trumps models.
 - Plausible biological mechanism - prerequisite of health-effects findings.
 - Comprehensive, cumulative cost-benefit analysis of all rules.
 - Make EPA's risk assessments judicially reviewable.