



**EPA's GHG and Clean Air Act Regulations:
A Focus on Texas' Economy, Energy Prices, and Jobs**

By

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Summary Overview

Texas stands in the cross-hairs of EPA's unprecedented and heavy-handed regulatory onslaught. For Texas, the nation's leading fossil fuel producer, highest energy user, and economically most successful state, EPA is using a particularly heavy-hand. EPA issuance of an automatically effective Federal Implementation Plan in December 2010 to revoke key state permitting authority was the first such action in EPA history. Texas is now the nation's leading industrial and manufacturing state and thus will be disproportionately impacted by EPA's greenhouse gas (GHG) regulation and the many other major rules to take effect in the next three years. Never in its 40-year history has EPA promulgated—at the same time—so many costly new regulatory dictates. The rules on track to go into effect in the next three years could cost more than \$1 trillion, result in hundreds of thousands of jobs lost and significantly impair electric reliability..

The 10 EPA rules examined in this testimony are: 1) GHG regulation; 2) NAAQS for four criteria pollutants; 3) Ozone NAAQS; 4) PM NAAQS; 5) Clean Air Transport Rule; 6) Cooling Water Intake; 7) Coal Combustion Residuals; 8) Utility Maximum Achievable Control Technology Standards (MACT); 9) Industrial Boiler MACT; and 10) Portland Cement Kiln MACT.

These regulations involve compliance costs of a magnitude never experienced but without rigorous scientific justification or clear health benefits. Many of the rules in question are aimed at electric generation and are particularly threatening to coal-fired generation. The National Electric Reliability Council (NERC) and four other studies conclude that four EPA rules risk the forced retirement in a range of 76-100 gigawatts (GW) of electric capacity by 2015.

The possibility of losing up to 10 percent of the country's current 1,010 GW of electric generating capacity should be a wake-up call. The NERC study estimated that the four EPA rules risk 5,775 MW of existing capacity in Texas. ERCOT projects Texas needs 18,000 MW of additional capacity to avoid shortfalls in 2020. If NERC's projections for ERCOT are accurate, Texas may face the daunting challenge of adding 23,775 MW of electric generation within the ERCOT region by 2020. Events in Japan now make the planned addition of 5,000 MW of nuclear generation in Texas more uncertain. When basic electric reliability is in doubt, the economy suffers. Higher electric rates, power outages, job loss, and the relocation of energy-intensive Texas industries would be unavoidable under EPA's regulatory plan.

Neither this country nor Texas is in the midst of an environmental downturn. In the last two decades, major environmental improvements have been achieved. And Texas is ahead of most states. We sit in Houston, Texas—home of the nation's massive petrochemical complex. Houston achieved the still legally-binding federal ozone standard for the last two years.

Recommendation: Passage of the REINS Act. Strategic amendments to the CAA and other enabling statutes: Set clear, minimum criteria for scientific rigor and risk assessment. Limit EPA's discretionary authority. Re-enforce that states' decision-making authority under the CAA. Coordinate rules in multi-pollutant regulatory programs. Modify citizen lawsuit provisions. Transfer U.S. emission control technologies to developing nations across the world.

The Texas Economic Record

The Texas economy has been out-performing the national economy for over ten years and was less impacted by the recent recession than other states. According to the Bureau of Economic Analysis, the Texas economy grew 70.4 percent from 1999-2009 while the U.S. grew at a rate of 52.4 percent. Over this same period Texas employment grew by 19.5 percent compared to 7.6 percent for the nation as a whole.

Economic Growth Comparisons, 1999-2009

	U.S.	California	Texas
Population Growth	10.0%	10.3%	20.5%
Growth in Nominal GDP	52.4%	56.3%	70.4%
Growth in Personal Income	53.9%	53.0%	76.0%
Growth in Per Capita Income	39.9%	38.7%	46.0%
Total Employment Growth	7.6%	5.6%	19.5%
Growth in Small Business Employment	38.5%	28.2%	48.2%

Source: U.S. Bureau of Economic Analysis

As a recent TPPF study noted, Texas is the energy bread-basket of the U.S.. Texas accounts for more than half of U.S. domestic production of oil and gas. Long the energy giant, Texas has now become the leading industrial and manufacturing state. Texas' manufacturing and energy production amounts to almost 15 percent of total industrial activity in the U.S., measured in dollar terms. Affordable, reliable, abundant energy has driven the growth of the Texas industrial sector. Manufacture of chemicals, plastic, petroleum products, metals, and machinery demands high volumes of energy. The affordability of energy and predictability of EPA rules is key to the economic competitiveness of Texas. (See "Texas Energy and the Energy of Texas," by Dr. Steven Hayward for TPPF).

The Texas Environmental Record

Texas prosperity, cutting-edge science, targeted regulation, innovation, and broad cooperative efforts drove the dramatic improvements in Texas air quality. The Houston region, home of the nation's massive petrochemical complex and once vying with Los Angeles as the most ozone polluted city in the country, has met the federal ozone standard still in effect for the last two years. This colossal accomplishment involved industry's investment of billions of dollars. The state, through the legislature and the Texas Commission on Environmental Quality (TCEQ), used cutting-edge science to develop strict but targeted controls, market mechanisms, and the generous incentives of the Texas Emission Reduction Program.

Texas also has outpaced many other states in the use of advanced pollution control technology at coal-fired power plants. As a result, sulfur dioxide (SO₂) and nitrogen oxide (NO_x) emission rates from power plants in Texas are among the lowest in the nation and continue to fall. SO₂ emissions have fallen 33 percent and NO_x emissions have been reduced by 76 percent since 1990. Since 1970, Texas utilities have spent approximately \$16 billion to retrofit existing plants and to construct new plants with sophisticated emission control technology.

EPA's Regulatory Onslaught

In its 40 year history, EPA has never simultaneously promulgated so many major environmental rules with converging effective dates, massive compliance cost, stringency challenging or beyond existing technological controls, and weak, speculative science. EPA has also asserted more aggressive control over state authorities, particularly in Texas. EPA's invalidation in June 2010 of TCEQ's highly successful Flexible Permit Program stands out as an environmentally counter-productive assertion of federal control. TCEQ's performance-based flexible permit program helped Texas achieve major reduction in ozone levels.

Since creation of the program 16 years ago, TCEQ issued over 120 flexible permits with no formal EPA opposition. Now EPA has not only disapproved the state rules but also informed Flexible Permit holders that they are in violation of federal law. The legal authorization of over a hundred permits held by major Texas industries is now in limbo. EPA's response to date is to allow permit holders to admit violation of federal law in a "voluntary" audit and enforcement decree involving financial contributions to "community organizations." Such regulatory uncertainty freezes business decisions and thus job creation.

Ten Mega-Major New EPA Rule Initiative

Assessment of the current EPA's regulatory impacts on Texas must include consideration of the multiple rules now adopted, proposed or planned. Many of these rules will be adopted in 2011 and will have convergent effective dates beginning in 2012. Full implementation is in the 2013-2016 timeframe with the highest impacts in 2015.

This testimony briefly reviews ten of the major rules with direct impact on the Texas economy, workforce and energy prices. The ten rules covered are:

1. GHG Regulation under the Clean Air;
2. Clean Air Transport Rule (CATR);
3. Power Plant Cooling Water Intake Rule (CWIS);
4. Coal Combustion Residual Rule;
5. Electric Utility Maximum Achievable Control Technology Standards(MACT) for Mercury (Hg) and Hazardous Air Pollutants (HAPs) (Utility MACT Rule);
6. New National Ambient Air Quality Standards for Ozone, Sulfur Oxides, Nitrogen Oxides and Particulate Matter (PM);
7. Ozone NAAQS;

8. Particulate Matter NAAQS;
9. Industrial Boiler MACT; and
10. Portland Cement Kiln MACT.

1. Greenhouse Gas Regulation under the Clean Air Act (CAA)

EPA's GHG initiative consists of six rules rushed over 12 months to an automatic effective date of January 2, 2011. To reach this date, EPA ran roughshod over basic restraints of the Administrative Procedures Act and rewrote the black letter language of the CAA. Because EPA concluded that regulation of GHG under the CAA would be absurd—increasing a current permitting universe of 12,000 to 6 million—EPA “tailored” the law to cover only large sources. EPA didn't bother to estimate the costs involved because the agency deemed its “tailoring” to be a “deregulatory” action. These initial rules are only the first phase of what ultimately would be mandatory regulatory reduction of 80 percent of carbon dioxide—a level not seen since the late 1890s. To decrease push-back from Congress, EPA claims its initial GHG rules will require modest measures to increase energy efficiency based on Best Available Technology but EPA retains the authority to dictate requirements on a case by case basis including forcing fuel switching. EPA will substantially up the regulatory ante with issuance of emission limits known as New Source Performance Standards within the year.

Constrained by the Texas constitution's non-delegation doctrine, Texas is the only state in the country refusing to comply with EPA's automatic effective date of January 2, 2011 for GHG regulation. EPA responded with immediate revocation of the state's permitting authority through imposition of a Federal Implementation Plan (FIP), a commandeering action never before taken by EPA. Permit applications for any expanded or new sources covered by the Tailoring Rule now must apply to TCEQ and also to EPA for the GHG portion of the permit. EPA indicates that even

permits for voluntary installation of major emission control technology for real pollutants may be subject to EPA GHG permits. TCEQ has estimated over 160 construction projects in Texas may trigger EPA's GHG permitting thresholds. Texas and over 20 states are challenging EPA's GHG rules in federal court.

The state of Texas' resolute refusal to acquiesce to EPA's unlawful demands is noble and justified by the Clean Air Act, Administrative Procedures Act, and the Texas and U.S. constitutions. However reluctantly, to comply with EPA's legally rogue process is to accept the exercise of federal power without basic restraints of law.

The American Council of Capital Formation estimates this first phase of EPA GHG regulation will decrease business investment in America in 2011 between \$97-\$290 billion. Much of that capital investment, and the businesses and jobs they would have created, will now move overseas, to places without environmental constraints.

2. Clean Air Transport Rule (CATR)

EPA's purpose is to reduce the interstate transport of power plant emissions of sulfur dioxide and nitrogen oxides to help 32 states attain federal ozone and fine particulate matter standards. Oddly, the targeted states have rarely violated the 24 hour fine particulate standard—less than one-half percent of the time from 2007-2009. EPA's always modest estimate of the cost of compliance is \$7 billion. EPA's always fantastically speculative estimate of monetized health benefits, based on "statistical lives" not lost, is \$111-\$294 billion annually. None of the studies on which EPA relies to make conclusions about the health effects of particulate levels establish a causal connection between PM levels and health effects. EPA's approach is to assume that hospital visits or death resulting from respiratory or cardiological conditions were caused by air quality independent of lifestyle or patient history.

Compliance dates for CATR begin as early as 2012. Originally adopted under the Bush administration as a kind of cap and trade system, the Obama EPA not only tightened the emission caps but also nominally disallowed trading of the previously banked emission credits, rendering the utilities' billion dollar investments worthless. And so goes the market-oriented "trading" part of cap and trade. Many of the large power plants impacted—particularly in Texas—already have installed state of the art emission controls. The new rules' tighter limits may be unfeasible and will yield marginal benefits. Major utilities conclude the rule will force early, abrupt retirement of some coal-fired power plants.

3. Power Plant Cooling Water Intake Structure (CWIS) Rule

Many coal, nuclear, oil and gas steam power plants use cooling systems that withdraw surface water to condense steam, allow cooling in holding ponds and then return the water back to the surface water body. EPA plans to require far costlier closed-cycle technology such as cooling towers for all steam-generating power plants to replace the cooling ponds and other site-specific facilities water now authorized by state agencies. EPA's new one-size-fits-all performance standards may cost an estimated \$64 billion, impact 444 plants (30 percent of the existing U.S. electric generating capacity), and reduce net generation up to 4 percent. The new requirements would force major retrofits of those 444 plants. There are no human health impacts involved. EPA's concern is "impingement" mortality of fish and "entrainment" of their eggs and larvae, reduction of which according to EPA's dictated methods may cost \$64 billion and jeopardize electric reliability.

4. Coal Combustion Residual Rule

This rule covers fly ash, bottom ash, boiler slag and synthetic gypsum—all valuable residuals after coal combustion. EPA proposed a rule June 2010 but has not yet decided whether the fly ash and other residuals after coal-fired generation should continue to be recycled as a commercially valuable material in cement, road surfacing, and dry wall or whether EPA should mandate disposal as a solid or hazardous waste. Estimated compliance costs are approximately \$43 billion if EPA classifies as a solid waste and over \$80 billion as a hazardous waste. These costs do not reflect the lost revenue from sale of the residuals, a recycling that reduces electric rates, and the purchase price of road and building materials. Adoption of this rule is expected in late March 2011.

5. Electric Utility Maximum Achievable Control Technology Standards for Mercury and Hazardous Pollutants (Utility MACT)

Under a Consent Decree to finalize by November 2011, EPA recently proposed a 900 page regulation to impose formidable new emission limits on mercury (Hg) emissions by 91 percent and to control a wide range of metals and gases listed as hazardous air pollutants (HAPs). EPA, however, has not identified many health benefits from this rule alone.

The power sector already has reduced mercury emissions by 40 percent. A full account of the quicksilver issue is beyond this testimony but perhaps some context. Human exposure to mercury typically occurs from consumption of fish tissue in which mercury has accumulated—after airborne elemental (or oxidized) mercury (from natural or man-made sources) enters water bodies and becomes methyl mercury.

Mercury is a naturally occurring metal in the earth's crust that cannot be created or destroyed and is found in organic and inorganic forms. Mercury emissions from U.S. coal-fired power plants account for only about 1 percent of the global atmospheric pool. And 60 percent of the power plant-associated mercury is the non-soluble elemental mercury that enters the global

atmosphere. NASA research has shown that 50 percent of mercury deposited in U.S. waters originates from man-made sources in Asia.

After a major study in 1998 and again in 2005, EPA found that the levels of non-mercury hazardous air pollutants from power plants did “not pose hazards to human health” and thus direct regulation was not warranted. And the studies included projections of HAP levels in 2010 (wrongly) assuming far more coal-fired power plants than in fact came on line. The emission controls now in place to reduce criteria pollutants such as ozone, PM, and SO₂ also reduce mercury and HAPs. The overwhelming majority, approaching 99 percent, of the non-mercury metal HAPs already have or can be replaced. The baghouses and electro-static precipitators, already installed on many EGUs, have a removal efficiency of 99 percent. In the 2004 preamble to EPA’s Clean Air Mercury Rule (CAMR) , EPA concluded that acid gas HAPs do not pose a health risk. EPA’s new Utility MACT rule, however, will directly regulate these HAPs.

The electric power industry estimates that compliance with this questionably justified Utility MACT rule would cost around \$100 billion while EPA estimates \$10 billion. The power industry estimates the combined costs of the other new rules aimed at power plants could reach \$200 billion by 2020. This is almost three times the money invested in all environmental controls during the last 20 years. The rule will impact approximately 1,300 electric generating units and require a wide range of extremely expensive control technologies—if the heightened standards can be met. Coal-fired generation will be the hardest hit. Texas lignite coal which fuels one-third of coal generation in Texas may not be able to meet these standards. NERC conservatively estimates this rule could force premature retirement of 15 GW of U.S. generating capacity.

6. New National Ambient Air Quality Standards (NAAQS) for Criteria Pollutants: Ozone, Sulfur Oxides, Nitrogen Oxides, and Particulate Matter (PM)

Adoption, implementation, and compliance with a new NAAQS is extremely complicated, involving a lengthy technical and administrative process to develop State Implementation Plans for the pollutant. Individual regulatory control measures must be developed for each pollutant even though controls for one pollutant (ozone) yield reductions of several other criteria pollutants. In a report on the inefficient, costly, prolonged SIP process, the National Academy of Science concluded that EPA should develop multi-pollutant programs rather than require SIPs for each pollutant. EPA's plans to revise the NAAQS for four of six criteria pollutants at the same time underline the need for reform of the SIP process. State and local governments spend millions on the development of SIPs to address EPA administrative requirements instead of on effective actions to reduce pollution.

7. New Ozone NAAQS

To date, regulatory programs to meet the federal ozone standards have cost business, state, and local government far more than any other EPA regulatory program. As soon as states approach one standard, EPA strengthens the standard. Each time the goalposts get moved, the scientific justification gets flimsier. In January 2010, EPA reversed the ozone standard adopted less than two years earlier by reinterpreting existing data. According to the Congressional Research Service, EPA's proposal for a standard as low as 60-70 parts per billion (ppb) would increase the number of federally shackled non-attainment counties from 85 currently to as many as 650 of this country's 3,000 counties. A federal ozone standard as low as 60 ppb could mean as many as 12 non-attainment areas in Texas. Yet, the state lacks legal authority to control the remaining emission sources driving ozone formation—mobile sources such as tailpipe exhaust. After imposing stringent controls on stationary industrial sources of ozone emissions, mobile—not industrial—sources now drive ozone formation. Regulation of mobile sources through engine and fuel

standards is a pre-empted federal authority. EPA needs to accept responsibility for the mobile source emissions that are beyond state control.

Unions for Jobs and the Environment commented that the proposed standard “would lead to significant job losses during a period of high unemployment.” EPA estimated implementation costs up to \$90 billion. Many toxicologists and physicians challenge EPA’s justification for an ozone standard lower than the current 85 ppb.

8. New Particulate Matter 2.5 (PM) NAAQS

At enormous expense, EPA may regulate country dust— now called “coarse particulate matter.” Is this one infinitely wealthy country or what! EPA has long regulated PM 10 (particles of 10 microns or less) as a criteria pollutant but exempted country dust until a standard change in 2006 that also included a standard for fine particulate matter (particles of 2.5 microns or less). EPA now may set a new standard twice as strict as the current one. EPA even speaks of having “no-till” days for farmers. It looks like public health will demand paving or watering every country road in the United States.

9. Maximum Achievable Control Technology (MACT) for Industrial Boilers (Utility MACT)

The four inter-related rules under this heading may jeopardize the most job loss among all EPA’s current rulemakings. Adopted in February 2011 with minor cost-saving modifications, the regulation imposes the maximally stringent emission limits and monitoring requirements on a range of potentially hazardous air pollutants from 200,000 boilers and heaters used by industries, manufacturers, mining, refining, as well as commercial boilers in malls, laundries, apartments, restaurants, hotels, hospitals, and universities.

In contrast to emission controls based on Best Available Commercial Technology—or well-established and commercially-used technology—the new EPA rule dictates the Rolls Royce technology supposedly based on the “best performing” units in existence. Yet, many of the businesses identified as the “best performing” claim the emission limits—set at barely detectable levels—are not achievable. The United Steel Workers and other unions claim the rule could send 700,000 current U.S. jobs to other countries. The pulp and paper industry contends that this rule will force closure of 30 mills and end 17,000 U.S. jobs. Letters from 62 Senators and 177 House members urged EPA to reconsider the rule. EPA decided to delay adoption but an environmental plaintiff challenged in court and won.

10. Portland Cement Kiln Maximum Achievable Control Technology (MACT) Standards

Essential to the economy, the U.S. cement industry competes with exported cement from China, which produces cement at far less cost and with far fewer, if any, environmental restraints. Finalized September 2010, EPA’s harsh new dictates will bind 165 of the 181 Portland cement kilns operating in the U.S.. Many in the cement industry argue that no cement kiln in the U.S. has ever actually achieved the level of control EPA now mandates as MACT. The Portland Cement Association finds that up to 18 plants may close, increasing the currently imported 20 million tons of cement from China to 48 million imported tons. Even EPA admits the rule will decrease U.S. cement production by 8-15 percent. This is an example of an EPA regulation that will not only cost enormous numbers of American workers their jobs, but which will actually be worse for the global environment in the long run, by moving industrial production to the countries with minimal to no pollution controls.

Recommendations

Passage of the REINS Act. The cost of regulatory compliance for EPA rules has risen from the several millions to the hundreds of billions. Economic impacts of this magnitude need to be approved by the U.S. Congress and not left to the unelected bureaucrats of EPA.

The CAA and other federal environmental statutes should be strategically amended to establish more rigorous scientific procedures and standards, to require multi-pollutant regulatory coordination, and to reaffirm the CAA's original vision of cooperative federalism. The CAA clearly stipulates that EPA will set national environmental standards and then the states will make the decisions on how to implement and attain the standards. This division of authority has been eroded over the years and in the last 24 months discarded all together. EPA treats Texas as a branch of the federal government. EPA has steadily enlarged the required contents of the State Implementation Plans required for all criteria pollutants such as ozone to include every state rule vaguely related to air quality. EPA does not need approval authority for programs like the Texas Flexible Permit Program. The state is responsible for attaining the federal air quality standards as measured at air quality monitors. What regulatory controls and permitting mechanisms the state utilizes to attain those standards should be fully within the state authority and not subject to EPA micro-management and approval authority.

EPA's regulatory initiative to suppress fossil fuels puts the Texas economy—and the recovering national economy—at great risk. There are no energy sources capable of broad commercial deployment in the foreseeable future that can approach the energy density, sophisticated use, distribution, and affordability of fossil fuel resources. EPA's multi-pronged regulatory assault is too much, too fast and is not sufficiently justified by science.