

The Approaching EPA Train Wreck

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“An EPA regulatory spree
unprecedented in U.S. history”

The Wall Street Journal, 3/4/11

An Unprecedented Barrage of New EPA Rules

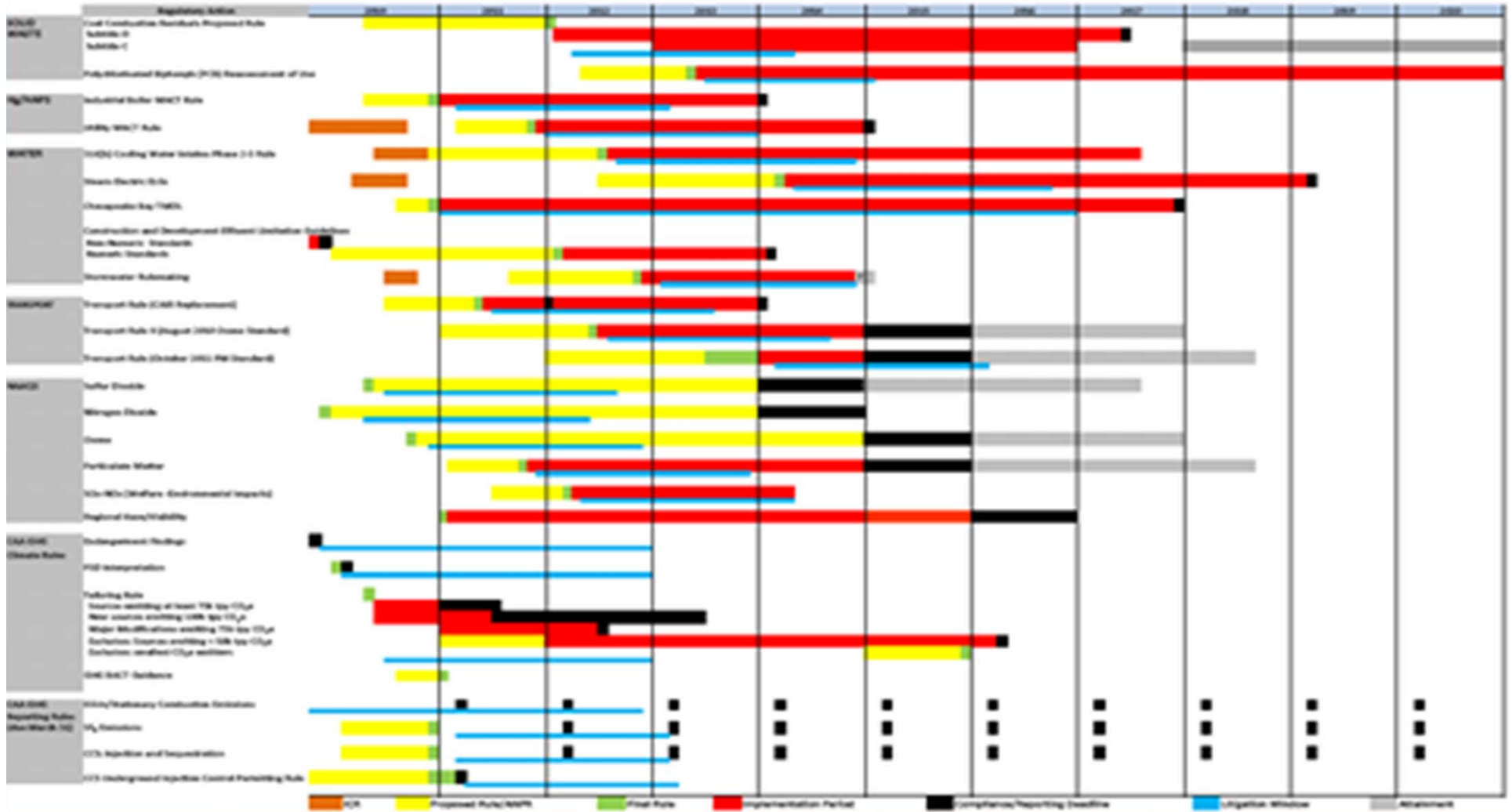
- The EPA is churning out new regulations in unprecedented number, speed, scope, stringency, and cost.
- Projected impacts on an unparalleled scale: cost, employment, electric rates, electric reliability, and U.S. competitiveness.
- NERC, FERC, et al: Four of the EPA rules could force retirement of over 80 GW of U.S. electric generating capacity of 1010 GW by 2015.
- Compliance costs of single rules in multi-billions.

Converging Dates and Cumulative Impacts

- Cross-State Rule (CAAPR)
- Electric Utility MACT
- Industrial Boiler MACT
- Portland Cement Kiln MACT
- Ozone NAAQS
- Particulate Matter (PM) NAAQS
- Cooling Water Intake Rule (CWIR)
- Coal Combustion Residuals Rule (CCR)
- GHG Regulation—Stationary Sources
- GHG Regulation—Mobile Sources
- First NSPS & NESHAPS for Oil and Gas Sector

Converging Effective Dates

Detailed View: Possible Timeline for Environmental Regulatory Requirements for the Utility Industry



There Is No Environmental Crisis!

- The U.S. has achieved major air quality improvements.
- Since 1970, emissions from EPA criteria pollutants have been reduced by 53% while US GDP increased by 200%.
- Virtually entire U.S. has achieved 4 of 6 NAAQS.
- Since 1997, ozone non-attainment counties have fallen from 113 to 30.
- Since 1988, HAPS have declined 65%.
- Mobile source emissions of PM & NOx down 90% while vmt increased 165%.

“On what principle is it that, when we see nothing but improvement behind us, we are to expect nothing but deterioration before us.”

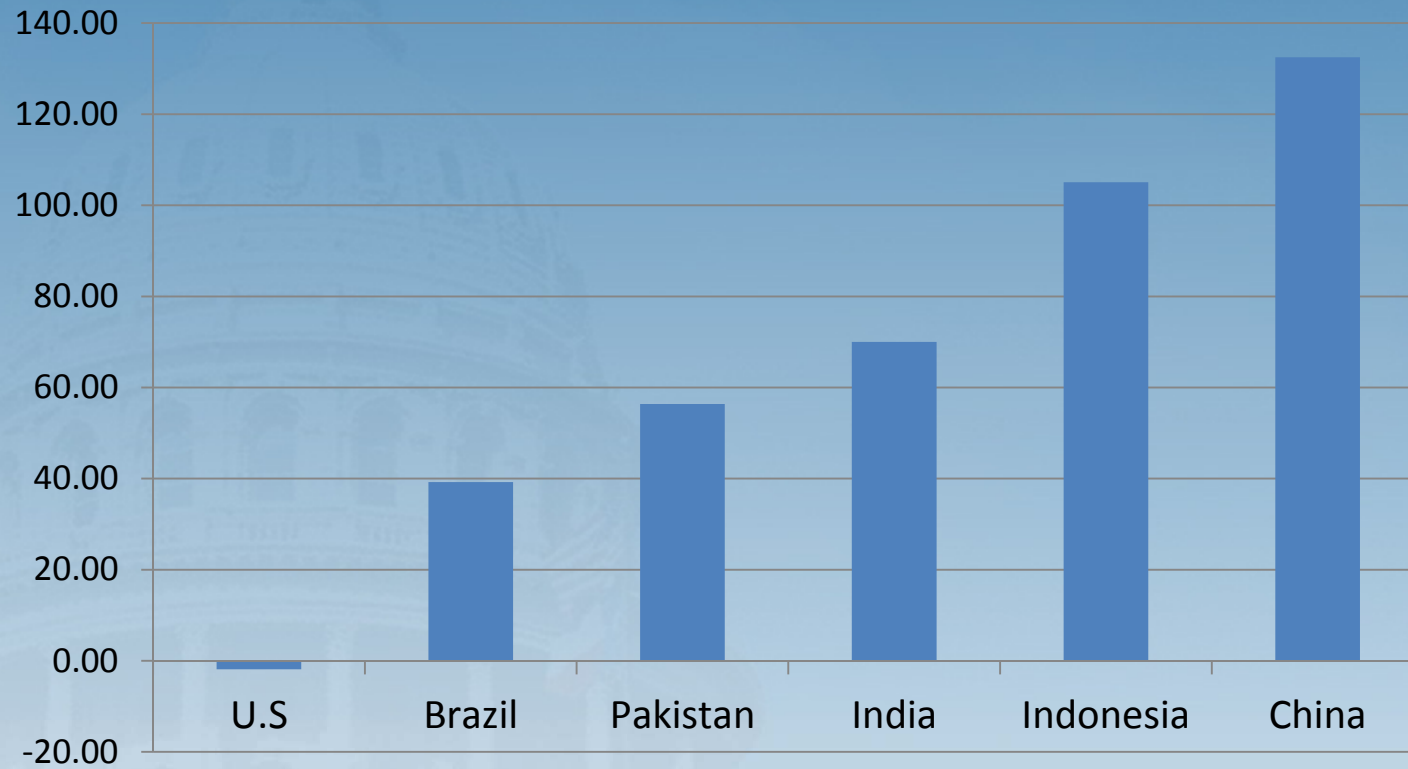
T. B. Macaulay, 1830

Change in National Average Ambient Levels and Emissions 1980-2008

	Ambient	Emissions
Carbon Monoxide (CO)	-79%	-58%
Ozone (O3)	-25%	-49%
Lead (Pb)	-92%	-96%
Nitrogen Dioxide (NO2)	-46%	-40%
Particulates (PM10) 1985-2008	-31%	-46%
Fine Particulates (PM2.5) 1985-2008	-21%	-36%
Sulfur Dioxide (SO2)	-71%	-56%

Source: EPA

Percent Change in CO2 Emissions Per Capita in the Six Most Populous Countries, 1990-2007



Source: International Energy Agency, "CO2 Emissions from Fuel Combustion 2009," <http://www.iea.org/co2highlights/co2highlights.pdf>, 90-91

Houston, Texas

An Amazing Environmental Story

- Home of the world's largest petro-chemical complex, with a Gulf climate optimal for ozone formation. Long vying with Los Angeles for the most ozone-polluted city in the U.S.
- In 2009 and 2010, Houston attained the still legally binding 85 ppb NAAQS for ozone.
- A state accomplishment—in spite of EPA.

Current EPA Science

“EPA science is on the rocks ... if you fail, you become irrelevant and that is kind of a crisis.”

Dr. Thomas Burke, Chairman of NAS Review Panel on EPA's Chemical Risk Assessments

A Polarized Issue

“Don’t go outside. Don’t breathe the air.
It may kill you.”

Lisa Jackson, EPA Administrator
HBO’s “Bill Maher Show,” 10/24/11

Cross-State Air Pollution Rule (CSAPR)

- Effective date January 1, 2012. After 60% reduction of SO₂, CSAPR mandates further 76% reduction by 2014.
- EPA's purpose is to reduce interstate transport of power plant emissions of SO₂ and NO_x viz. O₃ & PM NAAQS .
- But -27 targeted states in violation of 24-hour particulate standards less than 0.5 % of time between 2008-2009.
- EPA's projected cost of compliance: \$7 billion.
- NERC, ERCOT, SPP and state utility regulators predict potential reliability problems as early as 2012.
- AEP and Luminant announce EGU idling and layoffs.

Electric Utility Maximum Achievable Control Technology (MACT)

- Proposed May 2011, MACT limits on mercury (Hg) (91% reduction) and hazardous air pollutants (HAPs) from EGUs.
- EPA estimates compliance costs \$11 billion; Edison Electric Institute estimates \$100 billion cost by 2015 and up to \$200 billion by 2020.
- 1300 electric generating units impacted.
- NERC estimates rule could force retirement of 15 GW of U.S. generating capacity.

Utility MACT Rule

- EPA admits the most expensive rule to date
- Weak, cherry-picked science supporting EPA limits—
sustenance whale blubber population.
- EPA limit 2-3 times stricter than World Health Organization, U.S. Agency for Toxic Substances.
- U.S. EGUs account for 0.5% of airborne mercury
- EPA admits rule will not reduce risk. Hg reduction health benefits only .0004 % of EPA claimed \$140 billion health benefits.

Utility MACT Rule

- Proposed Rule Preamble

...we may determine it is necessary to regulate under section 122 even if we are uncertain whether [the rule]...will address the identified hazards.

...we believe it is reasonable to err on the side of regulation of such highly toxic pollutants in the face of uncertainty.

(Federal Register, Vol. 76, No. 85, 6/3/11, p. 24991)

Industrial Boiler MACT

- As Adopted, rule imposes maximally stringent emission limits and monitoring requirements on HAPs from over 187,000 boilers.
- Best performing businesses claims MACT limits are unachievable.
- United Steel Workers and other unions claim new rule could send 700,000 U.S. jobs overseas.
- 62 Senators & 117 Congressmen urged reconsideration. Court forced adoption. EPA granted reconsideration after adoption.
- Newly proposed standards apply to 5,500 boilers.

Portland Cement Kiln MACT

- Adopted rule binds 165 of 181 Portland cement kilns operating in U.S.
- MACT limits unachievable for many plants.
- Current imports of cement from China (20 millions tons) may more than double (to 48 million tons).
- EPA estimates rule will reduce U.S. cement production by 8-15 percent. 18 plants may close.
- Partial reconsideration.

New Ozone NAAQS

- Unusually set-aside until 2013 by President's request in early September.
- CRS estimates that EPA's new standard (60-70 ppb) would increase number of nonattainment counties from now 85 to 650 of 3,000 U.S. counties.
- At 65 ppb, Brewster County, TX—nonattainment
- EPA estimated cost: \$90 billion.

PM NAAQS

- EPA expected to propose new standard twice as strict as current PM standards.
- Coarse standard now includes country dust.
- New standards could prevent farmers from tilling on certain days. Could require paving or watering country roads in the U.S.
- Public health experts testify PM levels hundreds of times higher indoors.

Coal Combustion Residuals

- Fly ash and other residuals after coal combustion is valuable material in cement, road surfacing and dry wall.
- EPA considering mandating disposal under RCRA as solid waste or hazardous waste.
- Possible compliance costs: \$43 billion if classified solid waste; \$80 billion if classified hazardous waste.

Cooling Water Intake Rule

- Most steam-generating power plants use surface water for cooling.
- New rule to require far costlier closed-cycle cooling towers to prevent fish impingement and entrainment. New fish won't do!
- Could cost \$64 billion, forcing retrofit of 444 plants, affecting 33 percent of U.S. electric generating capacity.
- According to ERCOT Study—Major TX impact on natural gas steam generation EGUs.

GHG Regulation: Stationary Sources

- Six rules rushed over 12 months with an effective date of January 2, 2011.
- EPA concluded that regulating GHG under CAA would be absurd (one permitting universe would increase from 12,000 to 6 million). So, EPA “tailored” (re-wrote) black-letter CAA regulatory thresholds to limit initial regulation to big facilities.
- First phase in eventual reduction of CO₂ emissions by 80 percent, back to the late 1890s.
- NSPS—a tighter fist—delayed; now scheduled 2012.
- Courts may force EPA’s hand.

GHG Regulation: Mobile Sources

- Adopted November 2011 for light duty vehicles.
- As CAFÉ standards w/NHTSA.
- To reduce CO₂ from tailpipes—reduce fuel use; CO₂ is what is left after complete combustion.
- Set as fleet average of 54 mpg by 2025—twice as strict as current.
- For 35 years, Congress set the CAFÉ standards under NHTSA of DOT. Now EPA drives without balancing cost, safety, consumer preference, or technology.
- EPA estimates cost at \$157 billion—only includes engineering cost to automaker.

NSPS and NESHAP for Oil and Gas Sector

- Classic EPA form—rushed, unjustified, needlessly burdensome, flawed, and infeasible.
- One-size-fits-all model for highly diversified sector.
- Dictating how to operate (specific equipment) instead of what is the goal.
- “Compliance Assurance” a multi-layered burden for all sites.
- Back door GHG regulation.
- EPA’s “Reduced Emissions Completion” mandate misconstrues industry process.
- REC to be immediately effective—practicably impossible.

Risk to U.S. Electrical Generating Capacity

- NERC predicts that four rules (not including GHG) jeopardize U.S. electric reliability.
 - 80,000 MW of existing capacity could be lost.
 - Involuntary Retirement of coal-fired EGUs. Coal now provides 50% of net generation and 40% generating capacity.
 - EPA rules—#1 reliability risk in next 5 years.
- Other studies find higher risk: Credit Suisse, M. J. Bradley, Sanford Bernstein and Edison Electric Institute.
- Up to 100 GW of coal-fired EGU capacity at risk.
 - 10 % of total US capacity(1010 GW) from source that provides 50 % of U.S. electricity. Coal is now critical for base-load generation.
 - EPA's reliability cover-up and FERC's abdication -WSJ

Push-back on EPA Train Wreck

- 20-30 states challenge rules in federal court. Hundreds of private entities.
- 10 bills to restrain EPA pass U.S. House.
- REINS Act: Congress must approve major EPA rules. Passed House 12/8/11.
- NAS, et al: EPA Science is “on the rocks.”
- Breaking the [EPA] Logjam: common ground for reform of CAA.

At the Least ...

- Too much, too fast!
- Cumulative impacts—converging dates.
- Weak science is the core of the problem.
- Massive cost.
- Job losses over 100,000 to over 1 million.
- Marginal to non-measurable benefits.
- Inopportune time for a struggling economy.

EPA's Five Year Economic Plan

EPA is using the broad authority of the CAA to drive a federal energy policy repeatedly rejected by the U.S. Congress.

Ironic Coincidence: The Energy Boom and the EPA Train Wreck

- Historic upsurge in U.S. oil and gas production.
- Through risk-taking entrepreneurs' capital-intensive investment for technological innovations in a competitive market.
- Contrast with the public investment model: Solyndra, et al.
- Energy sector holds key to U.S. economic recovery.