

Texas Public Policy Foundation

# EPA's Approaching Regulatory Avalanche

*“A Regulatory Spree Unprecedented in U.S. History”*



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# EPA's Approaching Regulatory Avalanche

## "A Regulatory Spree Unprecedented in U.S. History"

by Kathleen Hartnett White

### Executive Summary

The U.S. economy, struggling to find a path back to sustained growth, stands in the cross-hairs of the Environmental Protection Agency's heavy-handed regulatory onslaught. EPA, under the Obama administration, is churning out new rules unprecedented in speed, number, scope, stringency and costs. Yet the new rules have marginal, if indeed measurable at all, health benefits. Nor are they supported by credible science. The National Academy of Science and the EPA's own scientific advisory panels have sharply criticized regulations they see as framed on the basis of weak, manipulated scientific evidence.<sup>1</sup>

For most of its 40-year history, EPA has promulgated regulatory standards in a relatively incremental manner, allowing some balance between environmental goals and economic reality. Huge environmental improvements have followed. Regulation played a role, but market-driven efficiencies and creative technologies drove the dramatic reductions in pollutants. Current EPA Administrator Lisa Jackson, however, irresponsibly enflames public fears with public statements such as "Don't breathe the air. It may kill you."<sup>2</sup> After decades of improvements, air quality is healthier than it has ever been.<sup>3</sup>

Cumulatively, EPA rules scheduled to become effective in the next three years could cost more than \$1 trillion and destroy hundreds of thousands of jobs. Four of the rules, directed at electric generation, threaten the fundamental viability of continued coal-fired generation—now the mainstay of the nation's electric power. The Federal Energy Reliability Commission (FERC), the National Electric Reliability Council (NERC), and multiple studies conclude that these four EPA rules risk the involuntary retirement of over 80 gigawatts (GW) of electric capacity by 2015.<sup>4</sup>

The possibility of losing up to 8 percent of the country's current 1,010 GW of electric generating capacity should be a wake-up call as to the magnitude of EPA's regulatory agenda. On EPA's current schedule, there is not sufficient lead time to replace this amount of the nation's electric power supply.

Power outages, higher electric rates, job losses, sharply regressive impacts on families with low or fixed incomes, and the relocation of U.S. industries to foreign countries are highly likely outcomes under EPA's regulatory plan.

The current EPA is misusing the Clean Air Act (CAA)—enacted to protect human health—to force an anti-fossil fuel energy policy repeatedly rejected by Congress. Under cover of the broad law-like authority delegated to EPA in the CAA, the EPA increasingly acts like a fourth branch of government—one unaccountable to the three constitutional branches.<sup>5</sup> By ironic coincidence, innovative technologies now provide access to historically game-changing stores of domestic fossil fuels.

This paper reviews 10 EPA rules now adopted, proposed, or scheduled for proposal:

1. Cross-State Air Pollution Rule (CSAPR);
2. Electric Utility Maximum Available Control Technology Standards for Hazardous Air Pollutants (Utility MACT);
3. Industrial Boiler MACT;
4. Portland Cement Kiln MACT;
5. Cooling Water Intake Structure Rule (CWIS);
6. Coal Combustion Residuals Rule (CCR);
7. Ozone National Ambient Air Quality Standard (NAAQS);
8. Particulate Matter (PM) NAAQS;
9. Greenhouse Gas (GHG) Regulation of Stationary Sources;
10. GHG Regulation of Mobile Sources.

**RECOMMENDATION:** Reform the CAA to accommodate air quality improvements and to prioritize future challenges, to restore the state's primary authority in air quality management, to restore congressional accountability for major policy decisions now made by EPA, to establish clear, minimal criteria for health-effects science, risk assessment, and regulatory impact analyses, to utilize performance standards, and to establish integrated multi-pollutant strategies.

## EPA's Regulatory Onslaught

Never in its 40-year history has EPA simultaneously promulgated so many major environmental rules characterized by converging effective dates, massive compliance costs, and mandates exceeding existing technological controls. Nor has EPA before relied on such speculative, manipulated science to justify this most aggressive regulatory agenda to date.

EPA also has asserted more control over state authorities, particularly in Texas, than in the past. The Agency's bid to force an automatically effective Federal Implementation Plan on Texas in December 2010 was without precedent in EPA history. Furthermore, the final decision-maker of the EPA, Administrator Lisa Jackson, grossly misleads the public. In comments on HBO, Administrator Jackson said, "We are actually at the point in many areas of this country where on a hot summer day, the best advice you can give is don't go outside. Don't breathe the air. It may kill you."<sup>6</sup> This, while EPA's own website documents remarkable, nationwide improvements in air quality.<sup>7</sup>

An assessment of the current EPA's aggressive regulatory agenda must begin with recognition of the remarkably successful record of air quality improvement in the U.S. As EPA itself documents, over the last 40 years, and particularly over the last 20 years, the quality of U.S. air has dramatically increased.<sup>8</sup>

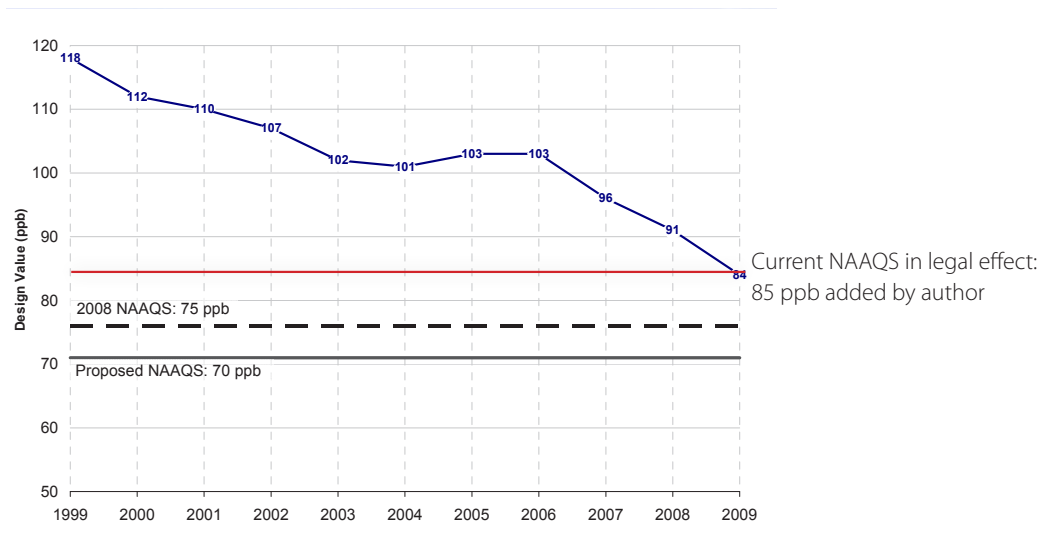
## Change in National Average Ambient Levels and Emissions 1980-2008

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

Source: Environmental Protection Agency

Since 1970, aggregate emissions of the six criteria pollutants regulated under the CAA have decreased 53 percent. This environmental achievement occurred while the U.S. Gross Domestic Product (GDP) increased over 200 percent. Virtually the entire country has attained the NAAQS for four of the six criteria pollutants. Urban areas in some states continue to exceed the NAAQS for ozone and particulate matter but the levels of exceedance and the number of these non-attainment areas is rapidly falling. In 1997, EPA classified 113 metropolitan areas as non-attainment for ozone. That number has fallen to below 30 areas. Once on the list of the most polluted areas, the huge urban region around Houston, Texas—home of the world's largest petro-chemical industrial complex—attained the federal ozone standard in 2009 and 2010.<sup>9</sup>

## Eight-Hour Ozone Design Values for the Houston-Galveston-Brazoria (HGB) Area



Note: 2009 design values based on average of 2007 to 2009 data. Design values are as of November 13, 2009 and are subject to change.

Source: TCEQ Emission Inventory, Air Quality Division, AMDA: 2010

Emissions from cars and trucks, now the predominant source of particulate matter and ozone precursor emissions in most areas have been reduced over 90 percent while vehicles miles traveled increased 165 percent. Ambient concentrations of lead decreased 97 percent between 1976 and 2008, largely a result of eliminating lead in transportation fuels. Hazardous or toxic pollutants have also undergone dramatic reduction. EPA's Toxics Release Inventory documents a 65 percent reduction since 1988. And mercury emissions have declined by 58 percent between 1990 and 2008.

## Ten Mega-Major New EPA Rules

This paper reviews ten of the major rules now promulgated by EPA. The first two rules will be covered in more depth because of the magnitude of their near-term impacts. A federal rule is called “major” when compliance cost estimated by the rulemaking agency is \$100 million or more per year. All of the EPA rules examined in this paper are major rules involving projected annual costs in the billions of dollars and thus worthy of being called “mega-major” rules.

1. Cross-State Air Pollution Rule (CSAPR)
2. Maximum Available Control Technology (MACT) Standards for Mercury and Hazardous Air Pollutants (NESHAP) from Electric Utilities (Utility MACT)
3. MACT for Industrial Boilers
4. MACT for Portland Cement Kilns
5. Coal Combustion Residual Rule (CCR)
6. Cooling Water Intake Structure Rule (CWIS)
7. National Ambient Air Quality Standard (NAAQS) for Ozone
8. NAAQS for Particulate Matter (PM)
9. GHG Regulation for Stationary Sources
10. GHG Regulation for Mobile Sources

Most of the EPA regulations reviewed in this paper were scheduled for adoption by the end of 2011. EPA has nevertheless delayed several rules as the deadlines approached and federal court has stayed implementation of two rules pending the court's full review on the merits. In a highly unusual move, President Obama announced at the White House his request that EPA delay a new federal standard for ozone until 2013. New standards for industrial boilers were adminis-

tratively delayed soon after adoption in response to intense opposition from hundreds of congressmen, industries, and a coalition of labor unions. In late November, 2011, EPA announced delay of the first hard-edged emission limits for GHG until 2012. Environmental groups have challenged the legality of these delays in federal court. On December 9, the D.C. Court of Appeals stayed a portion of the rule for Portland cement kilns. Less than 48 hours before the effective date of January 1, 2012, the same federal court enjoined EPA from implementation of CSAPR on December 30, 2011.

Presently, the GHG rules and the Utility MACT have full legal force. CSAPR and EPA's GHG rules are challenged in the courts by 20-30 states. These 10 rules would have convergent effective dates within the 2013-2016 timeframe, with the highest impacts in 2015. EPA has not considered their duplicative requirements or cumulative impacts.

### 1. Cross-State Air Pollution Rule (CSAPR)

“This rule represents another case where EPA has inadequately rationalized the need for a complex regulatory scheme to solve a non-existent problem,” said the chairman of the Texas Commission on Environmental Quality, Brian Shaw, in testimony before the U.S. House Energy and Commerce Committee.<sup>10</sup> The Cross-State Air Pollution Rule (CSAPR), finalized in July 2011, was to become effective on January 1, 2012—less than six months after adoption, in contrast to the normal timetable of two to three years.<sup>11</sup> Under this brief timetable for compliance, CSAPR's aggressive mandates jeopardize electric reliability and would likely lead to power outages in 2012. NERC recently reiterated its finding that EPA rules pose the greatest threat to electric reliability for the next five years.<sup>12</sup>

Public Utility Commissions and regional entities managing electric grids from 10 states claim that CSAPR likely will increase electric rates by 20 percent while leading to rolling blackouts.<sup>13</sup> CSAPR, in combination with the Utility MACT rule, are the two EPA regulations most threatening to the viability of coal-fired electric generation, which presently provide 50 percent of net electric generation in the U.S. Some 20 states have challenged CSAPR in the First Circuit Court of Appeals, Washington, D.C. The court's last hour stay of this rule on December 30, 2011 has, at least temporarily, eased the risk to electric reliability in 2012.

The objective of CSAPR is to reduce the transport of pollutants from “upwind” locations that cross state lines and affect air quality in “downwind” states. Specifically, the rule mandates steep reductions of sulfur dioxide and/or nitrogen oxides in 27 upwind states deemed by EPA’s models to adversely affect the downwind states’ attainment or maintenance of the federal standards for fine particle matter (PM 2.5) and ozone. EPA considers SO<sub>2</sub> a surrogate for PM. Nitrogen oxides are key precursor emissions in ozone formation. CSAPR has a program to reduce SO<sub>2</sub> and another to reduce NOx. For reasons of brevity, this analysis focuses exclusively on the SO<sub>2</sub>.

Since 1980, emissions of SO<sub>2</sub> have declined by 56 percent nationwide, partly as a result of the 20-year EPA program created by Congress to reduce acid-rain and a previous rule to reduce interstate transport of emissions.<sup>14</sup> In CSAPR, EPA now mandates a 20-46 percent reduction in remaining SO<sub>2</sub> emissions within two years. With SO<sub>2</sub> emissions already reduced by more than half through three decades of work, reductions of 20-46 percent within two years are practically unachievable for many coal-fired power plants.<sup>15</sup>

EPA stresses the environmental urgency of this rule intended to help the downwind states attain the federal standards for PM and ozone. Oddly, however, the downwind states targeted in the rule violated the 24-hour fine PM standard less than one-half percent of the time from 2007-2009.<sup>16</sup> In fact, more than 80 percent of the downwind areas that CSAPR considers as now violating (or in risk of violation) the federal standards for ozone or PM already attain the air quality standards in question. EPA, however, still finds risks and calculates the monetized health benefits at emission levels below the federal standards set to protect public health.

At the proposed stage of the rule, EPA did not find that emissions from Texas reached a threshold to trigger impacts on downwind states. At adoption, EPA decided Texas emissions affect just one monitor in Madison County, Illinois. That monitor, however, is in attainment of the relevant federal standard and is projected to maintain the standard under existing regulation! Furthermore, Texas attains the federal standard for the emission in question. Such is the “non-existent problem” created by unrealistic assumptions in EPA’s model as identified in Chairman Shaw’s testimony.

Originally adopted as the Clean Air Interstate Rule (CAIR) under the Bush administration, the rule was remanded to

EPA by a federal court. The original rule (CAIR) to reduce interstate transport of emissions operated as a kind of cap and trade system. In the new CSAPR rule, 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.

Riddled with data errors and unrealistic worst-case assumptions, EPA’s complex modeling posits air quality problems that are inconsistent with the actual state of air quality as physically measured at monitors. The multiple errors are concealed in the rule’s thousands of pages of numeric codes for individual computer runs of the model. EPA, however, has mandated emission limits with a stringency, and timeline unprecedented in the four decades of the Clean Air Act regulation.

In response to more than 30 petitions for reconsideration of the rule, and to lawsuits from over 20 states to enjoin implementation of CSAPR, EPA proposed to make selective “technical adjustments” to the rule. These adjustments, however, would not carry the full force of law that the adopted language of the rule alone holds. EPA, to date, has refused to reconsider CSAPR or to provide time for a period of new notice and comment for states such as Texas not included in the proposed rule. EPA’s technical adjustments do not offer legal assurance, guarantee the proposed flexibility, correct the many data errors in CSAPR or provide sufficient time for compliance. EPA says in so many words: “try to comply with the rule and if you can’t, come talk to us; we might work something out.” This is a troubling departure from the rule of law.

Many of the large coal-fired power plants impacted by CSAPR have already installed state-of-the-art emission controls. Coal-fired generators have already invested as much as \$95 billion to meet EPA requirements.<sup>17</sup> Since 1970, SO<sub>2</sub>, NOx and PM from coal plants have been reduced by 84 percent per kilowatt-hour.<sup>18</sup>

EPA’s assumption that generators can quickly install additional controls, switch to lower sulfur coals, or build natural gas-fired power plants overnight are wholly unrealistic. On September 12, 2011, Luminant, the largest generator in Texas, announced it would idle 1,200 MW of generating capacity, closing three Texas lignite coal mines, and laying-off 500 employees.<sup>19</sup> On June 9, 2011, American Electric Power announced permanent closure of five coal-fired plants and

reduced operations at eight plants, actions affecting seven states.<sup>20</sup> Similar announcements have been made in other states affected by CSAPR and the Utility MACT. EPA claims that the industries are crying wolf. Public disclosure, however, of plans to idle power plants or reduce generation are typically required by state and regional reliability organizations as well as by the Securities Exchange Commission for merchant generators.

EPA apparently believes that power plants designed to burn one kind of coal can readily switch to another kind. Yet Texas power plants that now burn lignite, a coal native to Texas, cannot merely switch. The plants have first to be redesigned, re-permitted, and re-constructed—a process requiring two to four years. And the supply of lower sulfur coals may be limited by increased demand created by the new rules. EPA assumes that Wyoming's Powder River Basin could increase production of low sulfur coal by 40 percent next year and perhaps 100 percent in 2013. On the basis of this and other unrealistic projections, EPA dismisses any threat to electric reliability.

The regulatory record, however, does not support this position. A recent review of the hundreds of thousands of pages in the rule docket revealed a section in the preamble sent to the Office of Management and Budget on February 19, 2011, that stated: “this regulation may detrimentally affect the reliability of the electric grid.”<sup>21</sup>

This section was missing in the final version of the proposed rule signed on March 16, 2011. And Administrator Jackson persistently states that EPA “doesn't require shutting down of any plant.”<sup>22</sup> Her statement echoes the frequently quoted statements of presidential candidate Barack Obama that his energy policy would not force closure of coal-fired power plants but would make it so expensive to operate the plants that there would be no alternative to closure.<sup>23</sup>

A closer look at EPA's reliability modeling reveals fundamental errors and apparent ignorance of the local and regional constraints in which transmission and the electric grid operate.<sup>24</sup> In modeling impacts in Texas, EPA assumed that the state's 10,000 MW of installed wind capacity would translate to 10,000 MW of actual electric generation. In glaring contrast, the U.S. Department of Energy assigns a generous capacity factor to wind of 25 percent to 30 percent of installed capacity. The Electric Reliability Council

of Texas (ERCOT) derates wind to 8.7 percent of capacity because Texas wind is unpredictable and weak during summer's peak demand. EPA calculated the total generating capacity in Texas at roughly 90,000 MW, whereas ERCOT calculates approximately 72,000 MW.

Unlike EPA, both the Federal Energy Reliability Commission (FERC) and the National Electricity Reliability Council (NERC) have voiced concern that CSAPR, in conjunction with other EPA rules aimed at power plants, could lead to rolling black-outs in many states. FERC initially informed Congress that CSAPR and the other rules, could lead to “40 GW of coal-fired generating capacity likely to retire, with another 41 GW ‘very likely’ to retire.”<sup>25</sup> This total 81 GW at risk amounts to 8 percent of the nation's installed generating capacity and 25 percent of the coal-fired fleet. A NERC study in 2010 reached a comparative, if somewhat more modest, conclusion.<sup>26</sup> In Fall 2011, NERC identified EPA regulation as the greatest threat to electric reliability over the next five years.<sup>27</sup>

The operators of regional electric grids are well placed to evaluate the real-world impacts of EPA's regulatory control of electric generation. Such entities as the Southern Power Pool (SPP) and ERCOT conclude that compliance with CSAPR could cause cascading outages and rolling black-outs within a year. Reliability modeling conducted by SPP found up to 11 GW of electric generation within SPP's footprint would be unavailable. “In those cases, SPP cannot be compliant with NERC's planning standards without placing its generation owners in violation of EPA standards,” wrote SPP.<sup>28</sup>

ERCOT, the operator of Texas' electric grid, which carries 85 percent of the state's electric load, found that under the mandates of CSAPR, ERCOT could incur a reduction in generation capacity of up to 3,000 MW in the spring, 1400 MW in the summer peak load months and 5,000 MW during the fall. “The implementation timeline,” noted the ERCOT study, provides ERCOT an extremely truncated period in which to assess the reliability impacts of the rule and no realistic opportunity to take steps that could even partially mitigate the substantial losses of available operating capacity. “It is clear that had the EPA rules been in effect [during the record hot temperatures in the summer of 2011] Texans would have experienced rolling outages and the risk of massive load curtailment.”<sup>29</sup>

## Where is FERC?

As concern grows that EPA's new rules could jettison 8 to 10 percent of the nation's electric capacity, regional power entities, utility commissions, and state governments have looked to FERC as the federal authority with the primary responsibility of ensuring an adequate, reliable, and accessible supply of electricity.

FERC Chairman Jon Wellinhoff initially concurred with FERC's Office of Electric Reliability that it is "very likely" or "likely" that 8 percent (or 81 gigawatts) would be "involuntarily" retired over the next few years under EPA's new regulations.<sup>30</sup> Chairman Wellinhoff has since discounted this staff assessment as an incomplete, informal analysis. He now contends that FERC is not obliged to analyze the impacts on reliability before EPA's rules are implemented.

Memos from FERC staff obtained by Senator Lisa Murkowski (R-AK), ranking member of the Environment and Public Works Committee, reveal concern among FERC staff about the fundamental flaws in EPA's reliability modeling. Yet Chairman Wellinhoff says FERC will not interfere with EPA's rulemaking but will act to protect reliability if problems occur.<sup>31</sup>

FERC Commissioner Phillip Moeller disagrees with Chairman Wellinhoff's conclusion and held a technical conference on December 9, 2011 about the EPA rules' risk to electric reliability.<sup>32</sup>

EPA estimates the annual cost of compliance with CSAPR at \$7 billion. EPA's speculative estimate of monetized health benefits, based on "statistical lives and work days" not lost, is \$111 billion to \$294 billion annually. EPA's claims that CSAPR annually will prevent 34,000 deaths, 15,000 non-fatal heart attacks and 400,000 cases of aggravated asthma are unsupportable and implausible. There is not one dot of empirical evidence supporting these billion-dollar health benefits and thousands of saved lives. Federal regulation which imposes annual compliance costs of \$7 billion, risks power outages, and threatens thousands of jobs merits justification far more rigorous than EPA now offers.

Congress, in multiple hearings during 2011, took note of EPA's exaggerated claims. EPA arrives at such staggering financial benefits by assuming that emergency room visits (morbidity) or hospital deaths (premature mortality) related to pulmonary and cardiological conditions were *caused* by the current or speculatively predicted future level of the pollutant in question. EPA then assigns a dollar figure to the value of the work days or lives lost and asserts that the regulation will prevent this loss in the future. A death certificate from a hospital noting cause of death as heart failure—without any medical records or patient history—has no meaningful connection to ambient levels of particulate matter or ozone. EPA also double or triple counts the same

hospital visits or deaths by using the same data in cost-benefit analyses for different pollutants.<sup>33</sup>

A former faculty member of the Harvard School of Public Health testified to Congress that indoor levels of PM can be far higher than outdoor levels.<sup>34</sup> And while childhood asthma has sharply increased in recent times, air quality has dramatically increased.<sup>35</sup> The issue has become highly polarized. EPA Administrator Jackson claims that a stricter standard for PM would be more valuable for human health than a cure for cancer! EPA's saved lives are statistical fictions with no accompanying demonstration that PM has ever caused a single death.

Nationally accredited scientific bodies, medical experts and toxicologists increasingly question the credibility of EPA's grandiose declarations about health benefits. The National Academy of Sciences (NAS), the National Research Council, EPA's scientific advisory bodies, and a growing number of experts now harshly criticize EPA's misuse of science. Dr. Thomas Burke of the Bloomberg School of Public Health at John Hopkins University and Chairman of a recent NAS review of EPA's chemical risk assessments stated, "EPA's science is on the rocks ... if you fail, you become irrelevant and that is kind of a crisis."<sup>36</sup>

## 2. *Electric Utility Maximum Achievable Control Technology Standards for Mercury and Hazardous Pollutants (NESHAP) (Utility MACT)*

On December 21, 2011, EPA adopted a more than 1,000 page regulation to reduce mercury (Hg) emissions from Electric Generating Units (EGU's) by 91 percent and to control a wide range of metals and gases listed as hazardous air pollutants (HAPs).<sup>37</sup> The Utility MACT carries far higher costs and risks to the country's electric power supply than the other new EPA rules. The value of this rule to human health is highly questionable. Since 1990, mercury emissions associated with electric generation in the U.S. declined by 60 percent. Emission controls required for the six criteria pollutants under the NAAQS coincidentally reduce emissions of mercury and many hazardous air pollutants to be regulated under the Utility MACT.

EPA acknowledges that the Utility MACT is the agency's most expensive rule to date, admitting at the same time that benefits of controlling mercury in this rule are marginal to non-detectable. The agency finds that direct reduction of mercury accounts for only \$6 million—just 0.004 percent—of EPA's estimated \$140 billion in health benefits.<sup>38</sup> EPA attributes the remaining 99.996 percent of benefits to coincidental reduction of fine particulate matter (PM<sub>2.5</sub>)—already regulated for 15 years as a criteria pollutant under the NAAQS and a questionable surrogate for reducing the health risks associated with mercury.

The most expensive rule in EPA's history not only lacks measurable health benefits but threatens the continued viability of coal—the energy source that now provides 50 percent of net electric generation in the U.S. and thousands of jobs.

EPA openly justifies the rule on the basis of an absolutist version of the precautionary principle. As EPA stated in the preamble to the proposed rule, “[W]e 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 such uncertainty.”<sup>39</sup> (emphasis added)

The Center for Disease Control's (CDC) National Health and Nutrition Examination Survey actively monitors evidence of mercury exposure. The CDC's current study shows that from 1999-2008, blood mercury levels steadily decreased to an average level now well below EPA's extremely conservative safe limit known in toxicology as the “reference dose.”<sup>40</sup> EPA, however, used outdated information from the previous CDC survey in 2000 to exaggerate the current risk to exposure. EPA's statements to the contrary seriously mislead the public.<sup>41</sup> A well-known neurotoxin at certain levels, mercury can retard brain development of children and in vitro.

### Mercury Facts and Figures

Atmospheric deposition of mercury is a global phenomenon to which emissions from U.S. power plants contribute less than 1 percent. Of mercury present in the ambient air covering the U.S., only 0.5 percent derives from coal-fired plants. And natural sources of mercury dwarf man-made sources. Volcanoes, sub-sea vents, geysers, and other sources release 9,000 to 10,000 tons per year. And 60 percent of the mercury associated with U.S. power generation is non-soluble elemental mercury that enters the global atmosphere instead of forming methyl mercury in water bodies. Today coal-fired plants annually emit roughly 30 tons of mercury while Chinese plants annually emit approximately 400 tons.

Human exposure to mercury typically occurs through 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. And although methyl mercury is a well-known neuro-toxin that at certain levels of exposure can affect brain development, the comparatively low levels of mercury emitted from U.S. power plants alone would have virtually no effect on human health in this country.

The stringent emission limits in the Utility MACT are based upon a standard (called a reference dose) of EPA's own devising—a standard of risk that is two to three times more restrictive than those of the leading national and world health organizations. EPA's mercury limits dismiss the toxicological studies on which the World Health Organization, the U.S. Agency for Toxic Substances and Disease Registry, and the U.S. Food and Drug Administration have established a safe limit for mercury.

EPA bases its exceptionally low reference dose on a single study in the Faroe Islands, located in the North Atlantic Ocean, halfway between Iceland and Scotland.<sup>43</sup> The small island population studied eats pilot whale meat and blubber that contains mercury and other toxic chemicals. EPA, then, established a mercury limit that is 10 times lower than the subtle health-effects level found in the Faroe Island study. This diet, and thus this study, is irrelevant as a measure of the exposure risks to the U.S. population.

After major studies in 1998 and 2005, EPA concluded 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 these studies included projections of hazardous pollutant 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, particulate matter, and sulfur dioxide also reduce mercury and HAPs. The baghouses and electrostatic precipitators, already installed on many EGUs, have a removal efficiency of 99 percent.

EPA estimates that compliance with the Utility MACT rule will annually cost approximately \$11 billion. Edison Electric Institute estimates compliance costs approaching \$100 billion. Generators of coal-fired electricity have invested as much as \$95 billion through 2010 to meet current regulation under the CAA.<sup>44</sup> Such investment has decreased emissions of the three major criteria pollutants (sulfur dioxide, nitrogen oxides, and particulate matter) by 84 percent per kilowatt hour.

The costs of the Utility MACT rule extend much farther than the regulated entities. A study by the National Economic Research Association (NERA) found that average

retail electric rates could increase by 12 to 24 percent accompanied by annual job losses of 180,000 between 2013 and 2020.<sup>45</sup> The Utility MACT will impact approximately 1,300 electric generating units and require a wide range of extremely expensive control technologies—if compliance is achievable at some electric generating units. Full compliance with this rule is statutorily required within three years of adoption. This time frame is inadequate for completion of upgrades affecting over 1,000 generating units.

NERC conservatively estimates this rule could force premature retirement of 15 GW of U.S. generating capacity—more than under any of the other train wreck rules.<sup>46</sup> NERA Economic Consulting and others recently estimated that the Utility MACT rule, in conjunction with CSAPR, will force involuntary retirement of up to 48 GW of coal units.<sup>47</sup>

In comments submitted to EPA, the Texas Commission on Environmental Quality (TCEQ) notes that the Utility MACT rule is unlawfully using the CAA as a “mechanism to drive national energy policy.”<sup>48</sup> Under the CAA, emission limits must be technologically feasible. TCEQ concludes that “the proposed rule is not technologically feasible for coal-fired units. Based on the current state of technology, the TCEQ anticipates that no new coal-fired EGU's will be built in the country if the EPA adopts the rule as proposed and that many existing coal-fired EGUs will be shut down.”<sup>49</sup>

### **3. *Maximum Achievable Control Technology (MACT) for Industrial Boilers (Utility MACT)***<sup>50</sup>

The four inter-related rules under this heading could lead to the highest job loss among all EPA's current rulemakings.<sup>51</sup> The original proposed rule covered approximately 200,000 boilers. As adopted in February 2011 with minor cost-saving modifications, the regulation imposed the maximally stringent emission limits and monitoring requirements on a range of potentially hazardous air pollutants from 13,800 boilers and heaters widely used by industries, manufacturers, mining, and refining, as well as from some commercial boilers in malls, laundries, apartments, restaurants, hotels, hospitals, and universities.<sup>52</sup>

In response to opposition from hundreds of congressional members, industry and organized labor, EPA again narrowed the scope of the new rule to cover only the ap-

proximately 13,000 largest boilers. EPA estimates the cost of compliance with the final rule at \$3.8 billion. By contrast, the Council on Industrial Boilers puts the cost at over \$14 billion, with potential loss of 230,000 jobs across 26 sectors.<sup>53</sup>

In contrast with emission controls based on Best Available Commercial Technology—understood as well-established and commercially used technology—the new EPA rule dictates Rolls Royce-like 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.<sup>54</sup>

After final issuance of the rule, pressure from Congress and organized labor increased. EPA accepted a petition for reconsideration of the rule. In early December 2011, EPA proposed a new version of the rule further narrowing the scope of the new standards to the largest 5,500 industrial boilers. EPA estimates the cost at \$2.3 billion.<sup>55</sup>

#### **4. Portland Cement Kiln Maximum Achievable Control Technology (MACT) Standards**

The U.S.' economically essential cement industry competes with low-cost cement from China, produced with far fewer, if any, environmental restraints. Finalized in September 2010, EPA's harsh new dictates would bind 165 of the 181 Portland cement kilns operating in the U.S.<sup>56</sup> 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.<sup>57</sup> Weaknesses in EPA's justification of the Utility MACT equally apply to these MACT standards for industrial boilers and cement kilns.

The Portland Cement Association finds that, under the new rule, up to 18 plants may close, causing Chinese cement imports to increase from a current 20 million tons to 48 million. Even EPA admits the rule will decrease U.S. cement production by 8 to 15 percent.<sup>58</sup> This is an example of an EPA regulation that may not only cost many 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 without strictly enforced emission controls.

On December 9, 2011, the D.C. Circuit Court of Appeals stayed a portion of the new regulation.<sup>59</sup> The cement kiln rules are the first of the cluster of new EPA rules to be reviewed on the merits by the federal courts. The court found EPA's failure to give adequate notice to the cement manufacturers was an “arbitrary and capricious” violation of the Administrative Procedures Act governing federal rulemaking. As the court noted in overturning the cement rule, “reasonable decision-making is not a dispensable part of the administrative machine that can be blithely discarded even in pursuit of a laudable goal. EPA badly needs to be reminded of this fact.”<sup>60</sup>

#### **5. 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 to the river or stream. 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 now authorized by state agencies.<sup>61</sup> EPA's new one-size-fits-all performance standards may cost an estimated \$64 billion, affect 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.<sup>62</sup>

There are no human health impacts involved. Acting under the Clean Water Act, 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. An offer by the electric power industries to replenish fish numbers fell upon deaf ears at EPA. Adoption of this rule is anticipated in the spring of 2012.

#### **6. 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 in June 2010 but has not yet decided whether the fly ash remaining after coal-fired generation should

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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.<sup>63</sup>

Estimated compliance costs in the event of a solid waste classification are about \$43 billion; in the case of a hazardous waste classification, more than \$80 billion. 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. EPA has scheduled adoption of this rule in July 2012.

### 7. New National Ambient Air Quality Standard for Ozone<sup>64</sup>

To date, regulatory obligations to meet the federal ozone standards have affected more states and cost businesses, states, and local governments far more than any other EPA regulatory program. No sooner do states near compliance with one standard than EPA strengthens the standard. Under a White House directive to revisit rules adopted by the George W. Bush administration, EPA proposed a new ozone standard in January 2010, reversing the standard adopted less than two years earlier by reinterpreting existing data.<sup>65</sup>

After multiple delays, EPA sent the final ozone rule package to the Office of Management and Budget (OMB) for final review in the summer of 2011. Adoption of the rule was anticipated in late August 2011. On September 2, 2011, President Obama, against general expectations, asked EPA to withdraw the pending ozone standard until 2013—the year after the presidential election.<sup>66</sup>

EPA later stated that the agency would begin implementation of the 75 parts per billion (ppb) ozone standard adopted in 2008 under the Bush administration that was never

implemented. The legal authority for EPA's withdrawal of the proposed standard after the final rule was sent to OMB is questionable. Environmental organizations now challenge in federal court EPA's withdrawal of the standard.

Many states, business associations, industries and a coalition called 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 the implementation costs of the proposed standard at \$90 billion.<sup>67</sup>

Many toxicologists and physicians challenge EPA's scientific justification for an ozone standard lower than the current 85 ppb.<sup>68</sup> As with the Utility MACT and other new regulations, EPA relies on inconsistent, cherry-picked, and vague epidemiological studies and on a reinterpretation of a clinical trial to justify tightening the ozone standard. Dr. Roger McClellan, former chairman of EPA's Clean Air Scientific Advisory Committee (CASAC), testified before Congress that lowering the standard below 85 ppb “is a policy judgment based on a flawed and inaccurate presentation of the science that should inform policy decision.”<sup>69</sup>

According to the Congressional Research Service, EPA's current proposal for a standard as low as 60-70 ppb would increase the number of federally shackled non-attainment counties from currently 85 to as many as 650 (out of 3,000 American counties).<sup>70</sup> A federal ozone standard as low as 60 ppb could mean as many as 12 non-attainment areas in Texas. Yet states lack the legal authority to control the remaining emissions driving ozone formation from mobile sources such as cars, trucks, and construction equipment. After imposing strict controls on stationary industrial sources of ozone emissions, it is the mobile—not industrial—sources that now predominate. Regulation of mobile sources through engine and fuel standards is a federally preempted power. EPA needs to accept responsibility for the mobile source emissions that are beyond state control.

After EPA adopts a new ozone standard, the agency designates certain counties—and more often entire Metropolitan Statistical Areas (MSAs)—as being in attainment or non-attainment of the standard. A federal ozone *non-attainment* designation shackles economic growth by establishing a ceiling on otherwise natural economic growth

by imposing a cap on ozone precursor emissions. These precursors are nitrogen oxides and volatile organic compounds—emissions resulting from combustion of fossil fuels.

The CAA requires that states develop and implement federally enforceable State Implementation Plans (SIPs) to attain the NAAQS. On pain of sanctions to the states—loss of highway funds, a freeze on road construction, or revocation of state authority through imposition of a Federal Implementation Plan (FIP)—EPA must approve the SIPs. EPA also uses its authority over SIPs to control any state program or regulation remotely connected to air quality. In late December 2009, EPA issued an automatically effective FIP on Texas because the Texas Commission on Environmental Quality refused to regulate GHG under what the state considered were EPA's unlawful terms and timetable. Promulgated as an "Interim Final Rule," without a process for notice and comment as required by the CAA, this automatic FIP is the first in EPA history.<sup>71</sup>

Continually expanded by EPA, the SIP process has become an expensive and administratively formidable burden on states, without much corresponding benefit in air quality. A 2004 study by the National Research Council concluded that the complexity of the SIP process is counter-productive. "The process now mandates extensive amounts of time and resources in a legalistic, often frustrating proposal and review process which focuses primarily on compliance with intermediate process steps. This process probably discourages innovation and experimentation at the state and local levels; overtaxes the limited financial and human resources available ... and draws resources away from the more germane issue of ensuring progress towards the goal of meeting the NAAQS."<sup>72</sup>

### 8. New Particulate Matter 2.5 (PM) NAAQS<sup>73</sup>

EPA may propose a new particulate matter (PM) standard that is twice as strict as the current standard. As the chief toxicologist for the TCEQ testified to the U.S. Congress: "There is no scientific basis for supporting a reduction of the current standard, let alone a two-fold reduction."<sup>74</sup>

EPA used a single study epidemiological study which "suggested" that exposure to PM at levels lower than the current standard had adverse health effects. EPA then assumes that

PM levels below the current standard "caused" the health effects. EPA discounted or entirely disregarded the many other toxicological or clinical studies that found the current standard to be protective of human health.<sup>75</sup>

EPA calculates enormous benefits from stricter PM standards. EPA Administrator Lisa Jackson went so far as to claim that a new PM standard would "be more valuable than a cure for cancer."<sup>76</sup> In the last several years, U.S. deaths attributed to cancer have exceeded 500,000 per year. When asked by Congress to verify such a claim was based, Jackson said the data were not publicly available. Congress has since begun a series of hearings to question EPA about the science on which it relies to establish human health risks and to receive recommendations to reform EPA science. Since 2009, EPA has vastly magnified the level of health risks it correlates with lower and lower levels of pollutants. EPA has begun to calculate risks even below the background levels of pollutants, particularly for fine PM. This approach of assigning risk from ambient exposures way below the safe range established in the NAAQS is not credible.<sup>77</sup>

Significant controversy concerns whether EPA will regulate country dust—now called "coarse particulate matter"—under the new standard. 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). It looks as though public health soon will require the paving or watering every country road in the United States. EPA's rules for Portland Cement and fly ash will make that pavement much more expensive.

### 9. Greenhouse Gas Regulation under the Clean Air Act (CAA)-Stationary Sources

EPA's Endangerment Finding in December 2009 that GHG is harmful to human health and thus within the legal jurisdiction of the CAA triggers an unprecedented expansion of federal regulatory power.<sup>78</sup> Congress has repeatedly declined to pass law authorizing mandatory reduction of GHG.

EPA began regulation of GHG under the CAA last January 2011 after rushing six successive rules over the finish line within a year. To assert regulation of GHG so quickly,

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 14,700 to 6.1 million and adding \$21 billion and 230,000 new employees in administrative costs—EPA “tailored” the applicability of law to narrow the scope.<sup>79</sup> EPA’s Tailoring Rule triggers regulation only of large stationary sources like power plants and heavy industries annually emitting more than 100,000 tons of carbon dioxide equivalent. Current law mandates regulation of sources annually emitting more than 100 tons of traditional pollutants.

EPA didn’t bother to estimate the costs involved because the agency deemed its “tailoring” to be a “deregulatory” action. These initial rules for the largest sources are only “Phase I” of what the relevant science dictates would ultimately be mandatory reduction of 80 to 85 percent of carbon dioxide—a level not seen since the late 1890s. If the federal court overturns EPA’s Tailoring Rule and upholds the Endangerment Finding, EPA will have no choice but to regulate those 6 million sources to include retail stores, hotels, hospitals, and large residences. The House of Representatives passed legislation blocking EPA regulation of GHG under the CAA, but the Senate is not so inclined. At least 25 states have already challenged the regulations in federal court.

Apparently to mute controversy, EPA designed the initial phase of GHG regulation to require relatively modest measures for energy efficiency based on Best Available Technology (BACT). EPA, however, retains the authority to dictate requirements on a case by case basis.<sup>80</sup> This includes forcing a fuel switching from, for example, coal to natural gas. This perspective conflicts with EPA’s 40-year implementation of the CAA’s directive to regulate the specific process selected by the private party according to the BACT.

The current EPA’s regulatory method is tantamount to economic engineering—using CAA authority to protect public health in order to dictate the means of production. Although EPA has begun regulation of GHG with a light hand, it may soon be forced by the courts to up the regulatory ante with specific emission limits known as New Source Performance Standards (NSPS).

EPA’s assertion of regulatory authority over GHG under the CAA generates regulatory uncertainty that is already chilling investment and job creation. The American Council of Capital Formation has estimated that for 2011 this first phase of EPA’s GHG regulation would decrease business investment between \$97 billion and \$290 billion.<sup>81</sup> Much of that capital investment—and the jobs associated with it—will now move to countries without comparable environmental constraints.

## ***10. Green House Gas Emission under the Clean Air Act—Mobile Sources***

In November 2011, EPA issued GHG emission standards for passenger cars and light trucks for model years 2017-2025.<sup>82</sup> The standards are designed as a “corporate average fuel economy (CAFE) standard” or fleet average for each automaker. These emission limits are tantamount to fuel economy standards, because reducing the amount of fuel consumed is the only way to reduce CO<sub>2</sub>—that which remains after complete combustion of the transportation fuel.

Set at an average of 54.5 miles per gallon (mpg) by 2025, EPA’s new tailpipe standard is twice as strict as the 27 mpg standard currently in effect. This new standard follows the first GHG standard issued in May 2010 for model years 2012-2017.

For 35 years, Congress, not a regulatory agency, has legislated specific fuel economy standards through a CAFE program and tasked the National Highway Traffic Safety Administration (NHTSA) with implementing the standard.<sup>83</sup> In 2007, Congress increased the CAFE standard to 35 mpg by 2020. Congress directed NHTSA to balance vehicle safety, consumer demand, and economic impacts with fuel economy in the CAFE program.

EPA issued the new GHG standards for vehicles in conjunction with NHTSA, but EPA apparently dominated the process, giving no consideration to safety, consumer preference, technological limits, or cost.

EPA calculates the cost of the GHG fuel standards at \$157 billion, but this amount covers only the automakers’ investment in developing new technology. This industry, already

struggling to meet the 35 mpg standard, predicts that EPA's new standard will increase the cost of a vehicle by \$3,100 in 2025. Today's lower-priced vehicles may be priced out of existence. And safety will be compromised by the necessity of reducing the mass of a car by 15 to 25 percent.

The Obama administration's confidence that hybrids and electric vehicles will make compliance with a CAFE standard as high as 54.5 mpg readily achievable is increasingly dubious. The sale of hybrid vehicles reached a high point of 3 percent of new sales in 2008 and has been steadily declining. The outlook for increasing sales of electric vehicles is similarly grim.

## Conclusion

Congress should reclaim its constitutional authority to control EPA's implementation of the CAA and return to the states the primary authority to implement the law. Under this now 40-year old statute, EPA keeps finding discretionary latitude to expand regulatory scope and to impose infeasible standards on the basis of weak science, with fewer legitimately measurable benefits for human health. In the CAA and other federal environmental laws, Congress delegated broad law-making authority to EPA.

Under the current administration, EPA is stretching that broad authority to drive an energy policy repeatedly rejected by Congress. Regulatory impacts of the magnitude likely under EPA's agenda—compliance costs in the billions, loss of coal-fired electric generation threatening the sufficiency of the nation's bulk power supply and job loss in the hundreds of thousands—are ultimately policy choices, certainly not purely scientific decisions. The elected members of Congress, not unelected federal employees at EPA, should make these momentous decisions. Federal legislation passed by the U.S. House of Representatives in the fall of 2011 offers a simple but game-changing means of restoring congressional accountability within the federal system. The Regulations from the Executive in Need of Scrutiny Act (REINS Act) requires that a major rule of the executive agencies "shall have no force or effect unless a joint resolution [of approval] is enacted into law."<sup>84</sup>

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The CAA also could be strategically amended to establish more rigorous scientific standards and regulatory impact analyses, to utilize performance standards, to require multi-pollutant regulatory coordination, and to reaffirm the CAA's original federalist structure.<sup>85</sup> The CAA clearly stipulates that EPA will set national environmental standards and that the states will make the decisions on how to implement and attain the standards. This division of authority has eroded over the years and in the last 24 months discarded. EPA treats states as regional offices of the federal government.<sup>86</sup> The states' primary authority to manage air quality needs to be restored and strengthened.

EPA's multi-pronged regulatory assault is too much, too fast and lacks sufficiently robust science and measurable benefits to justify this "regulatory spree unprecedented in U.S. history."<sup>87</sup> ★

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## About the Author

**Kathleen Hartnett White** joined the Texas Public Policy Foundation in January 2008. She is a Distinguished Senior Fellow-in-Residence and Director of the Armstrong Center for Energy & the Environment.

Prior to joining the Foundation, White served a six-year term as Chairman and Commissioner of the Texas Commission on Environmental Quality (TCEQ). With regulatory jurisdiction over air quality, water quality, water rights & utilities, storage and disposal of waste, TCEQ's staff of 3,000, annual budget of over \$600 million, and 16 regional offices make it the second largest environmental regulatory agency in the world after the U.S. Environmental Protection Agency.

Prior to Governor Rick Perry's appointment of White to the TCEQ in 2001, she served as then Governor George Bush appointee to the Texas Water Development Board where she sat until appointed to TCEQ. She also served on the Texas Economic Development Commission and the Environmental Flows Study Commission. She is now serving in her fifth gubernatorial appointment as an officer and director of the Lower Colorado River Authority.

White is also co-owner of White Herefords and a partner with her husband in a 125 year-old ranching operation in Jeff Davis and Presidio counties. She also is Vice-Chairman of the Texas Water Foundation and sits on the board of the Texas Natural Resource Foundation. She recently received the 2007 Texas Water Conservation Association's President's award, the Colorado River Foundation's Friend of the River Award and the Texas Chemical Council's Leadership Award.

A writer and consultant on environmental laws, free market natural resource policy, private property rights, and ranching history, White received her bachelor cum laude and master degrees from Stanford University where for three years she held the Elizabeth Wheeler Lyman Scholarship for an Outstanding Woman in the Humanities. She was also awarded a Danforth National Fellowship for doctoral work at Princeton University in Comparative Religion and there won the Jonathan Edwards Award for Academic Excellence. She also studied law under a Lineberry Foundation Fellowship at Tech University.

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