Capstone Sample Paper

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Should the EPA regulate greenhouse gas emissions?

 When the Environmental Protection Agency announced in July of this year that 27 states would have to start lowering sulfur dioxide and nitrogen oxide emissions by January of next year, several energy industry groups voiced their displeasure, while many environmental groups rejoiced. The Cross-State Air Pollution Rule, as the EPA called this new policy, inadvertently pits the environment against the economy, according to the energy industry groups opposed to it. They believe the rule could wipe out jobs and threaten electrical generation. But to environmental groups like the EPA itself, the rule could clean up the air and produce healthier Americans. As a result of these conflicting arguments, a question arises: Should the EPA regulate greenhouse gas emissions with the Cross-State Air Pollution Rule?

 One of the social problems the EPA is attempting to eradicate with the new rule is the poor health and premature death of thousands of Americans due to air pollution. In its explanation of the rule, the EPA stated that the policy will prevent 400,000 cases of aggravated asthma annually, as well as 19,000 cases of acute bronchitis, by the year 2014 (“Health Benefits” 4). In addition, by lowering the amount of air pollution from sulfur dioxide and nitrogen oxide emissions, it could lower coal plants’ contribution to climate change, which causes altered weather patterns and rising sea levels (*Air Quality* 36). Because air pollution affects so many people and other living organisms, the EPA deems the rule necessary, despite the price tag that some power plant companies claim is attached to implementing the rule’s mandates.

 But the EPA’s solution to this social problem of air pollution creates another social

problem for many people in the energy industry: job loss. One study done for the coal industry concluded that the Cross-State Air Pollution Rule, if implemented as currently written, could cost the energy industry more than 1.4 million job-years (“Proposed” 4). This study, for the American Coalition for Clean Coal Electricity, noted that some power plants will be unable to lower sulfur dioxide and nitrogen oxide levels at the EPA’s mandated rates. As a result, the study argued that these plants may have to close or run at a reduced capacity – lessening the need for certain jobs. With a high unemployment rate and an economic recession, the ACCCE and other industry groups believe the country cannot afford such stringent regulations on greenhouse gas emissions.

 There are other stakeholders on either side of the issue besides the EPA and the ACCCE. Many environmental and liberal advocacy groups have aligned with the EPA because they value human rights and preserving the environment, both of which they believe the new air pollution rule protects. These groups include the Center for American Progress, the Political Economy Research Institute, and the U.S. Climate Action Network. On the opposing side are grid operators and utility companies, such as the North American Electric Reliability Corporation, and lobbyist groups for the energy industry like the Edison Electric Institute. These stakeholders value self-regulation and a free market, as well as cost-efficiency. Consequently, they believe the EPA should not regulate power plants and their emissions.

 Understanding stakeholder arguments is imperative to determining whether the EPA should have implemented the air pollution rule. To grasp some of these arguments, some background information is necessary, including basic familiarity with these concepts: scrubbers, national ambient air quality standards, greenhouse gases, and a cap-and-trade system. The first term, scrubber – or, as scientists call it, flue-gas desulfurization – describes the technology used to remove sulfur dioxide from power plant exhaust. According to a study by the Bipartisan Policy Center, this technology is expensive, but more than half of all coal-fired plants have scrubbers installed in some form (Macedonia et al. 14). Three of these plants near the Grand Canyon were retrofitted with scrubbers in the late 1990s. Another study, published in the Journal of the Air and Waste Management Association, noted that these scrubbers decreased sulfur dioxide emissions by 90 percent – making them, according to the authors of the study, “beneficial” for the power plants to have (Eatough et al. 1675).

 The second term, national ambient air quality standards (NAAQS), describes a plan of action to eliminate or lessen air pollutants the EPA deems endangering to American health: sulfur dioxide, particulate matter (dust), carbon monoxide, ozone, nitrogen oxide, and lead. This plan of action is often a policy, like the Cross-State Air Pollution Rule, that the EPA establishes and the states must enforce (Moren 528).

 Many of the pollutants that the NAAQS must do away with, along with carbon dioxide, are greenhouse gases, another term to know. These gases are released into the atmosphere from the burning of fossil fuels and “trap heat from the sun near the planet’s surface” (Javidkia et al. 813). This heat-trapping characteristic of gases such as sulfur dioxide, nitrogen oxide, and ozone is known as the greenhouse effect, a natural phenomenon that warms the earth for habitation – but is not as normal if the gases come from power plants, according to scientists. With so much fossil-fuel burning in the past century, scientists say, less heat is escaping from the Earth’s atmosphere and causing global climate change (813).

 The final term, cap-and-trade, is a system that the EPA has used in the past to reduce greenhouse gas emissions but that the U.S. Congress has not been able to establish as a law (Hulse and Herszenhorn). These programs existed first in 1999 in the northeast before expanding through much of the Midwest and southeast in 2003 as part of the Nitrogen Oxides Trading Budget (Linn 2). In this system, which “substantially increased the cost of generating electricity for coal plants,” as the energy sector has noted, power plant companies receive permits that allow them to emit a certain amount of polluting gases a year (2). These companies can use or trade them with other companies (1). This kind of trading program will be used to enforce the cross-state rule, according to the EPA.

 For reasons of space and relevance, this paper will not examine the related issues of

alternate energy sources, greenhouse gases other than sulfur dioxide and nitrogen oxide, and the benefits or disadvantages of other environmental policies from the EPA. While related, alternate energy sources are not pertinent to this paper because it is focused in part on the effect of the new air pollution policy on coal power plants, not on any other energy source. Likewise, greenhouse gases other than sulfur dioxide and nitrogen oxide are not relevant to this paper, as these two alone are the ones being regulated by the new air pollution rule. This paper will also not discuss the merits of other EPA regulations, since they apply to other environmental issues like water quality and fuel economy for vehicles. Some of them will be mentioned, however, for the purposes of background and context.

 Providing history and background to the issues and arguments discussed in-depth later in this paper is crucial to understanding them. Environmental issues like air pollution did not enter the forefront of the public consciousness until the 1960s and 70s, when the federal government began to take over environmental policy that had been, “for nearly the first 200 years of the United States’ existence, the domain of local and state governments” (Lindstrom xxi). At this time, the public and politicians alike developed concern over “the balancing of industrial growth and environmental preservation and conservation” (xxxi). This concern resulted partly from the book *Silent Spring*, by biologist Rachel Carson, which warned that chemical weed killers and insecticides were harming the environment and human health (Kevles 85). It also resulted from two environmental disasters in 1969: two oil spills off of the coast of California and a river outside of Cleveland, Ohio, that oil and other pollutants in the water set ablaze (Lindstrom xxxii). Consequently, in 1970 Republican President Richard Nixon created the Environmental Protection Agency, the main federal agency that regulates and protects the environment by establishing policies to improve the quality of air, water, and land in the U.S. (Collin 1). In addition, Nixon signed into law the Clean Air Act and the Clean Water Act that at the time “few people … could argue against” because of the dirty air, the dead rivers, and the layers of dust on automobiles (Trzupek 2). With these policies and an agency that established national standards rather than state-level acts, the “Environmental Decade,” as Nixon dubbed the 70s, began, heralding a movement still ongoing today (Lindstrom xxi).

 Once the Clean Air and Water Acts were launched, the states were in charge of enforcing the national ambient air quality standards (outlined in the definition section of this paper) for each pollutant through state implementation plans. These federal acts are considered by environmentalists and other groups to have been “the greatest factor” in considerably lowering pollution emissions (Lindstrom xxxiv). But many of the states did not meet the NAAAQS by 1975, the deadline the Clean Air Act set, so in 1978 the EPA amended the act to set new deadlines for the states to meet (Collin 16). The agency further amended the acts in 1990 to address problems it had not adequately considered before then: acid rain, ground-level ozone, stratospheric ozone depletion, and air toxins (17). An addition to the acts was the Acid Rain Program, which sought to lower sulfur dioxide and nitrogen oxide emission levels (the greenhouse gases that the Cross-State Air Pollution Rule, the topic of this paper, will regulate) through a cap-and-trade system (Moren 530). The government and environmental groups considered this program successful for reducing the harmful environmental effects of acid rain; the energy sector also commended it for “reducing the economic costs of regulatory compliance” (531).

 EPA administrators attributed this overall success to the freedom the program provided to each power plant operator, who could decide how to comply with the emissions cap with little government involvement. Each plant could either use its permits to release sulfur dioxide into the air, buy more permits to increase the amount of sulfur dioxide released, or sell its permits and reduce emissions by investing in scrubbers. Moreover, the plant’s annual sulfur dioxide emissions could not surpass its permits, which only the EPA could create based on emission rates and prior level of fuel use (Moren 530). This government program was just one of several that the EPA created to reverse the negative effects of years of industry on the environment (531).

 By this point, however, environmental policy had lost political popularity, starting with Republican President Ronald Reagan, whose 1981 administration deemed these policies too costly and installed conservative officials into the positions of administrator of the EPA and director of the Department of the Interior, thereby reversing much of the efforts the agency had made in the 70s. Though these officials were forced to resign only two years into their positions, they nonetheless set into motion two opposing effects as a result of their influence: the increased use of the argument “that economic costs could trump environmental policymaking,” as well as a marked division between environmental groups and workers, businesses, and industries as a whole whose interests Reagan aimed to protect in blocking environmental reform (Lindstrom xxxiii). Because such reform, often relying on government regulation of industry, did not threaten the jobs of many of the white and middle-class Americans campaigning for the reform, a division was sparked between them and the workers who did have to worry about the loss of their jobs – the same division that exists today (Kevles 86).

 Throughout the 1990s, however, with the 1988 election of a more environmentally sympathetic Republican President George H.W. Bush (who signed the revised 1990 Clean Air and Water Acts) and the 1991 election of Democratic President Bill Clinton, there was a distinct shift “back to a conservation focus within environmental policy” (Lindstrom xxxiv). Under Clinton in particular, the EPA was able to disregard the protests from the energy industry and continued to pass sweeping pollution policies: the end of sewage dumping into the ocean in 1992, the regulation of petroleum refineries in 1995, and the phase-out of leaded gasoline in 1996 (Collin 331, 340, 341). The same year that the EPA required refineries to install pollution control technology, the agency also expanded the acid rain trading program to include “all industrial fossil fuel-burning sources” and not just coal-fired power plants (340). The agency justified this change by pointing out that so far, this emissions trading had saved the industry and consumers $2 billion per year. And it argued that the 1990 Clean Air Act amendment goals of reducing 1980 sulfur dioxide emission 50 percent by 2010 required a 10 million-ton yearly decrease – meaning that the EPA believed the expanded program was necessary (341).

 This program underwent more changes in 2005, when it branched into two separate ones with the EPA’s creation of the Clean Air Transport Rule. Its constant incarnations resulted from the states’ continual failure to reach their NAAQS for the sulfur dioxide and nitrogen oxide pollutants – which, according to the EPA, kept happening because air pollution drifts from one state to another (Moren 536). This pollution, in the form of ground-level ozone or smog, “literally cook[s] in the sky” and travels indiscriminately across county and states lines, at the mercy of the wind (Collin 17). To fix this problem, the EPA mandated 27 states to participate, again, in a cap-and-trade program for sulfur dioxide and nitrogen oxide reductions. Most of these 27 states, involved in a 1996 program focused on lowering nitrogen oxide particles, had violated a provision of the amended 1990 Clean Air Act. Known as the Good Neighbor Rule, this provision required the states to eliminate emissions significantly contributing to dirty air in other states downwind from them. Since 27 states had not, they faced gradual deadlines, with the first phase of reductions not starting until 2009 for nitrogen oxide emissions and 2010 for sulfur dioxide emissions (Moren 536). By this point, however, the states and the electric companies were starting to fight back – and winning court challenges.

 The EPA had not previously clashed in the judicial system over greenhouse gas limits. Then, North Carolina, along with several utility companies and a city in Texas, challenged the interstate rule with the chief argument that it did not guarantee a decrease in the pollution emissions traveling to downwind states (Moren 538). In the end, in the case *North Carolina v. EPA* the D.C. circuit of the United States Court of Appeals found for the plaintiffs, ruling that the Clean Air Interstate Rule would not effectively stop air pollution from traveling state to state. In fact, the D.C. Circuit noted, the rule was so “fundamentally flawed” that “no amount of tinkering” could make it suitable (539). This dismissal of the first policy to regulate greenhouse gas movement was the catalyst that sparked the EPA’s determination to create an interstate air pollution policy that worked – the Cross-State Air Pollution Rule, established earlier this year. Some Democratic members of Congress, however, did not believe the EPA could not pass an effective rule amid the EPA’s sliding popularity during Republican President George W. Bush’s second term. Though these legislators tried to pass pollution-regulating laws of their own in 2008 and 2009, none have been successful (541).

 In addition to the cross-state rule, there are other policies combating air pollution that states have created. Among these are cap-in-trade systems in three regions in the United States. One, the Regional Greenhouse Gas Initiative, has been in place along the East Coast since 2009; the others – the Western Climate Initiative and the Midwestern Greenhouse Gas Accord – are works-in-progress (Trzupek 37). Plus, the EPA has established other policies that deal with lowering harmful pollutants, such as the new Corporate Average Fuel Economy for vehicle emissions (38). These policies occurred once Democrat Barack Obama became president in 2009 and welcomed environmental reform, clearing the way for the House of Representatives to pass the American Clean Energy and Security Act of 2009 “with little Republican support” (Lindstrom xxxv). By passing this bill, House legislators intended to “cut carbon emissions by 17 percent from 2005 levels by 2020 and by over 80 percent by 2050” (xxxv). However, the bill died in the Senate as one of several environmental policies increasingly under siege by Republicans – among them the Cross-State Air Pollution Rule, as this paper will later discuss.

 Now that this paper has covered the history of the issues and arguments about the cross-state rule, it will go into more detail about the issues and arguments by first outlining the stakeholders supporting the cross-state rule. These groups include the EPA, as well as liberal advocacy groups such as the Center for American Progress. This think tank backs policies that promote progressives values, like human rights and freedoms and consumer protection. Just like the Political Economy Research Institute, a research organization affiliated with the University of Massachusetts-Amherst, the center has refuted claims from the energy industry stating that jobs will vanish due to the cross-state rule. In addition, many environmental groups and think tanks claiming bipartisanship have released studies with results favoring the rule. One such think tank, the Bipartisan Policy Center, founded by two former Democratic and two former Republican senators, found that the rule will not knock out enough power in the states to earn the ire of grid operators in Texas and the northeast. These kinds of research institutes value political parties working together to form policies on issues like healthcare, energy, and homeland security. And environmental groups compiling research from these think tanks to draw similar conclusions are the Environmental Defense Fund and the U.S. Climate Action Network. These groups value environmental stewardship and sustainability, so they typically applaud policies the EPA establishes. One last group on the EPA’s side are the Democrats in the House of Representatives and the Senate, who have tried to vote against legislation postponing the cross-state rule and other environmental policies. All of the values listed in this paragraph are, for the most part, liberal – meaning many of these proponents, with the exception of the Bipartisan Policy Center, lean to the left politically.

 The first argument these stakeholders make for the Cross-State Air Pollution Rule (and, in fact, the very reason the rule was created) is human health: the lower the levels of air pollution, the lower the rates of respiratory illnesses, according to the Environmental Protection Agency. The agency asserts that the rule, which goes into effect January 2012, can prevent thousands of premature deaths from respiratory diseases by limiting exposure to the chemical compounds of sulfur dioxide and nitrogen oxide. These chemical compounds, the EPA’s report states, can be dangerous to human health because they react with other compounds in the air to form small particles (“Health Benefits” 3). These particles, as another report from a group of chemical engineers corroborates, are so miniscule that they can “bypass the body’s natural defenses and penetrate some of the most fragile parts of the lung,” causing or worsening respiratory diseases such as emphysema (Javidkia et al. 814). And high concentrations of sulfur dioxide in particular can cause bronchial asthma, according to a report from a group of chemists (Valavanidis et al. 342). The report from the chemical engineers also cited two studies from the American Cancer Society that linked long-term exposure to these particles to premature death, as well as heart failure and cardiac arrest. But with the cross-state rule, which intends to reduce current sulfur dioxide emissions yearly by 62 percent and current nitrogen oxide emissions yearly by 11 percent, the EPA believes that 13,000 to 40,000 deaths and 15,000 non-fatal heart attacks will be averted (“Projected SO2” 250; “Health Benefits” 4). Additionally, the EPA believes 19,000 cases of bronchitis and 400,000 cases of asthma will be avoided, 1.8 days of missed school or work will be reclaimed, and 18,300 hospital and emergency room visits will not occur (4). Because of this healthy public, the EPA further believes that the rule will save billions of dollars, especially in Pennsylvania and Michigan, two of the more heavily polluted states. The rule may also cost the energy industry up to $800 million yearly by 2014, the year when the rule states that the 27 affected states must lower 71 percent of 2005 sulfur dioxide levels and 52 percent of 2005 nitrogen oxide levels. However, the EPA argues that it will, in the end, “yield benefits in 2014 of $120 billion to $280 billion” – far outweighing, according to the agency, the price of implementation (2).

 Another argument stakeholders make in favor of the Cross-State Air Pollution rule is that it can prevent some of the effects of climate change by limiting the amount of chemical compounds that can form greenhouse gases. A U.S. Department of Energy analysis determined that these limits are necessary because the demand for electrical power will only go up over time, increasing greenhouse gas totals. The analysis noted that this demand for energy may increase 40 percent over the next 20 years, and much of it can be alleviated by the burning of fossil fuels, the prime producers of greenhouse gases and thus climate change (*Air Quality* 29). Notably, the main greenhouse gas, the one that scientists say contributes the most to climate change, is carbon dioxide – which the cross-state rule is not regulating. One recently published study in *Nature*, however, concluded that reducing emissions from gases other than carbon dioxide is still “a relatively quick way of contributing” to the goal of mitigating the “warming influence of greenhouse gases” (Montzka et al. 43). One such non-carbon dioxide gas, as stated by the study, is nitrogen oxide. Scientists believe that if the levels of this compound can decrease, then the levels of other greenhouse gases, such as methane, can also decrease because of how highly reactive nitrogen oxide is. Therefore, the study noted, the less of it that exists to react with other compounds, the less the other compounds will form greenhouse gases (47). Moreover, because of nitrogen oxide’s relationship to carbon dioxide, the study concluded that tempering nitrogen oxide’s numbers could also result in an atmosphere more capable of sequestering carbon, which would slow down warming caused by climate change. This warming, scientists have found, has already caused a loss of glacier ice, an accelerated rise of sea levels, and longer and more intense heat waves. All of these effects, as well as many more, could grow worse over time, according to the scientists studying climate change (*Hidden Costs* 261). As a result, environmental groups and other proponents of the cross-state rule support it.

 A final argument that proponents give for this rule is that it could create thousands of jobs, according to a study by the Political Economy Research Institute (PERI), a stakeholder. In the study, PERI stated that these jobs could arrive if power plant companies decide to follow the requirements of the rule and lower their greenhouse gas emissions, as lowering emissions requires one of three options. PERI postulated that these options include installing pollution controls, like scrubbers, to limit pollution, pursuing cleaner types of energy that do not require pollution caps, or shutting down older plants that expel too much pollution and cost too much to retrofit with controls (Heintz et al. 2) Two of these options could create enough jobs to offset the other option that loses them, PERI concluded (12). The institute, in the study, examined the costs of the cross-state rule and another proposed earlier this year, the Mercury and Air Toxics Standards, that will regulate mercury, arsenic, and acid gases (1). And what it ultimately argued is that the power sector, between 2010 and 2015, may invest nearly $200 billion to make changes to its power plants – almost $94 billion on scrubbers and other technology and more than $100 billion on producing new generation capacity totaling 68,000 megawatts (2). As such, PERI stated that the industry could require manpower, an estimated 1.46 million jobs (or about 291, 577 year-round jobs for each of the five years of employment) for engineers, project managers, electricians, pipefitters, iron workers, boilermakers and millwrights. In the study, PERI also analyzed each state’s spending on pollution controls and new types of energy and suggested that the more a state spends on these, the more jobs will be available in that state to install and maintain the controls and build wind turbines, solar panels, and natural gas pipelines (14). So the institute ultimately determined that the cross-state rule could present jobs for many people in states like Illinois, Virginia, Tennessee, North Carolina, and Ohio.

 Because of these and other arguments in favor of it, supporters of the Cross-State Air Pollution Rule have plans of action to ensure that it remains a policy in the future. In particular, they have relied on the media to express the benefits of the rule. For example, environmental groups like the Environmental Defense Fund have sent out press releases to news outlets. They have also used the opinion section of newspapers like the *Austin American-Statesman* to advance their views. One column that appeared in the October 7 issue of the *American-Statesman* was by Jim Marston, regional director of the EDF. In it, Marston noted that most utilities across the country have no problems complying with the cross-state rule, except for two in Texas that, along with Texas legislators, he wryly stated “are doing their best to campaign for Best Picture” in the months-away Academy Awards (Marston). His column reflects what the EDF and other proponents wish to do: gain more supporters so that the rule is effective and enforced.

 But there are also detractors of the Cross-State Air Pollution Rule who would prefer if it was struck down by the courts, like its predecessor was, or at least postponed. These stakeholders include grid operators such as the North American Electric Reliability Corporation, the Electric Reliability Council of Texas, and the PJM Interconnection, who have all stated that the rule could close too many power plants for the grids to sustain enough power. These opponents also comprise utility companies, like Luminant in Texas and the Indiana Utility Regulatory Commission, for the same reason and the additional reason that the rule may increase the unemployment rate. Plus, conservative advocacy groups like the Texas Public Policy Foundation and the Institute for Energy Research, as well as industry lobbyist groups like the Edison Electric Institute and the American Coalition for Clean Coal Energy (ACCCE), are against the rule for its high cost of compliance. A final set of stakeholders are the Republican legislators who have worked to pass laws stalling the cross-state rule and cutting the budget of the EPA. In general, these groups value fiscal conservative ideals: self-regulation and a free market, as well as cost-efficiency and profitability. These values are in opposition to the cross-state rule because this rule regulates the energy industry with set pollution caps and increases costs for companies in the industry.

 One of the chief arguments these stakeholders present to resist the Cross-State Air Pollution Rule is that it could force millions of workers out of their jobs, according to a study sponsored by the ACCCE and done by the National Economic Research Associates (NERA), an independent economic analysis firm. In this study, NERA used data provided by the EPA to make its ultimate point: that this rule could be one of the costliest environmental policies the EPA has ever implemented. Due to the cross-state rule’s requirements – a 75 percent and 54 percent reduction in sulfur dioxide and nitrogen oxide emissions by 2014 from all coal-fired power plants – NERA stated that many of the power plants affected will have to close and fire their workers. With less electricity being generated, energy prices for consumers may also go up by almost 24 percent by 2020 (“Proposed” 3). NERA drew these conclusions in the study by comparing the price of compliance (how much each pollution control technology costs, how much lower emissions will run, and how much of a profit each utility company will receive) to the current prices without such strict regulation. For example, for every 500 megawatts of electric capacity from a power plant with a sulfur dioxide scrubber, NERA calculated that the utility company owning that plant may receive $538 less than it would have gotten from one without an expensive scrubber (10). And 500 megawatts is only enough energy to power 250,000 homes, so ultimately, NERA concluded that each plant could lose a total of $17.8 billion a year. In some cases, according to NERA, this cost could outweigh the profits made from certain plants, the old ones that do not generate as many megawatts of energy. So these plants, NERA argued, may shut down and leave a total of about 1.4 million people out of work (16). Because of these costs and job losses, the cross-state rule could leave “too severe an impact” on the energy sector, as Steve Miller, president and CEO of ACCCE, said in response to the study (1).

 While the authors of the NERA study examined job losses as a result of mothballed plants, the authors of other studies have examined lost electric generation as a result of these closed plants – creating another argument against the cross-state rule for its opponents. Because coal in 2010 “accounted for 41 percent of installed capacity and provided 49 percent of total generation,” stakeholders like the PJM Interconnection, a grid operator, state that estimating which and how many coal plants may retire helps to provide the least amount of cost to complying with the cross-state rule (PJM 1). One such estimation comes from a study done by the Institute of Electric Research (IER), an opponent to the rule that found that the projected retirements of some power plants due to the rule and another planned one, the Mercury

 Air Toxics Standards mentioned on page 13 of this paper, may be “almost twice as high as the EPA predicted” (“EPA’s Latest Assault” 1). In this study, IER provides a series of statistics about the amount of plants set to close from the regulation, including several states that may be impacted the most. Two of these states, IER suggested, are Ohio and West Virginia, which could lose 8.6 and 14 percent, respectively, of their total “state generating capacity,” and Indiana, Tennessee, Missouri and Wisconsin may also deal with depleted energy supplies (2). Overall, IER concluded in its study that the country may drop 10 percent of its electric capacity from coal as coal plants shut down in response to the cross-state and air toxics rules. Another stakeholder, a grid operator called the North American Electric Reliability Corporation, or NERC, found in its own study that this 10 percent capacity loss actually may come from the cross-state rule alone and not the combined policies (Cauley 5).

 Despite these discrepancies, all opponents of the rule agree that such high drops in supply could bode ill for the grid during times of even mild demand. One such opponent is the Electric Reliability Council of Texas (ERCOT), which manages the electric grid for the state and published a study in September. In this study, ERCOT suggested that “even in the best case scenario,” there may be “a reduction in available operating capacity of 1,200 to 1,400 megawatts” because of the cross-state rule (“Impacts” 5). If this reduction had occurred this year, rather than next, ERCOT stated in the conclusion of its study that rotating outages would have taken place in August, when excessive energy use strained the grid almost to the breaking point but did not cause blackouts (5). The grid operator arrived at this conclusion after analyzing the compliance plans of each of the owners of coal-fired plants in the state and the possible options for compliance: scrubbers, use of less sulfurous coal, and reductions in energy output through either running power plants at minimum capacity during non-peak hours or through extended plant outages. Because Texas uses a distinct kind of coal, called lignite, that releases more sulfur dioxide into the atmosphere than typical coal, ERCOT noted that the state would have to import Power River Basin coal from Wyoming but speculated that demand for it may be too high for the state to rely on it. ERCOT also noted that installing scrubbers to certain plants could result in a decrease of energy output by about one to two percent (3). As a result, ERCOT determined that the state could lose as much as “6,000 megawatts of capacity during the fall months of October, November, and possibly December” (5). Another opponent of the cross-state rule from Texas, the Texas Public Policy Foundation, reported that this possible loss of electric capacity could occur because the EPA “uses obsolete emissions data from 2005” that states Texas emits 19,000 tons of nitrogen oxide emissions that have been since eliminated (White 2).

 Another argument opponents pose against the cross-state rule is that the cap-and-trade system used to decrease pollution emissions is flawed. One opponent against the EPA’s trading program for sulfur dioxide and nitrogen oxide output is the Environmental Energy Alliance, a group of environmental and engineering experts based in New York whose director, Roger Caiazza, wrote an analysis of the program stating that it is “a direct control approach masquerading as cap-and-trade” (Caiazza). In this analysis, Caiazza noted that the annual sulfur dioxide cap is set at 3,385,929 tons, compared to the 2008 to 2010 emission levels of 5,216,931 tons and that the annual nitrogen oxide cap is set at 1,245,869 tons, compared to the 2008 to 2010 emission levels of 1,595,756 tons. Because power plants must meet these “stringent” caps starting January 2012 – a date that Caiazza said does not phase in these reductions – this trading program is different from past ones, such as the one for the Acid Rain Program, which gradually set the caps (Caiazza). Gradually setting the caps as past programs have done, Caiazza argued, is more effective; so is providing “provisions to ease into the program,” such as allowing the use of permits from previous programs (Caiazza). Both of these phase-in options, according to Caiazza, help power plants meet the pollution caps in time, without fear of a penalty, guaranteeing that pollution is actually reduced. He noted that this penalty – a fine of $37,500 for each ton of unpermitted pollution emitted after the compliance date, as well as the release of a permit back to the EPA – is also too “severe,” especially given the likelihood that companies may not lower plant pollution emissions by the 2014 deadline, and the severity may force plants to shut down. Furthermore, Caiazza postulated that the trading program could run out of available permits. He made this assertion by comparing the projected margin between allowances (the word he used in place of “permits”) and emissions and concluded that this margin could be too “tight” for the supply of permits the EPA is releasing. These myriad problems that Caiazza sees with the cross-state rule’s cap-and-trade system are large enough in his eyes to oppose the rule.

 To guarantee that the cross-state rule goes the way of the remanded Clean Air Interstate Rule, these opposing stakeholders have many plans of action. Already, nine of the affected 27 states have sued the EPA for their inclusion in the policy: Texas, Kansas, Nebraska, Alabama, Florida, Oklahoma, South Carolina, Virginia and, most recently, Georgia (“Ga. AG sues”). In addition, conservative lawmakers in the House have passed “legislation to prevent or delay EPA action,” and more of these laws are, according to the Congressional Research Service, considered “likely” (McCarthy and Copeland 37). One example of such a bill, passed through the House in September, aims to oversee EPA regulations by establishing a panel of representatives from other federal agencies that will report to Congress by August 2012 on all the economic impacts of several EPA policies, including the cross-state rule (38). Tacked onto this law is an amendment that will suspend this and other upcoming rules from the EPA (Weiss and Boss). In addition, the House Appropriations Committee voted in July to give $1.5 billion less to the EPA’s budget of $7.1 billion next year, an 18 percent reduction (Weiss and Boss). These are the main ways the opponents of the Cross-State Air Pollution Rule have reacted: through legal action.

 Having completed the presentation of the arguments of supporters and opponents of the Cross-State Air Pollution Rule, this paper will now analyze each issue to determine the strengths and weaknesses of each side’s arguments. One argument proponents make about the cross-state rule is that it will help to clean the air of harmful pollution from power plants and thus benefit human health. An argument opponents make is that lowering these emissions so drastically, as they claim the cross-state rule will do, could shut down too many power plants and lessen the amount of power available for the electric grids across the northeast, Midwest, and parts of the south. Proponents make a stronger case due in part to the comprehensive 408-page report the Environmental Protection Agency wrote about the environmental, economic, and social components and consequences of the cross-state rule. In this report, the EPA cited a total of 331 sources, ranging from other government agencies to studies published in peer-reviewed scholarly articles, and 237 of these sources related to studies about the health and wildlife benefits of reducing greenhouse gas emissions from power plants – for instance, that breathing in sulfur dioxide can lead to respiratory illnesses and other health problems like heart attacks. With such a high number of credible sources, proponents of the cross-state rule powerfully argue that air pollution contributes to health problems and that the rule will reduce these health problems by lowering air pollution.

 In contrast, the studies that opponents reference less capably prove their argument that the cross-state rule would close down plants and cut down on electric power, in part because they cite fewer sources. These studies relied on analysis of the EPA’s report about the rule, news stories and press releases, and filings with public utility commissions about which power plants “will or [are] set to close” (“EPA’s Latest Assault” 17). Though the EPA’s report and the filings with public utility commissions (which regulate the energy industry in each state and must have updated information on which power plants are active) are sound sources, at least one of the studies, from the Institute of Electric Research, comes across as biased in favor of little to no government regulation. The institute called its study “EPA’s Latest Assault on Coal” and includes, below the title, quotes from President Barack Obama, saying about his “attack” on coal that “there’s more than one way to skin a cat.” As a result, the study loses its credibility as a reliable source about plant closures. Though there may be plants shutting down in the future due to the cross-state rule, especially in Texas, opponents do not successfully prove the detrimental effects of these plants shutting down.

 Both sides pose arguments about employment effects of the cross-state rule. Proponents of the cross-state rule claim that it could create almost 300,000 jobs in the energy sector; on the other hand, opponents claim that the rule could instead force about 1.4 million workers out of their jobs. Proponents again make the stronger case by presenting a more realistic and credible number of jobs gained, suggesting that the cross-state rule could indeed lead to job creation. Because the studies these stakeholders used to present their argument came to vastly different conclusions, with a discrepancy of about one million jobs, looking at the logic of their arguments helps to determine which side is more accurate. Logically, opponents make no errors in reasoning, but they nonetheless rely on a fallacy to make their case: the presumption that shutting down power plants unable to comply with the cross-state rule will lead to more than a million jobs lost. This presumption, considered a false dilemma, does not consider other options – specifically that the rule may cause both job loss and creation, rather than simply one or the other. Job loss may occur because some power plants are projected to shut down from the high costs of compliance, as opponents claim. But job creation is also likely, proponents argue, because other plants are set to become retrofitted with pollution controls to obey the rule, which will require manpower for construction, installation, and maintenance. In addition, the companies operating these plants may look into investing in other forms of energy production, such as more coal plants or wind, solar, and nuclear power. If they find these to be lucrative, they will again need workers to build and maintain the coal and nuclear plants, windmills, or solar panels. As a result, it is probable that more jobs will be created than lost, which is what proponents concluded in a study from the Political Economy Research Institute (PERI). In this study, PERI researchers compared how many workers may be laid off from plant closures to how many workers may be hired from pollution control installation and maintenance, as well as the building of forms of energy, to conclude that 291,577 year-round jobs can result.

 However, opponents make a less powerful argument with a study from the National Economic Research Associates because this study does not account for these job-creating factors. Instead, researchers from NERA presumed only that plant closures and thus a total of 1.4 million firings would occur as a consequence of the cross-state rule. Moreover, their report does not reflect how they came to this number, with plenty of charts and graphs chronicling projections about jobs in the energy sector, as well as future electricity prices and demand, but no data that explains how they produced these projections. This lack of transparency, coupled with its fallacy of presumption, suggests there are holes in the argument of the NERA study.

 A final argument proponents make in favor of the cross-state rule is that it could help to mitigate the effects of climate change by lowering the emissions of sulfur dioxide and nitrogen oxide, two greenhouse gases that contribute to climate change. An argument opponents make against the cross-state rule is that the cap-and-trade program it will implement to regulate the pollution caps of sulfur dioxide and nitrogen oxide may be flawed because it will not gradually phase in reductions as past trading programs have done. Again, proponents, through the use of plentiful scientific data, have made a stronger case and point out that the cross-state rule can diminish some of the harmful effects of climate change. One of the scientific articles these supporters of the rule reference comes from a peer-reviewed science journal called *Nature*, and its bibliography at the end of the seven-page study lists 96 other peer-reviewed articles that all have to do with climate change, greenhouse gas emissions, or both. These other articles and studies uphold not only the notion that climate change is a real phenomenon, but also that it is a result of greenhouse gas emissions such as the ones power plants release into the air – which, as the EPA study was able to show, the cross-state rule can curb with emissions limits.

 Opponents do not as successfully argue their case because the analysis they relied on makes a hasty generalization about the result of the EPA’s cap-and-trade system under the cross-state rule. This analysis, written by the director of the Environmental Energy Alliance of New York, calls the trading program flawed for not being set up as past trading programs were, like the one for the Acid Rain Program that gradually established pollution caps. However, the analysis fails to note that there have been only three other cap-and-trade systems implemented in the United States at the same scale as the one for the cross-state rule. Therefore, the claim that it cannot be just as effective, as the analysis says the others have been, is invalid. To be valid, more examples of fully implemented trading programs must exist so that analysts can determine with certainty that gradually set pollution caps are the only way to guarantee a successful trading system in the U.S. Another problem with this final argument against the cross-state rule is that the analysis making the argument contains an illogical statement about how past trading programs were more effective. As the analysis stated, past pollution caps “were calculated by determining an overall emission rate,” rather than by basing cap amounts on the emission rates of individual power plants (Caiazza). But because power plants release differing amounts of pollution based on the size and efficiency of the plant and whether it has scrubbers, setting caps for each plant makes more sense than setting an overall cap for all plants. These fallacies suggest the opponents’ argument lacks credibility and accuracy.

 To evaluate the controversy over the Cross-State Air Pollution Rule thoroughly, this paper will now examine the moral reasoning of each side, looking at the obligations, values, and consequences of both sides, as well as the normative principles that guide them. The main supporter of the pro side, the Environmental Protection Agency, aims to protect human health and the environment, so its primary obligation is to all Americans: to help those who suffer from respiratory problems as a result of the air pollution they breathe in and to prevent others from getting these ailments. This obligation is formal, as the agency was formed in the 1970s to ensure public health was not only monitored, but protected – suggesting that these stakeholders believe keeping its people safe and healthy is one of the chief duties and functions of the federal government. Other environmental groups, like the Environmental Defense Fund, are obligated to safeguard the environment because they and their supporters believe environmental protection is their mission.

 In addition to these obligations, proponents have values that dictate their actions. Since their main reason for supporting the cross-state rule is that it is likely to lessen the harmful health effects of air pollution, proponents like environmental and liberal advocacy groups stress the importance of human rights, which guarantee the health, safety, and dignity of all people regardless of their socioeconomic status, race, occupation, or sexual orientation. Consequently, they believe that governmental regulations protecting these rights are legitimate and necessary and that a means to these rights is environmental sustainability. This practice allows humans to continue living healthily by preserving natural resources and other living species. Additionally, supporters of the cross-state rule believe in freedom – a component of human rights that differs from the freedom that opponents value. For proponents, freedom means that people can pursue a happy life without worry of harm or illness. Because air pollution can restrict this freedom by making people sick with cancer or respiratory disease, as well as exorbitantly increasing their debt with hospital visits that treat their illnesses, proponents suggest that the cross-state rule and other environmental policies can guarantee the restoration of this freedom and the preservation of their other values.

 Because of their obligations and values, supporters of the cross-state rule seek an outcome that could have both positive and negative ramifications: the successful implementation of the cross-state rule. With the rule, they want to see a gradual decrease in the number of people with respiratory infections or diseases caused by air pollution. They also hope to see a decline in the amount of greenhouse gas emissions that contribute to climate change. They might also see, however, that opponents continue to protest environmental policies that regulate their business and become even more against them, a consequence of the rule that could have long-term effects on whether the EPA continues to have influence and whether other environmental policies get passed. After all, opponents like a few of the affected states, as well as a couple utility companies, have already sued the EPA over the cross-state rule, and Republicans in Congress are attempting to pass legislation that will lessen the power of the EPA and overturn the rule. But a world proponents seek is one that would embrace more sustainable practices, such as driving more fuel-efficient cars and switching from using plastic bags to reusable canvas bags at grocery stores. These practices would extend to the energy industry as well, so that environmental regulations like the cross-state rule become less necessary to ensure pollution control. Instead, power plant companies would automatically install scrubbers and other technologies that limit pollution emissions.

 Two applicable normative principles for the pro side are the principle of paternalism and the principle of rule utilitarianism. The first principle, which states that the role of government is to minimize human suffering, supports policies like the cross-state rule because this rule can minimize the suffering people endure when they contract bronchitis or emphysema or other respiratory diseases that air pollution from greenhouse gas emissions can cause. This preventable suffering justifies the government action of regulating the power plants that release the emissions, according to both supporters of the cross-state rule and the principle of paternalism, meaning that to them the rule is not just legal but necessary. The second principle, which states a rule is morally right if it produces the greatest amount of good for the greatest number of people over the long term, also supports the cross-state rule. This principle supports the rule because proponents say it can allow thousands more people in the U.S. to breathe clean air, even though it causes a lesser good of raising unemployment in the energy sector. However, since the rule’s benefit of preventing fatal health problems outweighs its harm of job loss, the cross-state rule is morally right if applied to the second principle.

 Critics of the cross-state rule also have obligations, values, and consequences, as well as normative principles that explain their opposition to the rule. These opponents, such as grid operators like the North American Electric Reliability Corporation and utility companies like Luminant in Texas, are obligated primarily to energy consumers: all of the Americans who rely on these corporations and companies daily to use electricity. If these companies are privately owned, rather than publicly run by community-based groups or the state government, they are also obligated to investors who expect profit from putting their own money into the company. And they are obligated to their employees, ranging from well-paid CEOs to the workers who operate power plants and construct and maintain power lines and other infrastructure.
    Opponents’ values align with these obligations. Their argument against the cross-state rule is that it could lower the profits of and cut jobs from power plant companies; therefore, they primarily value freedom. This freedom, different from the kind proponents value, pertains to the ability of an individual or a corporation to compete in free markets that base prices on supply and demand and have limited government involvement. Opponents believe that the government should not interfere in the operations of their businesses, as regulations like the cross-state rule do, so that the businesses most able to profit in a competitive market succeed over less able ones. However, with the cross-state rule, which has the potential to slow down or stop the production of coal-based energy, the market for this energy is controlled by the government, and profits depend on whether companies can obey the rule’s mandates. For this reason, critics of the rule find that the key to a free market is self-reliance. Because businesses prefer to rely on their capabilities and resources and remaining independent from anything but market forces, critics of the rule suggest that abolishing it can preserve this preference as well as their other values.

As a result of these obligations and values, opponents seek an outcome that could lead to both positive and negative ramifications: the abolishing of the cross-state rule. This outcome means that the companies comprising the opposing side would not have to invest money into purchasing pollution controls for power plants, which are expensive, or shut down power plants that may cost thousands of workers their jobs. In addition, this outcome ensures to opponents that the lights across the country will not go out because of lost power from the closed plants. However, these outcomes might not occur; instead, opponents could endure consequences of this issue they hope to avoid: namely, that the cross-state rule remains a legal policy that must be enforced and followed. If it is successful in lowering pollution emissions from power plants, opponents might continue to see policies like it that regulate industry to protect human health and the environment. In fact, the EPA has a number of other policies that are either in the process of being implemented, like the cross-state rule, or being planned, such as one mentioned earlier in this paper that intends to reduce mercury emissions from industrial boilers. This one, as well as one being planned to regulate carbon dioxide and other greenhouse gases, directly impacts the energy sector. But a world that opponents seek is one that would allow a capitalist free market to exist without government regulation. In this world, power plants would not have to be equipped with expensive technologies that limit output. Moreover, opponents would also not have to worry about regulatory overload on the market: such stringent government control that companies are unable to supply the demand.

Two normative principles that apply to the critics of the rule are the principle of liberty and the principle of justice. The first principle, which states that people should all equally receive the maximum amount of freedom available, supports doing away with the cross-state rule because this rule regulates companies within the energy industry, preventing them from freely supplying the demand for power they believe they could offer without the regulations. This supply of power is available to other companies in western states not under the purview of the rule, which means that the rule is a violation of the principle of liberty. The second principle, which states that people possess inviolable rights, secured by justice, that even the welfare of society cannot override, also supports overturning the cross-state rule. Though the cross-state rule benefits more people than it disadvantages through its positive health impact, the disadvantaged group – utility companies and grid operators – still possess rights that they believe the rule violates. One such right is the ability to freely do as they wish. According to the principle of justice, because the cross-state rule denies this right to opponents by closing down power plants and laying off workers, the rule must be abolished.

After reviewing all of the arguments and evidence that both sides have presented about the Cross-State Air Pollution Rule, I have come to a solution for this controversy. I believe that a compromise will help to alleviate the concerns that opponents have about jobs and the availability of power for electric grid demands, but will still allow proponents to meet their goals of cleaner air and a healthier public. This compromise would gradually phase in emissions caps and push back the date that all power plants affected by the rule are expected to have lowered current sulfur dioxide emissions by 62 percent and nitrogen oxide emissions by 11 percent. As of now, this date is January 1, 2014; my compromise would set the date an additional two years into the future, to January 1, 2016. With the EPA in October already relaxing “emissions requirements for 10 states, including Texas,” as well as lifting “the cap on interstate emissions trading for the first two years” the rule takes effect, further revision of the rule is not just possible but feasible – and could help ease continued complaints about the rule from utility companies stating idled plants are imminent (Kollipara).

The evidence that this rule may benefit the respiratory health of the American public is solid and compelling, with numerous scientific studies suggesting that emissions caps on coal plants could lower the amount of harmful air pollution that people breathe in. The EPA relied on many of these studies to construct its argument for the rule in its 408-page report. For instance, to determine the financial benefits of the rule based on the respiratory diseases it can prevent, the EPA cited two studies that were published in peer-reviewed medical journals – which I read through after one of the experts I interviewed for this paper claimed that the EPA’s methodology for determining the rule’s financial and health benefits was questionable. According to Kathleen Hartnett White, the director of the Armstrong Center for Energy and the Environment at the Texas Public Policy Foundation, the EPA was not qualified to release such stringent regulations on power plants because the agency read through hospital records of deaths from respiratory and cardiovascular illnesses and, without checking patient histories, claimed that these deaths were a result of breathing in air pollution. However, the EPA’s statistics actually came from peer-reviewed scholarly sources, so opponents’ claims that the policy should be less stringent, if not abolished entirely, are not valid.

One counterargument opponents could pose toward this compromise is that it still does not provide sufficient time for power plant companies to install scrubbers and switch to less sulfurous coal. But an interview with Dr. Neil Carman, a chemist with environmental group the Sierra Club, suggested that an extension of the deadline – amid lower natural gas prices, rising popularity in renewable energy sources such as wind, and water shortages that may cut down on industrial water usage from the state water supply – could help utility companies start a transition from coal energy to other, cleaner forms. He said that switching from coal to other forms of energy could prove to be lucrative because these other forms require less expensive technology than coal plants. After all, besides the boilers and other technology that comprise coal plants, there must also be expensive scrubbers to meet environmental regulations. As Dr. Carman noted, scrubbers retrofitted into the coal plant that supplies energy to the Austin area cost $400 million to build; in contrast, he said, a wind turbine costs roughly $3.5 million. Because of these factors, utilities can start easing away from coal energy, especially with more time to meet the deadline of the cross-state rule as my compromise will provide.

One reason I think the cross-state rule cannot be remanded or significantly altered, beyond pushing back the deadline a couple of years, is that it supports individuals’ freedom to have a safe and healthy life, which I judge to be more important than an unregulated market. In addition, the rule protects the environment. Whereas a regulated market still allows companies to be profitable and to meet most, if not all, of the demand from their customers, a respiratory disease can cause missed days at work, exorbitant hospital bills, and even an early death – an outcome far worse than the limited freedom as a result of government regulations. However, one reservation I have about my compromise is that it might not be satisfactory enough to opponents, many of whom are currently suing the EPA and asking for an injunction that will put a stop to the cross-state rule, even after the EPA revised the rule in October to make it less stringent for some states. Possibly the only way to satisfy opponents is to abolish the rule entirely; because I do not think it should be, my compromise is the best solution.

Besides the two expert interviews, my civic engagement also provided final insight into this complex and controversial issue, further solidifying my belief in the cross-state rule and in my compromise for the sides lobbying for and against it. To complete my civic engagement, I created an informational brochure about the Cross-State Air Pollution Rule in Microsoft Publisher and then handed it out to passersby near the South Congress food trailers. I discovered that creating the brochure taught me more than handing it out did. Because many of the passersby pretended I did not exist, or accepted my brochure without engaging in conversation, I did not have insightful conversations with them that offered a new perspective I had not considered before about the rule. However, making the brochure was extremely helpful. With much less space to explain the policy, the stakeholders involved, and their arguments about it, I had to discern what the most important information was and how best to express it. I summarized each of these parts without expressing my personal opinion; by the end, once the pro and con arguments were laid out side by side, I remained convinced that I had correctly decided to support the cross-state rule for one main reason: that the opponents’ arguments rest on one underlying factor – the shutdown of enough coal plants to significantly reduce jobs and energy supplies. Their evidence suggesting such a high rate of closing plants, though, has not been as satisfactory and conclusive as the proponents’ evidence. For this reason, as well as others I have already listed, I believe the Environmental Protection Agency should regulate greenhouse gas emissions from coal power plants with the Cross-State Air Pollution Rule.

Appendix A: Official Text of the Rule

**ENVIRONMENTAL PROTECTION AGENCY**

**Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone in 27 States; Correction of SIP Approvals for 22 States**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** In this action, EPA is limiting the interstate transport of emissions of nitrogen oxides (NOX) and sulfur dioxide (SO2) that contribute to harmful levels of fine particle matter (PM2.5) and ozone in downwind states. EPA is identifying emissions within 27 states in the eastern United States that significantly affect the ability of downwind states to attain and maintain compliance with the 1997 and 2006 fine particulate matter national ambient air quality standards (NAAQS) and the 1997 ozone NAAQS.

Also, EPA is limiting these emissions through Federal Implementation Plans (FIPs) that regulate electric generating units (EGUs) in the 27 states (Alabama, Arkansas, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, West Virginia, and Wisconsin). This action will substantially reduce adverse air quality impacts in downwind states from emissions transported across state lines. In conjunction with other federal and state actions, it will help assure that all but a handful of areas in the eastern part of the country achieve compliance with the current ozone and PM2.5 NAAQS by the deadlines established in the Clean Air Act (CAA or Act). The FIPs may not fully eliminate the prohibited emissions from certain states with respect to the 1997 ozone NAAQS for two remaining downwind areas and EPA is committed to identifying any additional required upwind emission reductions and taking any necessary action in a future rulemaking.

In this action, EPA is also modifying its prior approvals of certain State Implementation Plan (SIP) submissions to rescind any statements that the submissions in question satisfy the interstate transport requirements of the CAA or that EPA’s approval of the SIPs affects our authority to issue interstate transport FIPs with respect to the 1997 fine particulate and 1997 ozone standards for 22 states (Alabama, Arkansas, Connecticut, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Massachusetts, Minnesota, Mississippi, Missouri, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Virginia, and West Virginia).

Appendix B: Interview Questionnaire

Questions for Dr. Neil Carman:

1. Why do you support the policy?
2. What are some other benefits of the policy?
3. What do you think of the opponents’ claim that the policy could cause excessive strain on the electric grid in Texas?
4. What do you think could be some consequences of the policy if it’s established as written?
5. One component of Capstone is that we create a feasible and realistic “final solution” that addresses the concerns of one side but also considers the arguments of the other. Mine is a compromise that would postpone the date of compliance two years into the future. I’m worried that two years is not enough. What do you think of my compromise and why?
6. What would both sides think of my compromise? Do you think they would agree with it?

Questions for Kathleen Hartnett White:

1. What do you dislike about the policy?
2. What are some other downfalls to the policy?
3. What do you think about the EPA’s argument that the rule will afford numerous health benefits to the American public?
4. What do you think could be some consequences of the policy if it’s established as written?
5. One component of Capstone is that we create a feasible and realistic “final solution” that addresses the concerns of one side but also considers the arguments of the other. Mine is a compromise that would postpone the date of compliance two years into the future. I’m worried that two years is not enough for plants to meet compliance. What do you think of my compromise and why?
6. What would both sides think about my compromise? Do you think they’d agree with it?

Appendix C: Contact Info for Interviewees:

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